3.2.7 Wildlife

3.2.7.1 Introduction and Regulatory Framework

This section discusses potential impacts on wildlife resources, including some species that are USFS MIS, by implementing the Project. Wildlife resources discussed in the section include upland game birds, mammals, and reptiles that are not designated as threatened, endangered, or candidates for listing under the ESA; species listed as sensitive by the USFS, BLM, or states; or sensitive species that also are designated as MIS affected by the Project. Detailed analysis of potential effects on MIS, including forest plan consistency determinations are contained in the USFS Special Status Wildlife Report (USFS 2015b). Analysis of potential effects on special status wildlife species is contained in Section 3.2.8; analysis of potential effects on migratory birds is contained in Section 3.2.9; and analysis of potential effects on fish, amphibian, and macroinvertebrates is contained in Section 3.2.10.

3.2.7.1.1 Regulatory Framework

Implementation of the Project would be consistent with statutes, regulations, plans, programs, and policies of affiliated tribes, federal agencies, and state and local governments.

Federal

- The FLPMA, as amended, consolidates and articulates BLM and USFS management responsibilities and governs most uses of federal lands, including authorization to grant or renew rights-of-way. In accordance with FLPMA, BLM and USFS must make land-use decisions based on principles of multiple use and sustained yield. As such, a right-of-way grant must be limited to its necessary use and must contain terms and conditions that reflect the agencies' management responsibilities under FLPMA, including minimizing impacts on fish and wildlife habitat.
- The URMCC is authorized under the CUP Completion Act of 1992 (P.L. 102-575) to set terms and conditions for completing the CUP, which diverts, stores and delivers large quantities of water from numerous Utah rivers. The URMCC is responsible for designing, funding, and implementing projects to offset the impacts on fish, wildlife. and related recreational resources caused by CUP and other federal reclamation projects in Utah. Land owned and managed by the URMCC for CUP mitigation commitments are located in the Project area.
- The NFMA, as amended, and its implementing regulations under 36 CFR 219, consolidate and articulate USFS management responsibilities for lands and resources of the National Forest System. The NFMA requires each national forest develop a management program based on multiple-use, sustained-yield principles and implement a land-management plan for each unit of the National Forest System. The implementing regulations at the time the current forest plans were approved required the identification of MIS (36 CFR 219.19). MIS were selected because their population changes were believed to indicate the effects of management activities on habitats of other species of selected major biological communities or water quality. The land-management plans established objectives for the maintenance and improvement of habitat for the MIS.
- The BLM WO-IB 2012-097 states current BLM policy for any cutting or removal of timber, trees, or vegetative resources, including such resources located in the clearing limits of rights-of-way.
- The BLM Utah IM-2005-091 provides the Utah BLM Riparian Management Policy aimed at identifying, maintaining, restoring, and/or improving riparian values to achieve a healthy and productive ecological condition for maximum long-term benefits and overall watershed protection while allowing for reasonable resource uses.

- Executive Order 13112 (*Invasive Species*) requires that federal agencies prevent the introduction and spread of invasive species and prohibits their authorization of actions that would be likely to cause or promote the introduction or spread of invasive species.
- BLM RMPs and Management Framework Plans for Wyoming, including Rawlins Field Office (2008) for Colorado, including White River (1997, as amended), Little Snake (2011, as amended), and Grand Junction (2015) Field Offices; for Utah, including Richfield (2008), Fillmore (1987), Moab (2008), Price (2008) and Vernal (2008) Field Offices, and Salt Lake District (1990), specify regulations and goals for management of BLM-administered land and set restrictions to protect fish and wildlife and the habitats on which they depend.
- National Park Service Organic Act, passed in 1916 (16 U.S.C. 1), established the National Park Service as an agency under the direction of the Secretary of the Interior with the stated purpose of promoting use of national park lands while protecting them from impairment. Specifically, the Act declares that the National Park Service has a dual mission, both to conserve park resources and provide for their use and enjoyment "in such a manner and by such means as will leave them unimpaired" for future generations (16 U.S.C. 1).
- NPS Management Policies 2006 sets the framework and provides direction for all management decisions relating to national park lands. This document states the NPS "will use all available authorities to protect lands and resources within units of the national park system." NPS personnel are required to be knowledgeable about and adhere to laws, regulations, and policies pertinent to NPS management included in this document.
- NPS Director's Order 12 (DO-12 and Handbook; 66 FR 7507) describes the NEPA process and describes the responsibility of the NPS regarding participation in or coordination of NEPA procedures for actions occurring on NPS land. This order outlines the NPS's requirement of affirmatively stating whether or not impairment [as defined by the Organic Act and the 2006 Management Policies document] to park resources would result from a proposed action and provides guidelines for assessing intensity of impacts.

State

Wyoming

- The Wyoming State Wildlife Action Plan (SWAP), 2005 and revised in 2010, is a coordinated, comprehensive conservation strategy designed to maintain the health and diversity of wildlife, including species with low and declining populations in Wyoming.
- Wyoming State Code Section 23-1-101 defines wildlife as all wild mammals, birds, fish, amphibians, reptiles, crustaceans, and mollusks designated by the Wyoming Game and Fish Commission and the Wyoming Livestock Board.
- Wyoming State Code Section 23-1-103 establishes that all wildlife is the property of the State of Wyoming and directs the control, propagation, management, protection, and regulation of wildlife in Wyoming.
- Wyoming State Code Section 23-1-302 empowers the Wyoming Game and Fish Commission to manage big game hunting seasons, take, and areas in Wyoming and to develop, improve, and maintain lands and waters for the management and protection of all wildlife.
- Wyoming State Code Section 23-3-108 states it is a violation to take or intentionally destroy the nest or eggs of any nonpredacious bird in Wyoming.
- Wyoming State Code Section 23-3-101 prohibits the take of eagles.

- Wyoming State Code Section 23-3-102 prohibits the take of any big or trophy game animal or gray wolf where classified as a trophy game animal without the proper license or authority.
- Wyoming State Code Section 23-3-103 prohibits the take of any furbearing animal or game bird without the appropriate license in Wyoming.

Colorado

- The Colorado SWAP published in 2006 is a comprehensive management strategy developed by Colorado Parks and Wildlife (CPW; formerly known as Colorado Division of Wildlife [CDOW]) and the State of Colorado to conserve native species populations and habitats and prevent additional federal listings.
- Colorado State Code Statute 33-2-101 describes the State's intent to protect wildlife in Colorado under the Nongame, Endangered, or Threatened Species Conservation Act.
- Colorado State Code Statute 33-2-104 regulates the take, possession, transportation, exportation, processing, sale or offering for sale, or shipment of nongame wildlife as may be deemed necessary to manage nongame species in Colorado.

Utah

- The Utah SWAP of 2005 is a comprehensive management plan designed to conserve native species populations and habitats in Utah and prevent the need for additional federal listings.
- Utah State Code Section 23-14-1 directs the UDWR to protect, propagate, manage, conserve, and distribute protected wildlife throughout Utah. This statute also authorizes UDWR to identify and delineate crucial seasonal wildlife habitats.
- Utah Partners in Flight (PIF) Avian Conservation Strategy, Version 2.0, prioritizes avian species and their habitats and sets objectives designed to determine which species are most in need of immediate and continuing conservation effort. The other purpose of the strategy is to recommend appropriate conservation actions required to accomplish stated objectives.

3.2.7.2 Issues Identified for Analysis

Issues concerning wildlife species, including MIS, were identified through coordination and in cooperation with BLM, USFS, and FWS resource specialists; state wildlife agencies; conservation groups and trusts; and members of the public during the scoping process. Issues considered for analyses in the EIS are presented in Table 3-78.

TABLE 3-78
WILDLIFE ISSUES IDENTIFIED FOR ANALYSIS

Issue Identified	Analysis Considerations
Upland Game Birds[1]	
Impacts on upland game birds including chukar, pheasant, dusky and ruffed grouse, and quail	▪ Estimate loss and degradation of potentially suitable habitats for upland game birds in the Project area ▪ Qualitatively assess potential disturbance to foraging and nesting habitat

TABLE 3-78
WILDLIFE ISSUES IDENTIFIED FOR ANALYSIS

Issue Identified	Analysis Considerations
Big Game	
▪ Impacts on big game species, including Management Indicator Species (pronghorn, mule deer, elk, moose, bighorn sheep [Rocky Mountain and desert subspecies] ▪ Impacts on crucial/critical winter range and spring habitat ▪ Impacts on migration corridors	▪ Estimate loss and degradation of designated crucial habitat for each species affected by the Project ▪ Estimate potential disturbance to migration corridors ▪ Qualitatively assess fragmentation of designated crucial habitats and location of migration corridors relative to crucial habitat
Mammals	
Impacts on mammals such as bats, large rodents (i.e., beaver, muskrat, marmot), meso-carnivores (i.e., bobcat, weasels, martens, and raccoons), apex predators (i.e., bear, gray wolf and mountain lion) from: ▪ temporary displacement of wildlife during construction ▪ habitat linkages and movement corridors	▪ Qualitatively assess impacts on potentially suitable foraging and breeding habitat for bats in the alternative route study corridors ▪ Qualitatively assess potential risk of mammal collision due to the Project ▪ Estimate loss, degradation and fragmentation of habitat in alternative route study corridors
Reptiles	
Impacts on reptiles	Qualitatively evaluate impacts on potentially suitable habitat in the Project area

NOTE: [1]Special status birds are addressed in Section 3.2.8 and migratory birds are addressed in Section 3.2.9

3.2.7.3 Regional Setting

The Project area falls within a number of geological formations and features that have shaped the evolution and ecology of the vegetation and wildlife communities that occur in the area. The Project area is situated in the Platte River, Colorado River, and Great Basin drainages and encompasses parts of the Wasatch Range, the Uinta Mountains, and the Rocky Mountains. Five Level III ecoregions (EPA 2010b) surround the Project area: Wyoming Basin, Southern Rockies, Colorado Plateaus, Wasatch and Uinta Mountains, and Central Basin and Range. Climates across the ecoregions range from warm or hot summers of low humidity and precipitation, to cold dry or severe winters with deep snowpack. Elevations in the Project area range from 3,281 to 12,238 feet above mean sea level. The diversity of vegetation communities (Section 3.2.5) reflects the climate variation and large changes in elevation in the five ecoregions. In addition, naturally occurring disturbance regimes such as wildfire can have a large influence on environmental erosion and runoff in the five ecoregions (Souza 1984; World Wildlife Fund [WWF] 2006). Furthermore, anthropogenic disturbance (e.g., livestock grazing, agriculture and land development) affects environmental conditions by introducing habitat fragmentation. Factors that influence environmental conditions and habitat composition in the five ecoregions will naturally impact the wide diversity of bird, mammal, fish, reptile, amphibian, and macroinvertebrate species that inhabit them.

Wildlife habitat provided in the ecoregions by the different vegetation communities include riparian, arid and semi-arid desert shrub, grassland, and sagebrush communities at lower elevations; sagebrush steppe, pinyon-juniper, and mountain shrub communities on mid-elevation slopes; mixed conifer and aspen at higher elevations; and alpine vegetation and montane forest communities at high elevations.

At low elevations riparian habitat can support a high density and diversity of resident, transient, and migratory wildlife species relative to habitat area. Sagebrush habitats are important habitats for many sagebrush obligates, including a number of USFS-, BLM-, and state-sensitive wildlife (Section 3.2.8). Both habitats are identified as key habitat types and a priority for conservation actions in SWAPs for

Wyoming, Colorado, and Utah. Arid and semi-arid desert shrub and grasslands also provide habitat for a diverse number of birds, mammals, and reptiles, including species with limited home range and movement capabilities and those adapted to semi-arid environments of sparse vegetation and fluctuating temperatures. Adaptive mechanisms include avoiding extreme temperatures through use of cover or burrowing or nocturnal and crepuscular activity patterns; adapting to limited food and water resources through food storage, omnivorous or generalist foraging patterns, and the ability to gain water or moisture requirements from food resources; or maximizing reproduction rates during favorable conditions (Abere and Oguzor 2011).

At mid-level elevations sagebrush steppe, pinyon-juniper, and mountain shrub provide valuable habitat, vegetation structure, and cover for many native birds, reptiles, and mammals—including big game species, especially during winter (Bennetts et al. 2012). Predator-prey dynamics at low- and mid-level elevations can be closely linked, often following boom and bust cycles as a result of bottom-up processes such as changes in vegetation and forage availability that directly impact prey species, or top-down processes that increase predator numbers and predation rates. At higher elevations mixed conifer, aspen, alpine vegetation, and montane communities support wide-ranging ungulates. At higher elevations, however, individual and herd movement patterns are restricted by topography, climate, and seasonal access to crucial ranges (WWF 2006).

3.2.7.4 Study Methodology

3.2.7.4.1 Inventory

Background information for wildlife species was obtained from a variety of sources including BLM and USFS land-management plans; state species accounts for Wyoming, Colorado, and Utah; scientific literature (Feldhamer et al. 2003); or from databases including (NatureServe 2014), (WWF 2006), and International Union for Conservation of Nature (IUCN) Redlist (IUCN n.d.).

Locality data for wildlife species likely to occur in the Project area were obtained from natural heritage programs (WYNDD, Colorado Natural Heritage Program [CNHP], and Utah Natural Heritage Program [UNHP]), state agencies (Wyoming Game and Fish Department [WGFD], CPW, and UDWR), resource specialists, and all BLM field offices and national forests crossed by the Project corridors. Data for big game species are described separately under Mammals (in this section). However, definitive information regarding the distribution of species and quantitative data descriptive of population size and trends are limited for many wildlife species likely to occur in the Project area. For species with limited data available for analysis, a qualitative evaluation of the potential occurrence of species in the Project area was performed. Classification of habitat in the Project area was based on vegetation communities obtained from the GAP dataset (USGS 2010b), which incorporates the Northwest Regional GAP and the SWReGAP (USGS 2010b). Habitat for species considered in this analysis includes any area that combines adequate resources and environmental conditions for occupancy, survival, and reproduction of individuals (Franklin et al. 2000).

For the purposes of evaluating Project-related impacts on wildlife species, detailed information was collected in a 2-mile-wide alternative route study corridor (1 mile on either side of the reference centerline) for each alternative route. While data inventory efforts were focused on the alternative route study corridors, statewide data also were collected to evaluate potential impacts of the Project on wide-ranging species that use seasonal habitats and migration routes in Wyoming, Colorado, and Utah.

Wildlife species likely to occur in the Project area are grouped according to bird, mammal and reptile species. Upland game birds are addressed in this section, while migratory birds, including raptors, are addressed separately in Section 3.2.9. Special status birds are addressed in Section 3.2.8. Wildlife species

identified as particularly sensitive to the Proposed Action (e.g., big game) by the public or federal and state agencies during the scoping process are considered separately.

Upland Game Birds

Upland game bird species recorded in the five ecoregions crossed by the Project area include chukar (*Alectoris chukar*), grouse and pheasant (*Phasianidae*), quail (*Callipepla* spp.), wild turkey (*Meleagris gallopavo*) and white-tailed ptarmigan (*Lagopus leucura*).

The diversity of vegetation cover types and habitats present is reflected in the diversity of life history traits among upland game birds in the Project area. Some upland game bird species are habitat obligates, while others are likely to occur across the range of habitats in the Project area. Species composition and occurrence in any given habitat type is a function of suitable vegetation for nest success, food availability, and cover from predators (Martin 1993).

Mammals

Mammals likely to be present in the five ecoregions crossed by the Project area include small aerial species such as bat (*Vespertilionidae, Molossidae,* and *Phyllostomidae*) and terrestrial species, which include mouse and vole (*Muridae*), shrew (*Soricidae*), rat (*Dipodomys* and *Neotoma* spp), gopher (*Geomyidae*), chipmunk (*Tamius striatus*), marten and weasels (*Mustelidae*), and squirrel (*Spermophilus* and *Tamias* spp). Mid-sized mammals likely to be present include skunk (*Mephitidae*), rabbit (*Sylvilagus* spp), hare (*Lepus* spp), marmot (*Marmota* spp), beaver (*Castor canadensis*), and raccoon (*Procyon lotor*). Meso- and large-bodied carnivores likely to be present include badger (*Taxidea taxus*), fox (*Vulpes* spp), coyote (*Canis latrans*), bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), and black bear (*Ursus americanus*). Ungulates include pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*), moose (*Alces alces*), Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*), and desert bighorn sheep (*Ovis canadensis nelsoni*).

Life histories of mammal species vary in response to changes in environmental conditions and local habitat quality (Shefferson 2010). Population abundance naturally cycles and fluctuates as conditions change (Norrdahl 1995). In addition, mammal assemblages can be sensitive to disturbance. Arid and semi-arid desert shrub, sage-steppe, and grasslands are important habitats for small- and medium-sized mammal species. Therefore, disturbance to such habitats may be more pronounced for smaller-bodied species with limited mobility, ultimately affecting dispersal rates, diversity, and abundance of small- and medium-sized mammal populations (Hanser et al. 2011a). Larger bodied species may compensate through shifts in temporal or spatial activity and movement patterns (Feldhamer et al. 2003). Abundance and distribution data of many mammal species in the Project area were limited. The availability of suitable habitat provides a proxy for potential mammal occurrence. Therefore, mammal occurrence was qualitatively assessed based on the availability of potentially suitable habitat in the Project area.

Big Game

Populations and Habitat

Big-game populations are managed by state wildlife agencies in Wyoming, Colorado, and Utah. Designated big-game habitat in the three states includes habitat that is a limiting factor in population long-term survival, which comprises crucial, severe, and critical habitat. Crucial habitat is defined by UDWR as habitat on which the local population depends for survival; degradation or unavailability of crucial habitat can lead to significant declines in carrying capacity and/or numbers of a species. Crucial summer, crucial winter, and crucial year-long are designated habitats in Wyoming and Utah; crucial spring/fall and crucial winter/spring are designated habitat in Utah only. Summer concentration (elk), critical winter

(mule deer), and severe winter (pronghorn) are designated big-game habitats in Colorado that are equivalent in value to crucial habitat in Wyoming and Utah. Mapped migration corridors are designated in Wyoming and Colorado only.

Designated big-game habitat in Wyoming, Colorado, and Utah also includes nonlimiting range. Non-limiting big-game ranges in Utah include substantial habitats. The UDWR defines substantial habitat as habitat that is used by a wildlife species but is not crucial for population survival, and degradation or unavailability of substantial value habitat will not lead to significant declines in carrying capacity and/or numbers of the wildlife species in question. Nonlimiting big-game habitat in Wyoming includes winter, winter year-long, year-long, and spring/summer/fall range. Nonlimiting big-game habitat in Colorado includes winter concentration areas and winter range.

The terminology used for each designated big-game habitat varies by state. Data used to analyze the level of Project impacts on big-game habitat and migration corridors were obtained from WGFD, CPW, and UDWR. When provided as GIS line files, migration corridors for elk, mule deer, and pronghorn were buffered by 0.25 mile on either side. Bighorn sheep production range and winter range were obtained from CPW (2012a, b); bighorn seasonal range boundaries were obtained from UDWR (2006a) and WGFD (2011a). Desert bighorn sheep seasonal range was obtained from UDWR (2008a). Elk seasonal range boundaries (WGFD 2011b) and migration corridors (WGFD 2008) were obtained from WGFD; winter concentration areas, summer concentration areas, severe winter range, production areas, and migration corridors were obtained from CPW (2012c); seasonal range boundaries were obtained from UDWR (2007a). Mule deer seasonal range boundaries (WGFD 2010a) and migration corridors (WGFD 2008) were obtained from WGFD; severe winter range (elk and pronghorn), critical winter range (mule deer) and migration corridors were obtained from CPW (2012c, d, e); and seasonal range boundaries were obtained from UDWR (2007b). Moose seasonal range boundaries were obtained from WGFD (2011c) and from UDWR (2006b). Pronghorn seasonal range boundaries (WGFD 2010a) and migration corridors (WGFD 2008) were obtained from WGFD; winter concentration, severe winter range, and migration corridors were obtained from CPW (2012e); and summer and year-long habitats were obtained from UDWR (2010a).

Elk

Elk are MIS for the Ashley and Manti-La Sal National Forests. Detailed analysis of potential effects on MIS is included in the USFS Special Status Wildlife Report (USFS 2015b). Elk are habitat generalists and have increased their range throughout the Project area, largely as a result of reintroduction programs. Patterns of seasonal range use often vary according to region and vegetation. Elk are opportunistic foragers with a varied diet. Winter diet consists primarily of grasses and shrubs and summer diets include forbs. Some populations undertake seasonal migrations while others are non-migratory. Winter migrations are linked to climatic condition, like the first significant snow fall, and are undertaken to avoid seasonal shortages in forage. Limiting factors include the availability of crucial/severe winter habitat and calving areas, extreme weather (heavy snowfall and persistent cold temperatures, and extended drought), predation, legal harvest (Peek 2003), and disease (Finley and Grigg 2008).

Mule Deer

Mule deer are MIS for the Ashley and Manti-La Sal National Forests. Detailed analysis of potential effects on MIS is included in the USFS Special Status Wildlife Report (USFS 2015b). Mule deer are found in habitats that include arid and semi-arid desert shrub to mountain temperate coniferous forests (Appendix J), benefiting from a varied diet of shrubs, forbs, trees, and grasses. Mule deer have small home ranges relative to those of other big game species. Populations also exhibit habitual, seasonal, and diurnal movement patterns but can adapt to anthropogenic disturbance (Mackie et al. 2003). Limiting factors that often control mule deer populations include the availability of crucial/critical winter habitat

and fawning areas, extreme weather (heavy snowfall and persistent cold temperatures, and extended drought) disease (most notably Chronic Wasting Disease in the Rocky Mountains region and mid-western states), predation, competition for forage with livestock, legal harvest, and the effects of human induced habitat alteration (Sanchez-Rojas and Gallina-Tessaro 2008).

Pronghorn

Pronghorn are generally found in sagebrush, desert shrub, grasslands, and agricultural land. Pronghorn are selective feeders; dietary composition rarely reflects the relative availability of plants selected as forage in pronghorn habitats (Byers 2003). The size of pronghorn groups observed is generally larger in the winter before dispersal. Pronghorn form separate bachelor and female-kid groups in spring and summer and mixed herds in late summer and early fall (Hoffmann et al. 2008). Some populations undertake seasonal movements of up to 160 kilometers from their summering area. Long-distance seasonal migrations are common, and pronghorn show high fidelity to migratory routes despite geographic barriers and bottlenecks. Migratory bottlenecks are areas where topography, vegetation, development, or other landscape features restrict animal movements to narrow or limited regions. Migration is an adaptive behavioral strategy that avoids seasonal resource shortages (Baker 1978; Sawyer et al. 2005). Limiting factors for pronghorn include the availability of crucial/severe winter habitat and fawning areas, extreme weather (heavy snowfall and cold, and extended drought), predation that can induce high rates of fawn mortality in the first 45 days to 1 year of life, and disease- and parasite-induced mortality (Byers 2003).

Bighorn Sheep

Bighorn sheep include two species, Rocky Mountain bighorn sheep and Desert bighorn sheep. Rocky Mountain bighorn sheep are state sensitive for Wyoming, and USFS sensitive for Ashley, Manti-La Sal and Uinta National Forests. Designated UDWR habitat occurs on Ashley and Uinta National Forests but is not affected by the Project. Designated habitat for the species does not occur on the Manti-La Sal National Forest. Rocky Mountain bighorn sheep are found in open habitats, such as alpine meadows, open grasslands, shrub-steppe, talus slopes, rock outcrops, and cliffs. This species uses open forests in some areas for foraging and thermal cover (Beecham et al. 2007; NatureServe 2014). Rocky Mountain bighorn sheep migrate seasonally between summer and winter ranges. Winter ranges occur in areas with low snow accumulation (Krausman and Bowyer 2003).

Desert bighorn sheep are designated as USFS-sensitive for the Manti-La Sal National Forest, and BLM-sensitive for Colorado. The desert bighorn's diet changes by habitat and season. Hall (1946) reported fruits of the prickly pear (*Opuntia basilaris* and *O. engelmannii*) and ooze apple (banana yucca [Yucca *baccata*]) are among the most important food items. Other important foods are a variety of grasses, sagebrush (*Artemisia tridentata*), mountain mahogany (*Cercocarpus intricatus*), Mormon teas (*Ephedra* spp.), winter fat (*Krascheninnikovia lanata*), and buckwheats (*Eriogonum* spp.) (Monson and Sumner 1980). Desert bighorns do not migrate (UDWR 2008a) Freestanding water is a critical habitat element for desert bighorns with lambs and ewes visiting watering holes almost daily during hot, dry months (Nevada Department of Wildlife 2012). In addition, temperatures limit daily movement patterns and can induce heat stress (Krausman and Bowyer 2003). Limiting factors to both species of bighorn sheep include loss of crucial habitat due to development, forage competition with ungulates, extreme weather, predation, and disease (Nevada Department of Wildlife 2012; UDWR 2008a).

Moose

Moose are listed as state sensitive in Wyoming. Moose have a varied diet of forbs, shrubs and grasses that varies according to season, and often overlaps dietary requirements of other ungulates. In addition, shrub composition is important for calf hiding sites, which may be more important for survival than calving areas (Peek 2003). Moose habitat includes mixed conifer forests for winter cover and riparian areas for

foraging (Appendix J). Not all moose populations undertake seasonal migrations, and the time of migration often differs for males and females with calves. Movement to upper elevations in the summer is driven by forage availability, while movement onto winter range and to lower elevations corresponds with the first snowstorms (Peek 2003). Home range size and population density vary according to geographic region and vegetation. Sexes tend to occupy separate areas in the range, except during breeding season, and social aggregations tend to be short-term (Peek 2003). The UDWR state that limiting factors for moose include availability of crucial habitat (UDWR 2009a) competition for forage, changes in herd sex ratios in hunted populations that affects calf production (Peek 2003), predation, extreme weather conditions, and disease (NatureServe 2014).

Reptiles

Reptiles likely to occur in a wide range of habitats in the Project area include fence lizard (*Scleroporus undulatus*), garter snake (*Thamnophis elegans*), and Great Basin gopher snake (*Pituophis catenifer deserticola*). Reptile species limited to sagebrush desert habitat also are likely to be present and include northern sagebrush lizard (*Sceloporus graciosus*), desert-horned lizard (*Phrynosoma platyrhinos*), and longnose leopard lizard (*Gambelia wislizenii*).

Life history traits of many reptile species are closely linked to abiotic and biotic conditions. Activity patterns and dispersal rates are driven by relative humidity and climate regimes, and microclimates in larger habitat types (e.g., solar heated rocky outcroppings in sagebrush ecosystems) are used for basking and thermoregulation (Grant and Dunham 1988; Stebbins 2003). Species diversity and occurrence across arid and semi-arid sagebrush habitats is highly dependent on the effectiveness of a given habitat in providing cover from predators and open inter-shrub space for movement and reduction in predator detection between refuges (Newbold 2005; Stebbins 2003; Vitt and Pianka 1994). Limited data were available for reptile species distribution in the Project area. The availability of suitable habitat provides a proxy for potential reptile occurrence. Therefore, reptile occurrence was qualitatively assessed based on the availability of potentially suitable habitat in the Project area.

Biological Resource Conservation Areas

State wildlife management, habitat management areas, and wildlife areas in Wyoming, Colorado, and Utah are managed by federal, state, or a combination of both state and federal governmental agencies and are areas designated to manage and protect habitats for key wildlife resources. Conservation areas that occur in part or in their entirety in the Project area are discussed in Section 3.2.15.

3.2.7.4.2 Impact Assessment and Mitigation Planning

The methodology used to assess potential impacts on wildlife resources for the purpose of interdisciplinary comparison of alternative routes included the following:

- Identify the types of potential effects on wildlife resources that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities. As described in Appendix B, project construction activities include preconstruction engineering surveys, geotechnical investigations, construction of access roads and structure pads, clearing of work areas, installation of foundations and structures, and site reclamation. Project operation and maintenance activities include inspection and repair of transmission lines, substations, and support systems; access road and work area repair; and vegetation management.
- Assess the level of initial impacts on wildlife resources present in the alternative route study corridors.

- Identify appropriate selective mitigation measures (Table 2-13) for minimizing some potential adverse effects and determining specific areas where selective mitigation measures should be applied
- Disclose the level of potential residual impacts on wildlife resources (i.e., impacts anticipated after application of selective mitigation measures).

Design features of the Proposed Action for environmental protection (Table 2-8) were considered when assessing both initial and residual impacts on all resources. Additional discussion of the methods used in analyzing effects of the Project on wildlife resources to support interdisciplinary comparison of alternative routes are discussed in the Effects Analysis section.

Supplemental analyses were necessary to address some of the issues raised by the public and the agencies during scoping. Quantitative or qualitative analyses were performed, depending on information available to evaluate potential impacts of the Project on wildlife resources or to meet the requirements of relevant law, regulation, or policy. The methods for these supplemental analyses are discussed in the Effects Analysis section.

Types of Potential Effects

The construction, operation, and maintenance of the Project would result in both direct and indirect effects on wildlife. Direct effects are effects caused by the action and occur at the same time and place (40 CFR 1508.8(a)). Indirect effects are effects caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8(b)). Direct and indirect effects encompass short- and long-term impacts.

The type of potential effect experienced by each wildlife species would depend on species-specific sensitivity to activities related to the construction, operation, and maintenance of the Project. Potential direct and indirect effects of project construction, operation, and maintenance on wildlife species and/or their habitat were identified through a review of scientific literature and databases such as NatureServe (2014), WWF Wildfinder (2006) and IUCN Redlist (n.d.).

For some wildlife resources, the types of potential effects will vary depending on the type of transmission line tower selected. Potential effects on upland game birds associated with different transmission line tower types are described below. For mammals (including big game) and reptiles, this analysis assumes that the types of potential effects would be the same regardless of the tower type selected. The estimated extent of surface disturbance required to construct all transmission line tower types described in Section 2.1 is assumed to be the same.

Upland Game Birds

Direct Effects

Direct effects on upland game birds that may occur as a result of construction, operation, and maintenance of the Project include potential for bird mortality and injury, loss, degradation, and fragmentation of foraging, nesting, and sheltering habitat, and potential disruptions of breeding activities. These effects would be similar to effects on migratory birds, described in detail in Section 3.2.9. The types of direct effects on upland game birds may vary depending on the type of transmission line tower selected. Risk of mortality and injury to upland game birds from in-flight collision is likely greater for guyed-V and guyed-delta transmission line towers (refer to Section 2.1 for a description of proposed transmission line towers types). Upland game birds typically fly at low heights, potentially putting them at the height of guy wires

during flight. The probability of collision for upland game birds is greater than for some other bird species due to their larger size and low flight maneuverability (Avian Power Line Interaction Committee [APLIC] 2012). Collision risk may be increased in areas where the Project is located near habitats with high upland game bird use or where lines are located between two habitat types that birds frequently fly between at low heights (i.e., foraging and roosting sites) (APLIC 2012).

Indirect Effects

Indirect effects on upland game birds that may occur as a result of construction, operation, and maintenance of the Project include potential for alterations to plant community composition, fire regimes, and habitat microclimate quantities and quality. These effects would be similar to effects on migratory birds, described in detail in Section 3.2.9.

Mammals

Direct Effects

Habitat loss, degradation and fragmentation due to construction of permanent access roads and facilities associated with the Project are likely to affect mammal species, particularly in sensitive habitat such as arid and semi-arid desert shrub, sage-steppe, and grasslands (Section 3.2.5). Habitat quality is the ability of an environment to provide conditions that increase individual and/or population survival and reproductive performance (Franklin et al. 2000). Habitat degradation is a decrease in the quality of habitat due to human activities (Groom 2006). Habitat fragmentation is a reduction in area of a specific habitat type, and change in configuration into progressively smaller and more isolated habitat patches (Noss et al. 2006a). Habitat loss, degradation, and fragmentation increase habitat patch isolation; reduce potential connectivity between patches and sub-populations; and impact dispersal rates, diversity, and abundance in mammal species (Hanser et al. 2011a; Noss et al. 2006a). Short- and long-term impacts on small- and medium-sized mammal species, particularly with limited mobility, include loss of cover, foraging and reproductive habitat, which can adversely influence population size (Andrén 1994).

Disruption to species behavioral patterns and displacement of wildlife could occur during Project construction. However, movement of small- and medium-sized species is likely to be restricted (i.e., by limited availability of alternative quality habitat in proximity to occupied habitat affected by the Project). For displaced territorial species, movement patterns and alternative habitat could be restricted by adjacent defended territories (Feldhamer et al. 2003). Wide-ranging species may shift temporal or spatial activity and movement patterns in response to construction noise and the presence of humans and construction equipment (Feldhamer et al. 2003).

Mortality or injury to mammals could occur during construction and maintenance of the Project. The probability of mortality or injury of wildlife is likely to be a function of species life history and physiological traits. Small species could be crushed by Project equipment through either the crushing of burrows or of vegetation used as cover. Mortality and injury also could occur as a result of collision with moving construction equipment using access roads associated with the Project. The speed of vehicles can affect the number of wildlife collisions on roads with lower speeds, effectively reducing the collision rate by increasing the reaction time of both driver and animal (Jaarsma et al 2006). Reducing vehicle speed on access roads would be implemented to reduce mortality risk from vehicle collisions (Design Feature 39).

Indirect Effects

For a discussion of indirect effects on wildlife habitat that may occur due to weed introduction and modification of fire regimes, refer to Section 3.2.5. Fragmentation of wildlife habitat and edge effects caused by clearance of right-of-way vegetation alters microclimate, mammal assemblages, and biotic

interactions (e.g., predator-prey dynamics, parasitism, competition, and herbivory) (Willyard et al. 2004). Habitat fragmentation provides conditions favored by habitat generalists and species that readily adapt to anthropogenic disturbance. Increased rates of predation and parasitism are often correlated with changes in wildlife assemblages due to disturbance, while competition between mammal and avian predators can increase, which can increase pressure on prey populations and abundance (Willyard et al. 2004).

Alteration of wildlife movement and activity patterns could occur over the short- and long-term as a function of habitat disturbance. For example, generalist predators may alter movement by using habitat edges along the right-of-way to travel and hunt previously inaccessible prey sources, known as the funnel effect. In addition, an increase in perch availability could attract raptors to the transmission line rights-of-way (APLIC 2006), which could increase predation pressures on prey species (Knight and Kawashima 1993). Prior to reclamation efforts, prey species movement may be restricted by the right-of-way, as vegetation clearance can represent unsuitable habitat for species that need cover. However, crossing the right-of-way between suitable habitat patches is likely to be species-specific and subject to seasonal differences in animal-movement patterns, among other factors (Willyard et al. 2004).

Construction of new access roads could increase human access and recreational activities (Knick et al. 2003) and increase potential hunting or poaching pressure (Bromley 1985) over the long-term, which could affect wildlife. Impacts on wildlife as a result of increased recreational activities include displacement and avoidance of roads, changes in habitat use, and disturbance to breeding and wintering areas at critical periods (Gaines et al. 2003). Such impacts can reduce reproductive rates and adversely affect survival and fitness (Leung and Marion 2000).

Big Game

Direct Effects

Effects on big game (i.e., mule deer, elk, and pronghorn) could include temporary displacement from seasonal habitats that provide forage, cover, water, and space into less suitable habitats. Disruption to species behavioral patterns and an increase in physiological stress from construction noise and activity or routine inspections and maintenance activities also could occur. In addition, big game could experience changes to browse quality and quantity as a result of removal of native vegetation during Project construction.

Indirect Effects

Response to disturbed right-of-way sites differs between big game species. Activity of big game species in the right-of-way can be low compared to adjacent habitat, while the tendency for animals to cross a right-of-way can be a function of species response to disturbance (Sopuk and Vernam 1985) as well as right-of-way characteristics such as width (Willyard et al. 2004).

Large ungulates can be attracted to right-of-ways by increased forage potential (Willyard et al. 2004), potentially due to vegetation reclamation efforts. Travel patterns of wide-ranging carnivores also can be positively influenced by roads and trails (Paquet and Carbyn 2003). Therefore, rates of predation could increase as a result of behavioral response to Project features. Access roads may facilitate increased hunting and poaching pressures on big game (Gaines et al. 2003).

Increased development may further increase pressure on migration routes by narrowing the width of geographical bottlenecks. Intraspecies and interspecies transfer of disease and pathogens may occur indirectly as a result of alteration of movement patterns and proximity of individuals (Willyard et al. 2004).

Recreational disturbance resulting from an increase in access roads could affect wide-ranging carnivores and ungulates. Wildlife response to disturbance include avoidance of roads, trails, and human activity (Gaines et al. 2003), although response varies according to species and recreation type (MacArthur et al. 1982; Stankowich 2008). In addition, flight response to disturbance may differ according to sex. Female ungulates, particularly those with young, show greater flight distance response, and hunted populations showed significantly greater flight responses than nonhunted populations (Stankowich 2008).

Reptiles

Direct Effects

Degradation and fragmentation of suitable habitats through removal of native vegetative cover could occur during Project construction. Microclimates in larger habitat types (burrows, vegetative cover, and rock crevices) used by reptile species could be removed or disturbed during Project construction. Mortality rates are likely to be a function of a species' life history and physiological traits and could increase during project construction and maintenance, either directly through being crushed or through compaction of burrows and vegetative cover.

Indirect Effects

Indirect effects of Project construction and maintenance include alteration of native vegetation and potential introduction and spread of weeds, which can affect the effectiveness of a given habitat in providing cover from avian and terrestrial predators. Alteration of plant assemblages may affect open intershrub space, which reptiles use for movement and refuge (Newbold 2005; Stebbins 2003; Vitt and Pianka 1994).

Predation of reptile species by raptors could increase due to use of transmission structures as perches in habitats with otherwise limited perching opportunities for raptors. These impacts may cause degradation and abandonment of wildlife habitat and alteration of predator-prey relationships in the Project area.

Mitigation Planning and Effectiveness

In addition to the design features of the Proposed Action for environmental protection, selective mitigation measures would be applied where feasible to reduce potential high and moderate adverse impacts on biological resources. Once an alternative route is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. As described in Appendix J, the BLM would require the Applicant to monitor the implementation and effectiveness of conservation measures (i.e., design features of the Proposed action for environmental protection; selective mitigation measures; and other measures implemented to avoid, minimize, and mitigate for resource impacts) and would implement adaptive management for biological resources, as needed. Detailed monitoring requirements would be outlined in a biological resource monitoring plan, which would be developed with the BLM and cooperating agencies and included in the POD. This plan also will include monitoring requirements for federally listed wildlife species that are identified through the Section 7 consultation process.

Design features of the Proposed Action effective in reducing impacts on wildlife resources include Design Features 4, 6, 7, 8, 26, 27, 28, 30, and 39. In addition to listed design features, the BLM or the appropriate land-management agency would implement resource avoidance measures as needed to meet resource-management objectives if sensitive resources are located near a geotechnical boring location as described in Section 2.4.2.2. Resource-avoidance measures for the geotechnical investigation would include (1) monitor geotechnical investigation activities, (2) adjust activities to occur outside of seasonal restrictions,

(3) use alternative access or drilling methods, (4) relocate the borehole, and (5) abandon the geotechnical site. Selective mitigation measures also could be applied to reduce potential effects on wildlife resources.

- **Design Feature 4 (avian-safe design standards)**. All new or rebuilt transmission facilities are constructed to avian-safe design standards (i.e., *Suggested Practices for Avian Protection on Power Lines; The State of the Art in 2006* [APLIC 2006]; *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* [APLIC 2012]; PacifiCorp's Avian Protection Plan, updated June 2011 [PacifiCorp 2011]). This design feature would limit the potential for avian wildlife collision and reduce the potential for avian injury and mortality. Mortality from electrocution is unlikely as the distance between conductors and the distance between energized conductors and grounded equipment is built to APLIC standards for high-voltage transmission lines (500kV and 345kV) and is greater than the wingspan of all avian species likely to occur in the Project area.
- **Design Feature 6 (seasonal restrictions for nesting migratory birds).** Construction and maintenance activities would avoid areas supporting actively nesting birds during the migratory bird nesting season, when possible, between February 1 and August 31; however, dates may vary depending on species, current environmental conditions, results of preconstruction surveys, and approval by agency biologists or agency-approved environmental inspectors. This design feature will restrict human activity to avoid disturbing migratory bird nests during species specific breeding seasons.
- **Design Feature 7 (breeding bird and nest surveys)**. In the event that vegetation clearing and other construction and maintenance activities do not avoid the nesting season for migratory birds (between February 1 and August 31), surveys for active migratory bird nests would be performed and a spatial nest buffer would be placed around each active nest until such time as the status of the nest is determined through monitoring to be no longer occupied. Based on the best available scientific information, appropriate spatial nest buffers (by species or guild), nest monitoring requirements would be identified through coordination with the FWS and other appropriate agencies and would be provided in a nest management plan in the POD. This design feature would minimize construction-related disturbance by avoiding nest locations of migratory birds during the nesting season by determining active nest locations within 7 days of ground-disturbing activities and avoiding these areas.
- **Design Feature 8 (raptor protection restrictions).** FWS and BLM guidelines for raptor protection during the breeding season (Appendix J, Tables J-13 through J-15) would be followed, including seasonal and spatial buffers around active nests, eagle roosts, and winter concentration areas. This design feature will limit Project-related spatial and temporal disturbance to raptors during sensitive life-cycle periods to avoid human disturbance and increased noise levels in the vicinity of active nest sites and limit the potential for nest abandonment or a decrease in nest success. Exceptions to temporal and spatial buffer restrictions during construction could be granted if determined to be appropriate by a qualified biologist and approved by the Authorized Officer or cooperating agencies. The BLM may require additional mitigation if exceptions are granted.
- **Design Feature 26 (vehicle access restriction)**. All construction vehicle movement would be restricted to predesignated access roads. Exceptions would be granted for use of existing roads (e.g., interstate and state highways, well-maintained county roads), where construction traffic would be consistent with existing use and traffic volumes on roadways. This design feature would minimize disturbance to wildlife habitat and populations by limiting vehicular access and minimize the risk of noxious weed introduction as well as the potential for subsequent changes to natural wildfire regimes resulting from alterations in plant community composition that can increase the frequency and intensity of fire.

- **Design Feature 27 (construction activity access restriction)**. All construction vehicle movement would be contained in a predetermined area. This design feature would minimize disturbance to wildlife and their habitat from construction activities and minimize the risk of noxious weed introduction and the potential for subsequent changes to natural wildfire regimes resulting from alterations in plant community composition that can increase the frequency and intensity of fire.
- **Design Feature 28 (personnel instruction).** All Project personnel would be instructed in the importance, purpose, necessity, and Project-specific requirements for protection of natural resources, highlighting the importance of special status wildlife resources, federal and state laws and regulations that protect them, and the appropriate protection measures for them. Instructions also would be given for reporting and stop work procedures in the event of a resource conflict. This would minimize impacts on special status wildlife habitat and populations throughout the Project corridor; especially in occupied habitat for sensitive wildlife species that may not have been identified prior to the start of construction.
- **Design Feature 30 (hazardous materials restrictions)**. Hazardous materials would be contained and removed to a disposal facility and not drained into the ground, streams, or drainages. This design feature would minimize degradation of wildlife species habitat due to Project activities by limiting the risk of the potential contaminants introduced into the environment that could adversely affect wildlife habitat.
- **Design Feature 39 (speed limit restrictions)**. All construction vehicle movement would be restricted to a speed limit of 15 mph on overland access routes. This design feature would minimize wildlife mortality due to vehicle collisions by increasing reaction time of both driver and wildlife before collision occurs. Restricting vehicle speed would give drivers a better opportunity to avoid wildlife on access routes and would increase opportunities for wildlife to avoid approaching vehicles.

In addition, Selective Mitigation Measures 1, 2, 4, 5, 7, 11, 12, 13, 14, and 15 could be implemented to reduce potential high adverse impacts on wildlife species including MIS. The effectiveness of these selective mitigation resources is described in this section.

- **Selective Mitigation Measure 1 (minimization of disturbance to sensitive soils and vegetation)**. Existing trails and roads would not be widened or upgraded in sensitive areas, unless widening or upgrading the existing trails and roads would result in fewer impacts on sensitive areas than would result from building new access roads. Avoiding access road upgrades would limit the amount of habitat disturbed or removed. Avoidance of road upgrades limits vehicular traffic increases by the general public after construction and reduces the potential for indirect effects such as damage or loss of vegetation, spread of noxious weeds, and harassment of wildlife.
- **Selective Mitigation Measure 2 (avoidance of sensitive resources)**. No blading of new access roads would occur in sensitive resource areas (e.g., wildlife habitats and populations). Existing roads would be used in these areas to the extent feasible. This mitigation measure would minimize habitat loss, degradation, and fragmentation and reduce the risk of habitat fragmentation and consequence isolation of subpopulations, which could affect adversely the dispersal rates, diversity, and abundance of wildlife species.
- **Selective Mitigation Measure 4 (minimization of tree clearing).** Trees and other vegetation would be removed selectively (e.g., edge feathering), and trees more than 5 feet tall would be removed selectively in riparian and tree nesting habitats. By minimizing the number of trees cleared in sensitive habitats, this mitigation measure would reduce impacts on timber resources, limit wildlife habitat fragmentation and protect raptor nesting habitats to the extent feasible.

- **Selective Mitigation Measure 5 (minimization of new or improved Project accessibility)**. All new or improved access roads not required for maintenance would be closed or rehabilitated following Project construction in accordance with prior agency approval and using the most effective and least environmentally damaging methods. This mitigation measure would restore natural contours, vegetation, and potential habitat and limit public access and anthropogenic disturbance to wildlife populations.
- **Selective Mitigation Measure 7 (spanning or avoiding of sensitive features)**. Project structures would be located to allow conductors to span or avoid identified sensitive features such as wildlife populations and habitat. This mitigation measure would avoid sensitive habitats such as riparian areas used as seasonal habitat and movement corridors, thereby reducing potential loss, degradation, and fragmentation of wildlife habitat in the Project area and reducing the risk of isolation between habitat areas and subpopulations, which could adversely affect dispersal rates, diversity, and abundance in wildlife species.
- **Selective Mitigation Measure 11 (minimization of right-of-way-clearing)**. In select areas, the right-of-way width may be modified to protect wildlife. This mitigation measure would limit the amount of vegetation cleared from the right-of-way and minimize abruptness in changes in vegetation community composition between the right-of-way and adjacent habitat, which may minimize degradation of habitat quality and reduce impacts on foraging and breeding behavior, and movement potential of wildlife species.
- **Selective Mitigation Measure 12 (seasonal and spatial wildlife restrictions)**. Construction and maintenance activities would be restricted in designated areas and during critical periods (e.g., wintering habitats and specific breeding or nesting seasons) (Appendix J, Tables J-13 through J-15). This selective mitigation measure would minimize disturbance to wildlife by limiting human activity, noise, and disturbance during sensitive life-cycle periods and reduce the risk of negative impacts on breeding success and species survival rates.
- **Selective Mitigation Measure 13 (overland access)**. Overland access using drive-and-crush (alteration of vegetation) and/or clear-and-cut travel (removal of aboveground vegetation without damaging the root stock) would occur in areas where no grading is needed to access work areas. This mitigation measure would reduce removal of surface soil and vegetation, potential for erosion and loss of habitat, and public access and associated indirect effects.
- **Selective Mitigation Measure 14 (flight diverters and perch deterrents)**. Shield wires, guy wires, and OPGW along portions of the transmission line that have a high potential for avian collisions would be marked with flight diverters or other devices approved by FWS, BLM, or USFS in accordance with agency requirements and in compliance with recommendations made in the APLIC report, *Reducing Avian collisions with Power Lines: State of the Art in 2012* (APLIC 2012). Segments of the transmission line that cross through, or are adjacent to, waterfowl and general migratory pathways or sensitive habitat for avian species may be marked to reduce the risk of avian collisions. The additional marking/placement of flight diverters or other agency-approved devices along specific segments would be determined through consultation with the appropriate agencies. This measure also may include use of devices to deter raptors from perching on transmission line structures. In addition to protections from Design Feature 4 (APLIC avian safe standards for high-voltage transmission lines), this feature would minimize risk of avian injury and mortality due to collision with Project features that cross sensitive avian habitats and reduce the increased risk of potential predation rates on sensitive species in the Project area.
- **Selective Mitigation Measure 15 (limitation of access to sensitive habitats)**. Where feasible, access roads that cross sensitive habitats (e.g., wildlife management areas [WMA] and crucial, severe or critical winter range) would be gated or otherwise blocked to limit public access. After

construction, this mitigation measure would limit human activity and disturbance to wildlife and their habitats during critical life-cycle periods.

Effects Analysis

Methods for Analysis to Support Interdisciplinary Comparison of Alternative Routes

Data needed to conduct a quantitative comparison of alternative routes were not available for all wildlife resources. A quantitative comparison of alternative routes was documented for issues identified during scoping for which habitat or population data were available to support the comparison.

Detailed analysis of the level of impacts of the Project on elk, mule deer, pronghorn, moose, and bighorn sheep populations was performed using designated crucial range and migration corridors, as the availability of crucial range is considered a limiting factor for big game species. Potential impacts on big-game habitat were analyzed by determining the number of miles of crucial habitat crossed by each alternative route in Wyoming, Colorado, and Utah. Data used to analyze impacts on elk populations were designated calving grounds; summer concentration areas; crucial spring/fall, summer, winter, and year-long severe winter range; and migration corridors. Impacts on mule deer populations were analyzed using summer concentration areas; crucial spring/fall, summer, winter, winter/spring and year-long, critical winter range; and migration corridors. Impacts on pronghorn populations were analyzed using fawning habitat, severe winter range, crucial year-long habitats, and migration corridors. Impacts on moose were analyzed using calving grounds and crucial spring/fall, winter, and year-long habitat. Potential impacts on Rocky Mountain and desert bighorn sheep were analyzed using crucial year-long habitat.

Criteria for Assessing Level of Impacts

Criteria were developed in collaboration with the Agency Interdisciplinary Team to assess the level of a potential effect on wildlife resources associated with implementation of the Project (Table 3-79) and to compare the impacts between alternative routes. Impact criteria were based on considerations of a species status, regulatory protection, and susceptibility to temporary or permanent disturbances.

TABLE 3-79
CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON WILDLIFE

Level of Impacts	Description
High	▪ Permanent disruption of seasonal wildlife migration patterns ▪ Ongoing mortality of wildlife due to direct interaction with the Project that may result in population-level effects ▪ Impacts on fawning areas during sensitive seasons ▪ Long-term disruption or displacement of wildlife from crucial, critical, or severe habitats during sensitive periods resulting from noise and human presence (e.g., continuous construction activities)
Moderate	▪ Temporary disturbance or creation of temporary barriers to movement in wildlife migration corridors ▪ Incidental mortality of wildlife due to direct interaction with the Project that does not result in population-level effects ▪ Temporary, short-term disturbance or displacement of wildlife from crucial, critical, or severe habitats during sensitive periods resulting from minor or brief periods of noise and human presence (e.g., minor use of access roads with passenger vehicles, survey and staking operations)

TABLE 3-79 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON WILDLIFE	
Level of Impacts	**Description**
Low	▪ Disturbance in migration corridors that does not create a physical barrier and occurs outside sensitive periods ▪ Loss or disturbance of crucial, critical, or severe wildlife habitats that occurs outside sensitive periods
Nonidentifiable	▪ Locations where no effects on wildlife are identifiable due to the absence of sensitive habitats selected for analysis

Initial Impacts

The level of a potential effect on a wildlife resource (i.e., a particular species or habitat type) that could result from implementation of the Project is used as the basis for assessing initial impacts. Design features of the Proposed Action for environmental projection (Table 2-8) would reduce impacts on wildlife resources and were considered when assessing potential impacts on specific resources. Based on the level of a potential effect on a wildlife resource, initial impacts were assigned (Table 3-80) using the criteria presented in Table 3-79.

TABLE 3-80
SUMMARY OF INITIAL AND RESIDUAL IMPACTS BY HABITAT TYPE

Common Name	Habitat Type	Relevant Design Feature (location-specific)	Initial Impact	Selective Mitigation Measure Applied (location specific)	Residual Impact
Mammals – Big Game					
Bighorn sheep	Crucial seasonal habitat	26, 27, 28, 30, 39	Moderate	12, 15	Low
	Lambing areas	26, 27, 28, 30, 39	High	12, 15	Low
Elk	Crucial/severe seasonal habitat	26, 27, 28, 30, 39	Moderate	12, 15	Low
	Calving grounds	26, 27, 28, 30, 39	High	12, 15	Low
	Migration corridors	26, 27, 28, 30, 39	Moderate	12, 15	Low
Mule deer	Crucial/critical seasonal habitat	26, 27, 28, 30, 39	Moderate	12, 15	Low
	Fawning areas	26, 27, 28, 30, 39	High	12, 15	Low
	Migration corridors	26, 27, 28, 30, 39	Moderate	12, 15	Low
Moose	Crucial/severe seasonal habitat	26, 27, 28, 30, 39	Moderate	12, 15	Low
	Calving grounds	26, 27, 28, 30, 39	High	12, 15	Low
Pronghorn	Crucial/severe seasonal habitat	26, 27, 28, 30, 39	Moderate	12, 15	Low
	Fawning areas	26, 27, 28, 30, 39	High	12, 15	Low
	Migration corridors	26, 27, 28, 30, 39	Moderate	12, 15	Low

Residual Impacts

Initial impacts on wildlife resources are determined as a result of implementing seasonal wildlife restrictions on construction and maintenance activities in the Project area. The BLM and other agencies may grant exceptions to seasonal wildlife restrictions, but only if an exception could be granted without

causing the impact the seasonal restriction was designed to avoid or minimize (e.g., warm spring resulting in early migration of big game off of the winter range). The BLM will develop a standardized method for evaluating requests for exceptions to seasonal restrictions, including requirements for resource data collection and monitoring of activities in exception areas that would be included in the POD. Selective mitigation measures are applied to reduce the level of initial impacts associated with Project construction and maintenance. Residual impacts are anticipated impacts on resources after the application of selective mitigation measures described in the Mitigation Planning and Effectiveness section. The level of potential residual impacts on wildlife resources associated with implementation of the Project was assessed using the criteria presented in Table 3-79. A summary of anticipated initial and residual impacts on wildlife resources, as well as the selective mitigation measures applied, are presented in Table 3-80.

Methods for Additional Analysis of Potential Impacts

In addition to the analysis conducted to allow interdisciplinary comparison of alternative routes, additional analyses were required to adequately address some issues raised by the public and the agencies during scoping regarding potential impacts on wildlife resources or to meet the requirements of relevant law, regulation, or policy.

For additional analysis of potential impacts on big game, all overlapping nonlimiting seasonal habitat not used to analyze the level of Project impacts on crucial big-game habitat in Wyoming, Colorado, and Utah was combined in to a single data layer for analysis of impacts on big game and analyzed as big game nonlimiting range. The number of miles crossed and extent of the disturbance of nonlimiting habitat due to the construction, operation, and maintenance of the Project was estimated to provide an additional measure of the extent of disturbance to designated big-game habitat. In addition, the extent of loss of crucial, critical, and severe habitat (in acres) due to construction, operation, and maintenance of the Project was estimated to present a more spatially explicit measure of impacts on wildlife resources. The total extent of disturbance (in acres) due to construction of features such as roads, transmission line towers, and other Project facilities was estimated over the entire length of an alternative route using the access model developed for the Project and the Applicant's Project description (refer to Section 2.7.1.2). Disturbance associated with construction of the Project was assumed to occur at a constant density per mile and was calculated for each alternative route based on the total estimated disturbance and total length of each alternative route. The estimated density of disturbance (in acres per mile) for each alternative route was used to calculate the extent of effects on wildlife habitat (in acres) that could occur for each length of habitat crossed.

As the estimated density of disturbance per mile varies by alternative route, alternative routes that cross the same length of wildlife habitat may vary in estimated area of disturbance (in acres) to the habitat.

3.2.7.5 Results

Under all action alternatives, disturbance to wildlife habitat through temporary and permanent loss of vegetation and changes in plant assemblages would occur in the Project area. Wildlife habitats affected by the Project include riparian, arid and semi-arid desert shrub, grasslands, sagebrush, sagebrush steppe, pinyon-juniper, mountain shrub, mixed conifer, aspen, alpine, and montane communities (Section 3.2.5.4). Impacts on these habitats could adversely affect wildlife species.

Impacts on upland game birds would be anticipated for all alternative routes and representative species are discussed in Section 3.2.7.4. Adverse impacts on foraging and nesting habitat could result from vegetation removal, road and tower construction, as well as either temporary or permanent displacement of individuals.

Mortality of upland game birds could occur directly due to collisions with the transmission line or towers, although the probability is likely to be a function of bird morphology, behavior and species (APLIC 2012; Janss 2000). Mortality also could occur through electrocution. Electrocution risk would be minimized through avian-safe transmission line design that separates energized and grounded structures (APLIC 2006). Mortality could occur indirectly as a result of increased predation pressure by predators attracted to the transmission line, or through nest abandonment resulting from increased human disturbance, which potentially could reduce fitness, survival, and reproductive performance of some individuals (Riffell et al. 1996). Detailed analysis of potential impacts on specific habitat types that are likely to be used by upland game birds is included in Section 3.2.5.

A wide range of mammal and reptile species could be affected by Project alternative routes. Representative species are discussed in Section 3.2.7.4. Impacts specific to big game species are described under each alternative route. Limited data are available to determine presence and relative abundance of the majority of mammal and reptile species in the Project area or to quantify many of the effects identified in Section 3.2.7.4.2. Adverse impacts on mammals and reptiles could occur and potentially could be greater for sagebrush obligates, species with limited range, species with low levels of mobility, or species that depend on microclimates for survival. Impacts on mammal and reptile species could include temporary or permanent displacement of individuals from occupied habitat and increased mortality risk through collisions with Project construction equipment. Risk of mortality or injury is likely to be a function of species morphology and behavior. Impacts on mammal and reptile foraging and breeding habitat could result from vegetation removal, loss, alteration, isolation, or fragmentation of habitat due to road and tower construction. Detailed analysis of potential impacts on habitat types that are likely to be used by mammal and reptile species is included in Section 3.2.5.

3.2.7.5.1 Impacts Common to All Action Alternatives

There are no impacts common to all action alternatives.

3.2.7.5.2 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.7.5.3 345-kilovolt Ancillary Transmission Components

The 345kV ancillary transmission line components would be located in an area between the Mona and Clover substations west of the town of Mona, Utah. Most of the 345kV ancillary transmission line components would be in an existing right-of-way. The components cross the eastern edge of a large area of mule deer crucial winter/spring range that extends east to U.S. Highway 6 and north to Santaquin.

3.2.7.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The WYCO alternative routes cross the southern reaches of the Wyoming Basin and northern Colorado Plateau ecoregions, crossing Sweetwater and Carbon counties in Wyoming and Moffat and Routt counties in Colorado. The climate is classified as cold deserts with warm to hot summers with low humidity to cool to cold dry winters. Habitat in this portion of the Project area is dominated by arid shrub/shrub-steppe and big sagebrush and includes pinyon-juniper and grasslands east of Dinosaur National Monument and aspen and mountain shrub communities west of the Routt National Forest in Colorado. Developed areas include the cities of Hanna, Rawlins, and Sinclair in Wyoming and Craig in Colorado.

From the Aeolus substation, all alternative routes cross the Medicine Bow River. Alternatives WYCO-B, WYCO-C, and WYCO-F run west of Hanna, and Alternative WYCO-D runs east of Hanna parallel with

an existing transmission line and in proximity to wind turbines. All alternative routes converge 2 miles southwest of Walcott and follow existing disturbance toward Wamsutter. Existing disturbances include the Hanna rail system, Southern Star Central gas pipeline, and I-80. From Wamsutter, all alternative routes head south through shrub/shrub-steppe and sagebrush habitats to the Wyoming/Colorado border near the Little Snake River.

Alternative WYCO-C follows an existing pipeline corridor through a large area of existing oil and gas development. Alternatives WYCO-B and WYCO-F cross shrub/shrub-steppe and sagebrush habitats and existing roads and energy development west and east of Flat Top Mountain respectively. Alternative WYCO-D follows Wyoming Highway 789 to Baggs, Wyoming, crossing existing oil and gas and development areas and riparian habitat at Baggs associated with the Little Snake River. South of the Wyoming/Colorado border, Alternative WYCO-D heads south to Craig, crossing the Yampa River before turning west, following U.S. Highway 40 and an existing transmission line toward Massadona through sagebrush, grassland, and pinyon-juniper habitats. South of the Wyoming/Colorado border, Alternatives WYCO-B, WYCO-C, and WYCO-F run north of the Little Snake River, and then turn south, west of Maybell along the Sevenmile Ridge, crossing shrub/shrub-steppe, sagebrush, and pinyon-juniper habitats relatively undisturbed by roads and energy development. All alternative routes then converge approximately 3 miles north of Wapiti Peak and gain elevation across Elk Springs Ridge before following U.S. Highway 40 southwest toward Massadona. All WYCO alternative routes cross designated big-game habitat for elk, mule deer, and pronghorn (MV-8a and MV-9a).

The majority of big game nonlimiting range in Wyoming is located between Walcott and Saratoga and extends east on the Medicine Bow National Forest and between Cherokee and Baggs, east of Wyoming Highway 789. Extensive elk habitat occurs in the Project area. In Wyoming, elk crucial winter range is located northwest of Elk Mountain. Crucial winter/year-long habitats occur west of Elk Mountain, between Rawlins and Dixon, west of Baggs. Elk winter habitat areas are located between Hanna and Saratoga and between Rawlins and Baggs. Winter/year-long habitat is located between the Aeolus substation site and Elk Mountain and between Rawlins and Dixon. An area of spring/summer/fall habitat occurs south of Rawlins. Elk migration corridors occur between Rawlins and the Medicine Bow National Forest, just north of the Wyoming/Colorado border. In Colorado, elk nonlimiting range occurs throughout the state with the largest contiguous areas in Moffat and Routt counties to the west of Routt National Forest. Extensive elk severe winter range is located along the Wyoming/Colorado state line between Craig and Maybell, the vicinity of Meeker, and between Maybell and Dinosaur. Summer concentration areas are located between the Wyoming/Utah border and Maybell, and southeast of Craig. Elk calving grounds are located north and west of Maybell. Elk migration corridors occur between the Wyoming/Utah border and Craig and Maybell and between Craig and Meeker (MV-8a).

In Wyoming, mule deer nonlimiting range is located between I-80 and the Wyoming/Colorado state line, and east and west of Medicine Bow National Forest at elevations below 7,000 feet. Mule deer crucial winter/year-long habitat is located near the proposed Aeolus substation between Hanna and Rawlins, the Wyoming Highway 789 corridor north of Baggs, north of Dixon, and along the Wyoming/Colorado state line. Spring/summer/fall habitat is located between south of Rawlins to the Wyoming/Colorado state line and south of Rock Springs to the Wyoming/Colorado/Utah state line. Mule deer year-long habitat is located in the vicinity of Hanna. Mule deer migration corridors occur throughout the Project area in Wyoming. In Colorado, mule deer nonlimiting range occurs throughout the state with the largest contiguous areas located between Craig and Dinosaur National Monument. Mule deer critical winter range stretches from the Wyoming/Colorado state line along the major river valleys of the Little Snake in Moffat County. Mule deer migration corridors occur between Craig and Meeker (MV-9a).

In Wyoming, pronghorn nonlimiting range occurs throughout the state, south of the Sweetwater and North Platte rivers. Pronghorn crucial winter/year-long habitat is located near the proposed Aeolus

substation, north of Saratoga, along the I-80 corridor between Rawlins and Wamsutter, along the Wyoming Highway 789 corridor north of Baggs and the Wyoming/Colorado state line. Spring/summer/fall habitat is located south of Hanna and Rawlins. Pronghorn migration corridors are located between Rawlins and Baggs and west to Wyoming Highway 430. In Colorado, pronghorn nonlimiting range is located throughout Moffat County, between the Wyoming/Colorado state line and the Yampa River. Pronghorn severe winter range is located along the Wyoming/Colorado state line south of Baggs, west of Craig, and in the vicinity of Maybell. Pronghorn migration corridors occur between Baggs and Maybell (MV-9a).

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Alternative WYCO-B crosses an area of oil and gas development and follows existing access roads. Dominant wildlife habitats crossed by Alternative WYCO-B are big sagebrush and shrub/shrub steppe with smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, pinyon-juniper, and riparian habitats (Section 3.2.5.4).

Mammals

Big Game

The extent of big game nonlimiting range and crucial habitat crossed by each WYCO alternative route is displayed in Tables 3-81 and 3-82.

TABLE 3-81
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME NONLIMITING RANGE INVENTORY FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Big Game Nonlimiting Range[2] (miles crossed)				
		Elk	Mule Deer	Pronghorn	Moose	Rocky Mountain Bighorn Sheep
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	46.2	139.1	164.6	5.7	0.0
Wyoming	*141.0*	*2.9*	*116.4*	*108.5*	*5.7*	*0.0*
Colorado	*65.3*	*43.3*	*22.7*	*56.1*	*0.0*	*0.0*
WYCO-C	210.0	48.6	144.8	171.2	5.7	0.0
Wyoming	*144.7*	*5.3*	*122.1*	*115.1*	*5.7*	*0.0*
Colorado	*65.3*	*43.3*	*22.7*	*56.1*	*0.0*	*0.0*
WYCO-D	249.4	121.1	143.0	179.3	10.6	0.0
Wyoming	*134.9*	*29.0*	*87.9*	*89.9*	*10.6*	*0.0*
Colorado	*114.5*	*92.2*	*55.1*	*89.4*	*0.0*	*0.0*
WYCO-F	218.8	46.2	142.4	169.7	5.7	0.0
Wyoming	*153.5*	*2.9*	*119.7*	*113.6*	*5.7*	*0.0*
Colorado	*65.3*	*43.3*	*22.7*	*56.1*	*0.0*	*0.0*

NOTES:
[1]Each of the big game species will not add to the total miles column due to the overlapping habitats.
[2]Includes all designated habitat in Wyoming and Colorado except habitat in Table 3-82.

Alternative WYCO-B in Wyoming crosses elk nonlimiting range in the vicinity of Walcott and near the Wyoming/Colorado state line. The alternative route crosses elk crucial year-long habitat and migration corridors along the Wyoming/Colorado state line along the Little Snake River and elk migration corridors approximately 15 miles west of Rawlins in the I-80 corridor. The alternative route does not cross elk calving grounds, crucial summer concentration areas, or severe winter range.

TABLE 3-82
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT INVENTORY FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Big Game Crucial Habitat (miles crossed)																
		Elk					Mule Deer				Pronghorn				Moose			Rocky Mountain Bighorn Sheep
		Calving Grounds	Crucial Summer/ Summer Concentration	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors	Crucial Summer/ Summer Concentration	Crucial/Critical Winter Range	Crucial Year-long	Migration Corridors	Fawning Areas	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors	Calving Grounds	Severe Winter Range	Crucial Year-long	Crucial Year-long
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	10.3	10.3	26.7	2.9	2.7	0.0	24.3	24.5	4.2	0.0	16.2	32.5	9.3	0.0	0.0	0.0	0.0
Wyoming	*141.0*	*0.0*	*0;0*	*0;0*	*2.9*	*2.7*	*0.0*	*0.0*	*24.5*	*4.2*	*0.0*	*0.0*	*32.5*	*9.3*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*10.3*	*10.3*	*26.7*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*0.0*	*16.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-C	210.0	10.3	10.3	26.7	2.9	2.7	0.0	24.3	22.5	4.2	0.0	16.2	29.6	7.5	0.0	0.0	0.0	0.0
Wyoming	*144.7*	*0.0*	*0.0*	*0.0*	*2.9*	*2.7*	*0.0*	*0.0*	*22.5*	*4.2*	*0.0*	*0.0*	*29.6*	*7.5*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*10.3*	*10.3*	*26.7*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*0.0*	*16.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-D	249.4	0.0	0.0	96.4	0.0	35.3	0.0	56.7	47.0	11.3	0.0	42.5	45.2	5.7	0.0	0.0	0.0	0.0
Wyoming	*134.9*	*0.0*	*0.0*	*0;0*	*0.0*	*1.6*	*0.0*	*0.0*	*47.0*	*10.8*	*0.0*	*0.0*	*45.2*	*5.7*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*114.5*	*0.0*	*0.0*	*96.4*	*0.0*	*33.7*	*0.0*	*56.7*	*0.0*	*0.5*	*0.0*	*42.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-F	218.8	10.3	10.3	26.7	2.9	2.7	0.0	24.3	33.7	13.9	0.0	16.2	39.9	11.3	0.0	0.0	0.0	0.0
Wyoming	*153.5*	*0.0*	*0.0*	*0.0*	*2.9*	*2.7*	*0.0*	*0.0*	*33.7*	*13.9*	*0.0*	*0.0*	*39.9*	*11.3*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*10.3*	*10.3*	*26.7*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*0.0*	*16.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*

NOTE: [1]Each of the big game species will not add to the total miles column due to overlapping habitats.

Alternative WYCO-B in Wyoming crosses mule deer nonlimiting range at the proposed Aeolus substation and from Rawlins to the Wyoming/Colorado state line. The alternative route crosses mule deer crucial year-long habitat at the proposed Aeolus substation, between Hanna and Rawlins at Fort Steele Breaks, in the vicinity of Hanna, and along the Wyoming/Colorado state line along the Little Snake River. This alternative route crosses mule deer migration corridors approximately 15 miles west of Rawlins in the I-80 corridor and west of Flat Top Mountain (MV-9a). The alternative route does not cross mule deer summer concentration areas or crucial winter range.

Alternative WYCO-B in Wyoming crosses extensive pronghorn nonlimiting range along the entire length of the route. The alternative route crosses pronghorn crucial year-long habitat at the proposed Aeolus substation, along the I-80 corridor between Rawlins and Wamsutter and at the Wyoming/Colorado state line along the Little Snake River. This alternative route crosses pronghorn migration corridors east of Rawlins at Fort Steele Breaks, 15 miles west of Rawlins in the I-80 corridor and west of Flat Top Mountain (MV-9a). The alternative route does not cross pronghorn fawning areas or severe winter range.

Alternative WYCO-B in Wyoming crosses moose nonlimiting range but does not cross moose crucial habitat. No Rocky Mountain bighorn sheep nonlimiting range or crucial habitat is crossed.

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on wildlife that could occur under all alternative routes and the degree to which these effects would be mitigated or avoided are described in detail earlier in this section. Estimated residual impacts on big game (i.e., elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep) after the application of selective mitigation measures are presented in Table 3-83.

TABLE 3-83
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME SPECIES RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Big Game Crucial Habitat[1] (miles crossed)			
		Nonidentifiable	Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	104.9	101.4	0.0	0.0
Wyoming	*141.0*	*88.2*	*52.8*	*0.0*	*0.0*
Colorado	*65.3*	*16.7*	*48.6*	*0.0*	*0.0*
WYCO-C	210.0	113.1	96.9	0.0	0.0
Wyoming	*144.7*	*96.4*	*48.3*	*0.0*	*0.0*
Colorado	*65.3*	*16.7*	*48.6*	*0.0*	*0.0*
WYCO-D	249.4	73.9	175.5	0.0	0.0
Wyoming	*134.9*	*63.6*	*71.3*	*0.0*	*0.0*
Colorado	*114.5*	*10.3*	*104.2*	*0.0*	*0.0*
WYCO-F	218.8	97.0	121.8	0.0	0.0.
Wyoming	*153.5*	*80.3*	*73.2*	*0.0*	*0.0*
Colorado	*65.3*	*16.7*	*48.6*	*0.0*	*0.0*

NOTES: [1]Includes impacts on elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep crucial, critical, and severe habitats.

Mammals

Big Game

Based on the impact assessment criteria used in this analysis (Table 3-79), Alternative WYCO-B in Wyoming would have low residual impacts on elk, mule deer, pronghorn, and moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-83). Initial impacts on wildlife resources are determined as a result of implementing seasonal wildlife restrictions on construction and maintenance activities in the Project area. The BLM and other agencies may grant exceptions to seasonal wildlife restrictions. However, any exceptions would increase the initial level of impacts on wildlife resources and potentially result in greater residual impacts.

Alternative WYCO-B would have comparable impacts on Alternative WYCO-C. Alternatives WYCO-B and WYCO-C would have less impact to big game crucial, critical, or severe habitat in Wyoming than Alternatives WYCO-D and WYCO-F.

Results of Additional Analysis of Potential Impacts

The estimated amount of disturbance (in acres) to elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep nonlimiting range and crucial habitat by the WYCO alternative routes in Wyoming and Colorado are presented in Tables 3-84 and 3-85.

TABLE 3-84
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME NONLIMITING RANGE ACRES OF DISTURBANCE FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Elk	Mule Deer	Pronghorn	Moose	Rocky Mountain Bighorn Sheep
WYCO-B (Agency and Applicant Preferred Alternative)	729	2,195	2,597	90	0
Wyoming	*46*	*1,837*	*1,712*	*90*	*0*
Colorado	*683*	*358*	*885*	*0*	*0*
WYCO-C	766	2,282	2,698	90	0
Wyoming	*84*	*1,924*	*1,814*	*90*	*0*
Colorado	*682*	*358*	*884*	*0*	*0*
WYCO-D	1,886	2,226	2,791	165	0
Wyoming	*451*	*1,368*	*1,399*	*165*	*0*
Colorado	*1,435*	*858*	*1,392*	*0*	*0*
WYCO-F	726	2,235	2,664	90	0
Wyoming	*46*	*1,879*	*1,783*	*90*	*0*
Colorado	*680*	*356*	*881*	*0*	*0*

NOTES:
[1]Includes all designated habitat in Wyoming and Colorado except crucial habitat.
Acres in the table are rounded and, therefore, columns may not sum exactly.

TABLE 3-85
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT ACRES OF DISTURBANCE FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Big Game Crucial Habitat (acres)															
	Elk					Mule Deer				Pronghorn				Moose			Rocky Mountain Bighorn Sheep
	Calving Grounds	Crucial Summer/Summer Concentration	Crucial/Severe Winter Range	Crucial Year Long	Migration Corridors	Crucial Summer/Summer Concentration	Crucial/Critical Winter Range	Crucial Year Long	Migration Corridors	Fawning Areas	Crucial/Severe Winter Range	Crucial Year Long	Migration Corridors	Calving Grounds	Crucial Winter Range	Crucial Year Long	Crucial Year Long
WYCO-B (Agency and Applicant Preferred Alternative)	*163*	*163*	421	46	43	0	384	387	66	0	256	513	147	0	0	0	0
Wyoming	*0*	*0*	*0*	*46*	*43*	*0*	*0*	*387*	*66*	*0*	*0*	*513*	*147*	*0*	*0*	*0*	*0*
Colorado	*163*	*163*	*421*	*0*	*0*	*0*	*383*	*0*	*0*	*0*	*256*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-C	*162*	*162*	421	46	43	0	383	355	66	0	255	467	118	0	0	0	0
Wyoming	*0*	*0*	*0*	*46*	*43*	*0*	*0*	*355*	*66*	*0*	*0*	*467*	*118*	*0*	*0*	*0*	*0*
Colorado	*162*	*162*	*421*	*0*	*0*	*0*	*383*	*0*	*0*	*0*	*255*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-D	*0*	*0*	1,500	0	550	0	883	732	176	0	662	704	89	0	0	0	0
Wyoming	*0*	*0*	*0*	*0*	*25*	*0*	*0*	*732*	*168*	*0*	*0*	*704*	*89*	*0*	*0*	*0*	*0*
Colorado	*0*	*0*	*1,500*	*0*	*525*	*0*	*883*	*0*	*8*	*0*	*662*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-F	*162*	*162*	419	46	42	0	381	529	218	0	254	626	177	0	0	0	0
Wyoming	*0*	*0*	*0*	*46*	*42*	*0*	*0*	*529*	*218*	*0*	*0*	*626*	*177*	*0*	*0*	*0*	*0*
Colorado	*162*	*162*	*419*	*0*	*0*	*0*	*381*	*0*	*0*	*0*	*254*	*0*	*0*	*0*	*0*	*0*	*0*

NOTE: Acres in the table are rounded and, therefore, columns may not sum exactly.

The location of disturbance corresponds to sensitive habitat crossed by the alternative route and is discussed under Affected Environment for Alternative WYCO-B.

Relatively little elk crucial year-long habitat and no calving grounds would be disturbed by Alternative WYCO-B in Wyoming compared to available elk habitat. Thus, the alternative route is unlikely to adversely affect habitat availability or quality at a level that would influence the local elk population. Furthermore, elk migration corridors affected by Alternative WYCO-B are located in an area of existing disturbance, which suggests the local elk population is tolerant of, or has adapted to, some level of anthropogenic disturbance during migration. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that elk use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential increase in weeds and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence elk populations in the Project area.

The WYCO alternative routes cross mule deer sensitive habitat used by the Platte Valley herd (MD541), and the Baggs herd (MD247), which are important local wildlife resources. The MD541 population was estimated at 21,600 in 2009 to 2011, and the MD247 herd was estimated at 13,000 to 16,000 deer in 2011 (WGFD 2011c). Limiting factors to managed mule deer herds in Wyoming include disease and parasitic load, forage competition with elk, extreme long-term drought conditions, the quality and availability of severe winter range, and increased energy development (WGFD 2011c). Relatively small areas of mule deer habitat are disturbed compared to available mule deer habitat in Wyoming. However, mule deer tend to exhibit fidelity to seasonal home ranges and in their use of migration corridors, as the location and timing of seasonal movement patterns tends to be fairly consistent from year to year in many herds.

Increased energy development and infrastructure can reduce the effectiveness of mule deer migration corridors by restricting or disrupting animal movement during spring and fall migrations. The negative impacts of development can be greater in areas where migration corridors are either naturally or anthropogenically constricted (Sawyer et al. 2005). Migration corridors of the MD247 herd is constricted at two highway tunnel crossings in the vicinity of Baggs, Wyoming, which is subject to increased developmental pressure. However, mule deer often demonstrate the capacity to adapt to habitat alteration and anthropogenic disturbance (Mackie et al. 2003) and will continue to use established migration routes despite development pressure (Sawyer et al. 2005). Therefore, habitat use and migration routes could be affected by Alternative WYCO-B in Wyoming during Project construction and maintenance activities, but disruption is unlikely to be permanent given mule deer seasonal migration route and home range fidelity as well as their potential to tolerate anthropogenic disturbance.

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during sensitive periods and in sensitive habitats that include mule deer crucial winter range, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential increase in weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence mule deer populations in the Project area.

The WYCO alternative routes in Wyoming cross pronghorn crucial year-long habitat used by the Iron Springs herd (PR630) with a population estimated at approximately 10,000; the Baggs herd (PR438) with an estimated population of 8,100; and the Bitter Creek herd (PR414) with an average population of 7,531 in 2011 (WGFD 2011c). Pronghorn winter survival and recruitment are likely to be unaffected by Alternative WYCO-B in Wyoming because fawning areas and severe winter habitat are not affected. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that pronghorn use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential increase in weeds, and a potential increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence local pronghorn populations in the Project area. Furthermore, limitations on pronghorn movement by Alternative WYCO-B in Wyoming are likely to be temporary. Pronghorn migration routes often circumvent geographical barriers and bottlenecks (Baker 1978; Sawyer et al. 2005). Migration corridors affected by the alternative route are located in the I-80 corridor, which suggests the local pronghorn populations have previously accommodated concentrated and intense anthropogenic disturbance.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado crosses mainly undisturbed habitat and a small area of agricultural land adjacent to the Yampa River. Dominant wildlife habitats are big sagebrush and shrub/shrub steppe with smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, pinyon-juniper, riparian

habitats with agriculture (Section 3.2.5.4). In Moffat County, Alternative WYCO-B would be located south of U.S. Highway 40 and colocated with an existing 345kV transmission line through the Tuttle Ranch Conservation Easement. Tuttle Ranch Conservation Easement is recognized by CPW as containing high-quality winter range and migratory routes for the largest elk and mule deer herds in Colorado (including the E-2 Bears Ears and E-6 White River elk herds), and also local pronghorn populations (CPW 2013). Big-game habitat south of U.S. Highway 40 in the Tuttle Ranch Conservation Easement is of higher value and importance for big game species than habitat north of U.S. Highway 40 (CPW 2013). A comparison of route variations of Alternative WYCO-B in the vicinity of the Tuttle Ranch Conservation Easement is presented in Appendix F, Tables F-13 and F-19.

Mammals

Big Game

Alternative WYCO-B in Colorado (Table 3-81) crosses elk nonlimiting range along the entire route, except for the last few miles near the Moffat/Rio Blanco county line. The alternative route (Table 3-82) crosses elk severe winter range, summer concentration areas, and calving grounds. The alternative route crosses the western edge of elk severe winter range, south of the Little Snake River and northwest of Maybell and the northern edge of an area close to Elk Springs Ridge (approximately 15 miles northeast of Massadona). This alternative route bisects two summer concentration areas, which also include calving grounds, north of the Little Snake River; and a summer concentration area (that encompass calving grounds) northwest of Maybell (MV-8a). These areas represent the eastern edge of summer concentration areas in Moffat County. The alternative route does not cross the three elk migration corridors between the Wyoming/Utah state line and Craig and Maybell; between Craig and Meeker, and east of Rangely.

Alternative WYCO-B in Colorado (Table 3-81) crosses mule deer nonlimiting range where the alternative route bisects the Little Snake and Yampa river valleys. The alternative route in Colorado (Table 3-82) crosses the northernmost portion of mule deer critical winter range in Moffat County (MV-9a). The alternative route does not cross summer concentration areas, crucial year-long habitat, or migration corridors (between Craig and Meeker).

Alternative WYCO-B in Colorado (Table 3-81) crosses pronghorn nonlimiting range along the entire route. The alternative route in Colorado (Table 3-82) crosses pronghorn severe winter range north of the Little Snake River and northeast of Elk Springs Ridge (MV-9a). The alternative route does not cross fawning areas, crucial year-long areas, or migration corridors.

Alternative WYCO-B in Colorado (Tables 3-81 and 3-82) does not cross moose or Rocky Mountain bighorn sheep nonlimiting range or crucial habitat.

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative WYCO-B in Colorado would have low residual impacts on elk, mule deer, and pronghorn populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-83).

Impacts on big game in Colorado would be expected to be similar to Alternatives WYCO-B, WYCO-C, and WYCO-F because the alternative routes follow the same alignment.

Results of Additional Analysis of Potential Impacts

Alternatives WYCO-B, WYCO-C, and WYCO-F follow the same alignment in Colorado. The estimated area of disturbance to elk nonlimiting range in Colorado for Alternative WYCO-B would be similar to that of Alternatives WYCO-C and WYCO-F, but considerably less than Alternative WYCO-D (Table 3-84). There are slight variations in the estimated area of disturbance to elk calving grounds and crucial summer concentration areas; mule deer critical winter range and pronghorn severe winter range in Colorado also occur. Estimated area of disturbance to big game crucial habitat from Alternative WYCO-B would be considerably less than from WYCO-D (Table 3-85). Variations in the estimated area of disturbance occur due to analysis methodology as alternative routes that cross the same length of wildlife habitat vary in overall length across the Project area.

Alternative WYCO-B in Colorado crosses the western edge of elk severe winter range in Colorado, leaving the majority of severe winter range (located east of the alternative route) unaffected by the Project (Table 3-85). Similarly, summer concentration areas and calving grounds crossed by Alternative WYCO-B represent the eastern edge of a number of small undisturbed patches of range centered around Douglas Mountain and Diamond Peak in Moffat County. These areas are naturally bisected from relatively larger undisturbed range areas in Rio Blanco County and Routt County by the Little Snake and Yampa rivers. Alternative WYCO-B affects the E-2 (Bears Ears) and the E-6 (White River) elk herds, which represent the largest elk herds in Colorado (CDOW 2005). E-6 herd size is estimated at 41,500 with a current population objective of 28,500. The E-2 is the second largest elk herd in the U.S. with a high profile and regional importance. Currently, the E-2 herd size is estimated at 32,000 animals, although a recent model of carrying capacity conducted by the Habitat Partnership Program showed that carrying capacity for elk in the region was estimated at 16,500 (Finley and Grigg 2008). A limiting factor for elk is exceeding carrying capacity due to limited availability of crucial habitat or large population size. Therefore loss, alteration, and fragmentation of elk severe winter range, summer concentration areas, and calving areas from Alternative WYCO-B could contribute to carrying capacity pressure on elk sensitive habitat in the Project area. However, the extent and magnitude of such impacts would be limited through application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) that would limit Project-related disturbance to these habitats during critical periods when elk use specific seasonal habitats.

Limiting factors to mule deer populations include the availability of crucial winter habitat and production areas necessary for long-term population viability (Sanchez-Rojas and Gallina-Tessaro 2008). The amount of mule deer critical winter range crossed by the alternative route is a relatively small area compared to larger areas of mule deer sensitive habitat in Moffat County and in Colorado as a whole that are undisturbed by the Project. Additionally, no summer concentration areas or crucial year-long habitat are crossed, therefore Alternative WYCO-B is likely to have limited impact on mule deer reproduction. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that mule deer use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential increase in weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely affect local mule deer populations in the Project area.

Alternative WYCO-B does not impact designated pronghorn fawning areas or crucial year-long areas in Colorado, which are necessary for long-term population viability (Byers 2003). In addition, displacement or disturbance of pronghorn populations on severe winter range resulting from Alternative WYCO-B are likely to be temporary as a result of the application of seasonal and spatial restrictions (Selective Mitigation Measure 12) during times that pronghorn use specific seasonal habitats, which would limit loss of forage and restrict human use and activity in pronghorn sensitive habitat. Therefore, the alternative route is unlikely to adversely affect local pronghorn populations in the Project area. Alternative WYCO-B also would not be anticipated to disrupt pronghorn movement in the Project area over the long-term as

pronghorn migration behavior is generally habitual, following the same geographical routes. In addition, migratory routes affected by the alternative route are already subject to anthropogenic disturbance, which may reduce migration areas but not necessarily effectiveness in facilitating pronghorn movement (Baker 1978).

Alternative WYCO-C

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming follows the same alignment as Alternative WYCO-B between the Aeolus substation and Wamsutter in Wyoming. Between Wamsutter and the Wyoming/Colorado state line, Alternative WYCO-C follows an existing pipeline corridor approximately 5 miles west of Alternative WYCO-B. Dominant habitat types are the same as those described for Alternative WYCO-B, and wildlife resources present and likely to be affected by Alternative WYCO-C are described at the beginning of Section 3.2.7.5.

Mammals

Big Game

Alternative WYCO-C in Wyoming (Table 3-81) crosses slightly more elk nonlimiting range, but the same amount of elk and mule deer crucial habitat as those previously identified for Alternative WYCO-B in Wyoming. However, Alternative WYCO-C crosses marginally less pronghorn crucial year-long habitat and migration corridors than Alternative WYCO-B in Wyoming (Table 3-82). Most of the designated pronghorn migration routes in Sweetwater County are west of the alternative route (MV-9a).

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on impact assessment criteria (Table 3-79), Alternative WYCO-C in Wyoming would have low residual impacts on elk, mule deer, pronghorn, and moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-83).

For a comparison of impacts between WYCO alternative routes in Wyoming refer to the discussion of Alternative WYCO-B presented above.

Results of Additional Analysis of Potential Impacts

Greater estimated area of disturbance (in acres) to elk, mule deer, and pronghorn nonlimiting range, but equal disturbance to moose nonlimiting range would occur from Alternative WYCO-C compared to Alternative WYCO-B (Table 3-84). Slight variations also occur in the estimated area of disturbance to big game crucial habitat between Alternative WYCO-C and Alternative WYCO-B (Table 3-85). After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that elk, mule deer, and pronghorn use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential increase in weeds, and an increase in human use and activity in these habitats due to construction of new access roads. Alternative WYCO-C would not be expected to adversely influence local elk, mule deer, and pronghorn populations in the Project area in Wyoming. Impacts on big-game populations in Wyoming from Alternative WYCO-C would be similar to those described for Alternative WYCO-B.

Affected Environment (Colorado)

The affected environment for Alternative WYCO-C in Colorado would be the same as Alternative WYCO-B in Colorado, as the two alternative routes follow the same route through the state. Slight variations occur in the number of miles of big game nonlimiting range and crucial habitat crossed by Alternative WYCO-C in Colorado (Tables 3-81 and 3-82).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The environmental consequences for Alternative WYCO-C in Colorado would be the same as Alternative WYCO-B as the two alternative routes follow the same alignment through the state.

Alternative WYCO-D

Affected Environment (Wyoming)

Alternative WYCO-D follows the same alignment through Wyoming, and run east of Hanna close to an existing transmission line and wind farm. East of Hanna, the alternative route follows the same alignment as Alternative WYCO-B, WYCO-C, and WYCO-F to Wamsutter. The alternative route is farther east than the other WYCO alternative routes and follows Wyoming Highway 789 to Baggs through existing gas and oil development areas, and riparian habitat at Baggs. Dominant habitat types are the same as those described for Alternative WYCO-B, and wildlife resources present and likely to be affected by this alternative route are described at the beginning of Section 3.2.7.5.

Mammals

Big Game

Alternative WYCO-D in Wyoming crosses more elk and moose nonlimiting range, but less mule deer and pronghorn nonlimiting range than other WYCO alternative routes (Table 3-81). Alternative WYCO-D in Wyoming crosses less elk migration corridors but more mule deer and pronghorn crucial year-long habitat and more mule deer migration corridors than other WYCO alternative routes (Table 3-82 and MV-8a and MV-9a).

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79),Alternative WYCO-D would have low residual impacts on elk, mule deer, pronghorn, and moose. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-83).

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance by Alternative WYCO-D would be greater for elk and moose nonlimiting range, but less for mule deer and pronghorn nonlimiting range than for other WYCO alternative routes in Wyoming (Table 3-84). The location of disturbance corresponds to sensitive habitat crossed by the alternative route and is discussed under Affected Environment for Alternative WYCO-D. The estimated area of disturbance to elk crucial habitat by Alternative WYCO-D (Table 3-85) would be

less than other WYCO alternative routes and would only impact elk migration corridors. The estimated area of disturbance to mule deer and pronghorn crucial year-long range would be greater than all other WYCO alternative routes in Wyoming and greater for mule deer migration corridors than Alternatives WYCO-B and WYCO-C in Wyoming. Increased disturbance on mule deer migration corridors could further constrain mule deer in the vicinity of Baggs, Wyoming, where migration corridors are already constricted at two highway tunnel crossings. However, mule deer and pronghorn crucial year-long habitats and migration corridors are located in areas of existing disturbance, which suggests any potential disturbance from Alternative WYCO-D on mule deer and pronghorn populations may be more pronounced in the short-term during Project construction, than in the long-term during maintenance. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that elk, mule deer, and pronghorn use specific seasonal habitats, impacts from Alternative WYCO-D in Wyoming would be limited to minor loss of forage, a potential increase in weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence elk, mule deer, and pronghorn populations in the Project area.

Affected Environment (Colorado)

Alternative WYCO-D in Colorado follows a different alignment than all other WYCO alternative routes in Colorado, heading south along Colorado State Highway 13 to Craig, then west along U.S. Highway 40 and an existing transmission line before converging with all other WYCO alternative routes south of Maybell. Alternative WYCO-D in Colorado follows the same alignment through the Tuttle Ranch Conservation Easement area as WYCO-B, WYCO-C, and WYCO-F.

Total mileage of Alternative WYCO-D in Colorado is twice that of all other WYCO alternative routes in the state. Dominant habitat types are the same as those described for Alternative WYCO-B in Colorado but also include agricultural land. Wildlife resources present and likely to be affected by this alternative route are described at the beginning of Section 3.2.7.5.

Mammals

Big Game

There is a slight difference in the number of miles of big game nonlimiting range and crucial habitat crossed by Alternative WYCO-D in Colorado (Tables 3-81 and 3-82). Almost the entire length of Alternative WYCO-D crosses elk, mule deer, and pronghorn nonlimiting range and more of these habitats are crossed compared to the other WYCO alternative routes in Colorado (Table 3-81, MV-8a and 9a). The alternative route also crosses more elk severe winter range and elk migration corridors than other WYCO alternative routes (Table 3-81). Elk severe winter range and migration corridors overlap in the state. Alternative WYCO-D in Colorado crosses more mule deer critical winter range located west of Black Mountain and west of Craig (Table 3-82) and more pronghorn severe winter range close to the Wyoming/Colorado state line and west of Craig than all the other WYCO alternative routes.

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on impact assessment criteria (Table 3-79), Alternative WYCO-D in Colorado would have low residual impacts on elk, mule deer, and pronghorn populations. Impacts on big-game crucial habitat

would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-83).

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance by Alternative WYCO-D would be considerably greater for big game nonlimiting range in Colorado (Table 3-84). The estimated area of disturbance to critical and severe big-game habitat from Alternative WYCO-D is considerably more than from other WYCO alternative routes (Table 3-85). The elk severe winter range crossed by Alternative WYCO-D supports one of the largest concentrations of elk in the north of the state. However, severe winter range and migration corridors crossed by the alternative route are located in areas of existing disturbance, which suggests local elk populations are tolerant of or have adapted to anthropogenic activity. Therefore, any disturbance from Alternative WYCO-D to local elk populations is likely to be temporary. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during sensitive periods, impacts would be limited to minor loss of forage, a potential increase in weeds, and an increase in presence and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence elk populations in the Project area.

The magnitude of potential impacts is likely to be a function of the large amount of mule deer critical winter range and pronghorn severe winter range crossed by Alternative WYCO-D in Colorado, which is nearly twice that of all other WYCO alternative routes in the state. Mule deer critical winter range and pronghorn severe winter range are located close to U.S. Highway 40 and an existing transmission line. Therefore, potential disturbance from Alternative WYCO-D to mule deer and pronghorn populations in Colorado is likely to be temporary. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during sensitive periods, impacts from Alternative WYCO-D in Colorado would be limited to minor loss of forage, a potential increase in weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence local mule deer populations in the Project area.

Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F follows the same alignment through Wyoming and the same route as Alternative WYCO-B between the Aeolus substation and Wamsutter. Between Wamsutter and the Wyoming/Colorado state line, the alternative route crosses shrub/shrub-steppe and sagebrush habitats that have been previously disturbed by Wyoming Highway 789 and energy development east of Flat Top Mountain. Dominant habitat types are the same as those described for Alternative WYCO-B in Wyoming, and wildlife resources present and likely to be affected by this alternative route are described at the beginning of Section 3.2.7.5.

Mammals

Big Game

Alternative WYCO-F in Wyoming generally crosses similar amounts of elk, mule deer, and pronghorn nonlimiting range and crucial habitat as Alternative WYCO-B in Wyoming (Tables 3-81 and 3-82). However, Alternative WYCO-F in Wyoming crosses more mule deer crucial year-long habitat and migration corridors west of Baggs close to the Wyoming/Colorado state line and more pronghorn migration corridors and crucial year-long habitat approximately 20 miles southeast of Wamsutter than Alternative WYCO-B (MV-9a).

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative WYCO-F in Wyoming would have low residual impacts on elk, mule deer, pronghorn, and moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-83).

Results of Additional Analysis of Potential Impacts

Alternative WYCO-F in Wyoming would have the least estimated area of disturbance on elk nonlimiting range in Wyoming compared to other WYCO alternative routes (Table 3-84). Alternative WYCO-F would have a similar estimated area of disturbance for mule deer, pronghorn, and moose nonlimiting range compared to Alternatives WYCO-B and WYCO-C. The estimated area of disturbance to critical and severe big-game habitat from Alternative WYCO-F is similar to Alternatives WYCO-B and WYCO-C, and considerably less than Alternative WYCO-D (Table 3-85). The estimated area of disturbance to mule deer migration corridors associated with Alternative WYCO-F would be greater than all other WYCO alternative routes in Wyoming, which could further constrain mule deer in the vicinity of Baggs, Wyoming, where migration corridors are already constricted at two highway tunnel crossings. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts resulting from Alternative WYCO-F in Wyoming would be limited to minor loss of forage, a potential increase in weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence elk, mule deer, and pronghorn populations in the Project area.

Affected Environment (Colorado)

The affected environment for Alternative WYCO-F in Colorado would be the same as Alternative WYCO-B in Colorado (Tables 3-81 and 3-82), as the two alternative routes follow the same alignment through the state. Slight variations occur in the number of miles of big game nonlimiting range and crucial habitat crossed by Alternative WYCO-F in Colorado.

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The environmental consequences for Alternative WYCO-F in Colorado would be the same as Alternative WYCO-B (Tables 3-84 and 3-85) as the two alternative routes follow the same alignment through the state.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Environmental Setting

The COUT BAX alternative routes are located predominantly in the Colorado Plateaus Ecoregion but cross into the Wasatch and Uinta Mountains Ecoregion and the Central Basin and Range Ecoregion as they approach Mona, Utah (Section 3.2.7.3). Wildlife habitats crossed by COUT BAX alternative routes are dominated by grasslands, shrub/shrub steppe, big sagebrush, pinyon-juniper, barren/sparsely vegetated, and developed/disturbed vegetation types through the southeastern portion of the Project area

(Colorado and eastern Utah) and montane forest, aspen, and mountain shrub in the western portion of the Project area (Manti-La Sal National Forest). For details on dominant plant communities that provide wildlife habitat in this area, refer to Section 3.2.5.4.

From U.S. Highway 40 approximately 2 miles east of Massadona, the three COUT BAX alternative routes cross into Rio Blanco County over Coal Ridge, over the White River, and follow Colorado State Highway 64 south to Rangely. All alternative routes turn southwest and follow County Road 23, east of the Rabbit and Park Mountains, then cross Texas, Missouri, and Evacuation creeks to follow the Utah/Colorado state line south. The alternative routes follow Whiskey Creek south into Garfield County, cross over Baxter Pass, and turn south following Colorado State Highway 201 into Mesa County and along Otto's Ridge west of Mack. All alternative routes follow an existing pipeline southwest in to Utah. In Utah, the three alternative routes follow U.S. Highway 50 and I-70 into Grand County, through existing oil and gas fields toward Cisco. They continue west along the I-70 corridor before crossing Little Valley Bad Lands and the Green River 3 miles south of the town of Green River. After crossing I-70, the alternative routes diverge in Emery County. Alternative COUT BAX-B follows an existing 345kV transmission line south of Cedar Mountain. Alternatives COUT BAX-C and COUT BAX-E follow U.S. Highway 6 and an existing 138kV transmission line north. Alternative COUT BAX-C crosses Dry Mesa and rejoins COUT BAX-B south of Cedar Mountain following the north rim of Buckhorn Wash toward Castle Dale and Huntington, parallel with existing power lines before crossing into USFS-administered land, over East Mountain into Sanpete County, and the Manti-La Sal National Forest. Alternatives COUT BAX-B and COUT BAX-C follow an existing power line and Utah State Route 132 along the Sanpete Valley north of Nephi to Mona. In contrast, Alternative COUT BAX-E continues north (approximately 17 miles northwest of Green River) and turns west along the Carbon/Emery county line, north of Elmo. Alternative COUT BAX-E turns north through existing gas fields west of Price and then west across the Manti-La Sal National Forest approximately 2 miles south of Lower Gooseberry Reservoir. Alternative COUT BAX-E then runs west, north of Fairview and rejoins Alternatives COUT BAX-B and COUT BAX-C north of Fountain Green.

In Colorado, elk nonlimiting range is located between Massadona and Rangely and between the East Tavaputs Plateau and Grand Valley. An isolated patch of elk severe winter range is located in the vicinity of Meeker. The largest continuous area of elk severe winter range is located in Moffat County, and stretches northeast from Rangely toward Maybell, then east toward Craig. Severe winter range and summer concentration areas are located south of the Wyoming/Colorado state line, west of Maybell and Craig, east of Fruita, and north of Grand Junction and the Grand Mesa National Forest. Summer range is located between Craig and Meeker. Elk migration corridors occur between Craig and Maybell and between Craig and Meeker. In Utah, elk nonlimiting range occurs on the Manti-La Sal National Forest. Elk crucial spring/fall habitat is located on the Manti-La Sal National Forest west of Fountain Green. Elk crucial summer habitat is located on Manti-La Sal National Forest. Elk crucial winter habitat is located along the Utah/Colorado state line west of Grand Junction, west of Price, and along the mountain foothills from Nephi south to Cedar City. Elk crucial year-long is located between East Tavaputs Plateau and Grand Valley, along the Roan Cliffs, and on West Tavaputs Plateau (MV-8b).

In Colorado, mule deer nonlimiting range is located along the White River in the vicinity of Rangely. Mule deer critical winter range is located from Meeker west to the Colorado/Utah state line. Mule deer migration corridors occur between Craig and Meeker. In Utah, mule deer nonlimiting range occurs along the Green and Price rivers, and in the vicinity of Huntington. Mule deer crucial spring/fall habitat is located on Manti-La Sal National Forest. Crucial summer range, which encompasses important fawning habitats, is widely distributed throughout the Project area and in the vicinity of Thistle. Crucial winter habitat is located west of Price, between the East Tavaputs Plateau and Grand Valley, and along mountain foothills on the Manti-La Sal National Forest. Mule deer crucial winter/spring habitat occurs on the

periphery of the Manti-La Sal National Forest and west of Mona. Crucial year-long habitat is located in the Cedar Mountain area. UDWR has not delineated any mule deer migration corridors (MV-9b).

In Colorado, pronghorn nonlimiting range is located between Massadona and Rangely along the Moffat/Rio Blanco county line and in Grand Valley. Pronghorn severe winter range is located west of Craig and in the vicinity of Maybell. In Utah, pronghorn nonlimiting range is located north of I-70 and west of Green River in the Book Cliffs area and in the Castle Valley area. Pronghorn crucial year-long habitat is located along the I-70 corridor between Green River and the Utah/Colorado state line in the vicinity of Price (MV-9b).

In Utah, moose nonlimiting range, crucial winter, and crucial year-long habitat occur in the Manti-La Sal National Forest. Crucial year-long habitat for the Rocky Mountain bighorn sheep occurs in east central Utah in the Book Cliffs range and East Tavaputs Plateau. Desert bighorn sheep nonlimiting range is located south of Green River. Crucial year-long habitat for the desert bighorn sheep occurs in two main areas, east of the Green River in Grand County in the vicinity of Arches and Canyonlands national parks and Moab and in Emery County in the vicinity of the San Rafael Swell, Mexican Mountain, and Buckhorn Wash (MV-9b).

Alternative COUT BAX-B

Affected Environment (Colorado)

Mammals

Big Game

The extent of big game nonlimiting range and crucial habitat crossed by each alternative route is displayed in Tables 3-86 and 3-87 and MV-8b and MV-9b.

TABLE 3-86
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME NONLIMITING RANGE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Big Game Nonlimiting Range[2] (miles crossed)					
		Elk	Mule Deer	Pronghorn	Moose	Desert Bighorn Sheep	Rocky Mountain Bighorn Sheep
COUT BAX-B	279.9	24.7	28.8	46.4	17.8	5.3	0.0
Colorado	*87.0*	*19.3*	*26.6*	*21.4*	*0.0*	*0.0*	*0.0*
Utah	*192.9*	*5.4*	*2.2*	*25.0*	*17.8*	*5.3*	*0.0*
COUT BAX-C	290.4	24.7	28.8	56.1	17.8	5.3	0.0
Colorado	*87.0*	*19.3*	*26.6*	*21.4*	*0.0*	*0.0*	*0.0*
Utah	*203.4*	*5.4*	*2.2*	*34.7*	*17.8*	*5.3*	*0.0*
COUT BAX-E	292.2	20.1	32.5	50.4	23.3	5.3	0.0
Colorado	*87.0*	*19.3*	*26.6*	*21.4*	*0.0*	*0.0*	*0.0*
Utah	*205.2*	*0.8*	*5.9*	*29.0*	*23.3*	*5.3*	*0.0*

NOTES:
[1]Each of the big game species will not add to the total miles column due to the overlapping habitats.
[2]Includes all designated habitat in Colorado and Utah except habitat in Table 3-87

TABLE 3-87
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Big Game Crucial Habitat (miles crossed)																			
		Elk						Mule Deer						Pronghorn				Moose				Rocky Mountain Bighorn Sheep
		Calving Grounds	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors[1]	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Critical Winter Range	Crucial Winter/Spring Range	Crucial Year-long	Migration Corridors[1]	Fawning Areas	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors[1]	Calving Grounds	Crucial Spring/Fall	Severe Winter Range	Crucial Year-long	Crucial Year-long
COUT BAX-B	279.9	4.8	0.0	29.5	40.7	0.0	0.0	3.6	15.8	69.8	2.9	0.0	0.0	79.4	4.4	79.4	0.0	0.6	0.0	17.2	0.6	0.0
Colorado	*87.0*	*4.8*	*0.0*	*11.1*	*8.6*	*0.0*	*0.0*	*0.0*	*0.0*	*41.8*	*0.0*	*0.0*	*0.0*	*0.0*	*4.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*192.9*	*0.0*	*0.0*	*18.4*	*32.1*	*0.0*	–	*3.6*	*15.8*	*28.0*	*2.9*	*0.0*	–	*79.4*	*0.0*	*79.4*	–	*0.6*	*0.0*	*17.2*	*0.6*	*0.0*
COUT BAX-C	290.4	4.8	0.0	29.5	40.7	0.0	0.0	3.6	15.8	69.8	2.9	0.0	0.0	79.6	4.4	79.6	0.0	0.6	0.0	17.2	0.6	0.0
Colorado	*87.0*	*4.8*	*0.0*	*11.1*	*8.6*	*0.0*	*0.0*	*0.0*	*0.0*	*41.8*	*0.0*	*0.0*	*0.0*	*0.0*	*4.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*203.4*	*0.0*	*0.0*	*18.4*	*32.1*	*0.0*	–	*3.6*	*15.8*	*28.0*	*2.9*	*0.0*	–	*79.6*	*0.0*	*79.6*	–	*0.6*	*0.0*	*17.2*	*0.6*	*0.0*
COUT BAX-E	292.2	4.8	0.0	25.9	63.9	0.0	0.0	2.7	14.8	77.6	5.8	0.0	0.0	91.0	4.4	95.0	0.0	1.0	0.0	14.8	1.0	0.0
Colorado	*87.0*	*4.8*	*0.0*	*11.1*	*8.6*	*0.0*	*0.0*	*0.0*	*0.0*	*41.8*	*0.0*	*0.0*	*0.0*	*0.0*	*4.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*205.2*	*0.0*	*0.0*	*14.8*	*55.3*	*0.0*	–	*2.7*	*14.8*	*35.8*	*5.8*	*0.0*	–	*91.0*	*0.0*	*95.0*	–	*1.0*	*0.0*	*14.8*	*1.0*	*0.0*

NOTE: [1]Mapped data for elk, mule deer, and pronghorn migration corridors were unavailable for the state of Utah.

Alternative COUT BAX-B in Colorado crosses elk nonlimiting range between the Rio Blanco county line and Rangely, and between the East Tavaputs Plateau and close to the Utah/Colorado state line. The alternative route crosses elk severe winter range on the Moffat/Rio Blanco county line at Coal Ridge and along the Book Cliffs on the Garfield/Mesa county line. This alternative route crosses elk summer concentration areas at Coal Ridge and also where they overlap calving grounds at Baxter Pass. Alternative COUT BAX-B in Colorado crosses mule deer nonlimiting range on the East Tavaputs Plateau south of the White River, and in the Grand Valley. A large portion of mule deer severe winter range is crossed by the alternative route between the Moffat/Rio Blanco county line at Coal Ridge and Rabbit Mountain and also along the Book Cliffs. Pronghorn nonlimiting range is crossed on the Moffat/Rio Blanco county line and in the Grand Valley. Pronghorn severe winter range is crossed on Otto's Ridge north of U.S. Highway 6 in Colorado.

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on impact assessment criteria (Table 3-79), Alternative COUT BAX-B in Colorado would have low residual impacts on elk, mule deer, and pronghorn populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-88). Initial impacts on wildlife resources are determined through the implementation of seasonal wildlife restrictions on construction and maintenance activities in the Project area. The BLM and other agencies may grant exceptions to seasonal wildlife restrictions. However, any exceptions would increase the initial level of impacts on wildlife resources and potentially result in greater residual impacts.

Impacts on big game in Colorado would be the same for Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E.

TABLE 3-88
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME SPECIES RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

		Big Game Crucial Habitat (miles crossed)			
Alternative Route	**Total Miles**	**Nonidentifiable**	**Low**	**Moderate**	**High**
COUT BAX-B	279.9	91.9	188.0	0.0	0.0
Colorado	*87.0*	*30.5*	*56.5*	*0.0*	*0.0*
Utah	*192.9*	*61.4*	*131.5*	*0.0*	*0.0*
COUT BAX-C	290.4	102.2	188.2	0.0	0.0
Colorado	*87.0*	*30.5*	*56.5*	*0.0*	*0.0*
Utah	*203.4*	*71.7*	*131.7*	*0.0*	*0.0*
COUT BAX-E	292.2	80.0	212.2	0.0	0.0
Colorado	*87.0*	*30.5*	*56.5*	*0.0*	*0.0*
Utah	*205.2*	*49.5*	*155.7*	*0.0*	*0.0*

NOTES: Includes impacts on elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep seasonal habitats.

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance to big-game populations in Colorado resulting from Alternative COUT BAX-B is similar to disturbance from the other COUT BAX alternative routes because the alternative routes follow the same alignment through the state (Tables 3-89 and 3-90). Alternative COUT

BAX-E would have the most impact on nonlimiting range but the least impact on big game crucial habitat in Colorado.

TABLE 3-89
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME NONLIMITING RANGE ACRES OF DISTURBANCE FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Elk	Mule Deer	Pronghorn	Moose	Desert Bighorn Sheep	Rocky Mountain Bighorn Sheep
COUT BAX-B	415	483	778	298	89	0
Colorado	*324*	*446*	*359*	*0*	*0*	*0*
Utah	*91*	*37*	*419*	*298*	*89*	*0*
COUT BAX-C	412	480	935	297	88	0
Colorado	*322*	*443*	*357*	*0*	*0*	*0*
Utah	*90*	*37*	*578*	*297*	*88*	*0*
COUT BAX-E	332	538	833	385	88	0
Colorado	*319*	*440*	*354*	*0*	*0*	*0*
Utah	*13*	*98*	*479*	*385*	*88*	*0*

NOTE: Acres in the table are rounded and, therefore, columns may not sum exactly.

Alternative COUT BAX-B crosses sensitive habitat used by the E-10 (Yellow Creek) elk herd, which has an estimated population size of 8,700 animals. Limiting factors identified for the E-10 herd include quality of winter range due to competition for browse with native ungulates, domestic livestock, and wild horses and an exponential increase in oil and gas development in the area (CDOW 2006a). However, the E-10 population has increased steadily over time. The small area of elk severe winter range crossed by Alternative COUT BAX-B is located in an area of existing disturbance that was previously bisected by Colorado State Highway 64 and existing transmission lines. Therefore, further disturbance or displacement of individuals resulting from the alternative route would be temporary, as local populations appear to be tolerant of or have adapted to existing development in their range. In addition, the area of severe winter range along the Book Cliffs and the calving grounds at Baxter Pass crossed by Alternative COUT BAX-B lie on the western edge of considerable elk range available in the state.

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during sensitive periods, impacts on elk by Alternative COUT BAX-B would be limited to minor loss of forage in seasonal habitat areas and a reduction in potential public access to these habitats. These effects are not anticipated to adversely influence elk populations in the Project area.

Alternative COUT BAX-B crosses range used by the D-11 Bookcliffs mule deer herd with an estimated population of 8,600 deer (CDOW 2006b). The D-11 population has been in a steady decline since 1990 and limiting factors include competition with an increasing elk population, long-term drought, loss and degradation of sensitive habitat, and an increase in energy development and human activity. In addition, mule deer herds may have reached carrying capacity of available critical winter range. The mule deer critical winter range crossed by Alternative COUT BAX-B is located in an area of existing disturbance in Rio Blanco County that was previously divided by Colorado State Highways 64 and 139 and existing transmission lines. However, mule deer habitat is well connected by migration corridors to adjacent areas of critical winter range undisturbed by the Project. In addition, mule deer severe winter range along the Book Cliffs represents the western edge of extensive range that stretches 150 miles to Grand County.

TABLE 3-90
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT ACRES OF DISTURBANCE FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Big Game Crucial Habitat (acres)																				
	Elk						Mule Deer						Pronghorn				Moose				Rocky Mountain Bighorn Sheep
	Calving Grounds	Crucial Spring/Fall Range	Crucial/Summer, Summer Concentration	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors[1]	Crucial Spring/Fall Range	Crucial/Summer, Summer Concentration	Crucial/Critical Winter Range	Crucial Winter/Spring Range	Crucial Year-long	Migration Corridors[1]	Fawning Areas	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors[1]	Calving Grounds	Crucial Spring/Fall	Severe Winter Range	Crucial Year-long	Crucial Year-long
COUT BAX-B	81	0	495	682	0	0	60	265	1,170	49	0	0	1,331	74	1,331	0	10	0	288	10	0
Colorado	*81*	*0*	*186*	*144*	*0*	*0*	*0*	*0*	*701*	*0*	*0*	*0*	*0*	*74*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*309*	*538*	*0*	*–*	*60*	*265*	*469*	*49*	*0*	*–*	*1,331*	*0*	*1,331*	*–*	*10*	*0*	*288*	*10*	*0*
COUT BAX-C	80	0	491	678	0	0	60	263	1,163	48	0	0	1,326	73	1,326	0	10	0	287	10	0
Colorado	*80*	*0*	*185*	*143*	*0*	*0*	*0*	*0*	*696*	*0*	*0*	*0*	*0*	*73*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*307*	*535*	*0*	*–*	*60*	*263*	*466*	*48*	*0*	*–*	*1,326*	*0*	*1,326*	*–*	*10*	*0*	*287*	*10*	*0*
COUT BAX-E	79	0	428	1,056	0	0	45	245	1,282	96	0	0	1,504	73	1,570	0	17	0	245	17	0
Colorado	*79*	*0*	*183*	*142*	*0*	*0*	*0*	*0*	*691*	*0*	*0*	*0*	*0*	*73*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*245*	*914*	*0*	*–*	*45*	*245*	*591*	*96*	*0*	*–*	*1,504*	*0*	*1,570*	*–*	*17*	*0*	*245*	*17*	*0*

NOTES:
[1]Mapped data for elk, mule deer, and pronghorn migration corridors were unavailable for the state of Utah.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Impacts on mule deer by Alternative COUT BAX-B would be minimized by the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during sensitive periods. Impacts would be limited to minor loss of forage in seasonal habitat areas, an increase in the potential spread of weeds and an increase in potential human use and activity in these habitats, and are not anticipated to adversely influence local mule deer populations in the Project area.

Pronghorn crucial winter range crossed by Alternative COUT BAX-B in Mesa County, Colorado, represents the eastern edge of crucial winter range that runs north along the I-70 corridor to the Green River in Utah. Limiting factors for pronghorn include the availability of crucial winter habitat and fawning areas. Impacts on pronghorn populations and habitat by the alternative route in Colorado would be minimized by the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12). Impacts would be limited to minor loss of forage in seasonal habitat areas, an increase in the potential spread of weeds, and an increase in potential human presence and activity in these habitats due to construction of access roads, and are not anticipated to adversely influence local pronghorn populations in the Project area.

Affected Environment (Utah)

Mammals

Big Game

The extent of big game nonlimiting range and crucial habitat crossed by each alternative route is displayed in Tables 3-86 and 3-87 and in MV-8b and MV-9b.

Most elk, mule deer, and moose habitats occur in higher elevations in Utah. Alternative COUT BAX-B in Utah crosses elk nonlimiting range in the vicinity of East Mountain on Manti-La Sal National Forest. The alternative route crosses elk crucial winter range along the I-70 corridor, west of the Colorado/Utah state line, and north of the Colorado River and Arches National Park. Smaller areas of elk crucial winter range are crossed on the east slopes of Sanpete Valley and Cedar Hills and San Pitch Mountains in the Uinta National Forest. The alternative route crosses elk summer concentration areas at East Mountain in the Manti-La Sal National Forest. The alternative route does not cross elk calving grounds or crucial year-long habitat.

Alternative COUT BAX-B crosses mule deer nonlimiting range along the Green River and in the vicinity of Huntington. The alternative route crosses mule deer crucial winter range, mule deer spring/fall habitat, and summer concentration areas on Manti-La Sal National Forest. Alternative COUT BAX-B also crosses mule deer crucial winter/spring habitat east of Mount Pleasant.

Alternative COUT BAX-B crosses pronghorn nonlimiting range between I-70 and Cedar Mountain. The alternative route crosses pronghorn crucial year-long habitat and fawning areas that overlap in Utah. One area of crucial year-long/fawning habitat extends from the Utah/Colorado state line along the I-70 corridor to the Green River and the other area is in the vicinity of Buckhorn Wash. This alternative route does not cross pronghorn crucial winter range.

Alternative COUT BAX-B in Utah crosses moose nonlimiting range and crucial winter range on Manti-La Sal National Forest. The alternative route crosses desert bighorn sheep nonlimiting range east of Green River, but does not cross either Rocky Mountain bighorn sheep or desert bighorn sheep crucial habitat. However, the alternative route would be located within 1 mile of Rocky Mountain bighorn sheep habitat at higher elevations of the southern edge of the Book Cliffs Range. Similarly, desert bighorn sheep year-long habitat also is located within 1 mile of the alternative route, which extends to the northern edge of the San Rafael Reef.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT BAX-B in Utah would have low residual impacts on elk, mule deer, pronghorn, and moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-88).

Impacts on big game in Utah would be similar between Alternatives COUT BAX-B and COUT BAX-C.

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance to big-game populations in Utah by Alternative COUT BAX-B is similar to Alternative COUT BAX-C (Tables 3-89 and 3-90).

The majority of elk, mule deer, and moose crucial habitat in Utah are located north of Alternative COUT BAX-B. In contrast, the majority of pronghorn crucial year-long/fawning habitat in Utah is located west of Interstate 15 (I-15). However, all elk, mule deer, pronghorn, and moose habitat that is crossed by Alternative COUT BAX-B is subject to pre-existing road and transmission line disturbance.

The COUT BAX alternative routes cross crucial habitat used by the Central Mountains elk herd with an estimated population of 12,600 elk, which is currently higher than management objectives (UDWR 2012a). Limiting factors to local elk herds include drought conditions, energy development and urban expansion, alteration, and fragmentation of habitat, and competition for forage with domestic livestock (UDWR 2012a). Similarly the Central Mountains mule deer herd with a current population size of 60,600 is affected by the alternative routes. Limiting factors for the Central Mountains mule deer herd include the poor condition of winter range due to drought conditions (UDWR 2006c).

The COUT BAX alternative routes follow I-70 along the southern edge of extensive pronghorn crucial year-long habitat that extends approximately 70 miles from the Colorado/Utah state line to the Green River. The range includes an area of oil and gas development north west of Cisco, and agricultural land east of Green River. A large area of pronghorn crucial year-long habitat, affected by Alternative COUT BAX-B, is located at Buckhorn Wash and is potentially isolated geographically by the Book Cliffs in the north from extensive habitat in the vicinity of Vernal. Preliminary studies suggest oil and gas development is a potential limiting factor to local pronghorn populations, and may disrupt migration routes and alter pronghorn winter range use (Sawyer et al. 2002). Disturbance or displacement of elk, mule deer, and pronghorn populations in Utah as a result of Alternative COUT BAX-B would be minimized by the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats. Impacts would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-B would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and

sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT BAX-B could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Alternative COUT BAX-C

Affected Environment (Colorado)

The affected environment for Alternative COUT BAX-C in Colorado would be the same as Alternative COUT BAX-B in Colorado (Tables 3-86 and 3-87) as the two alternative routes follow the same alignment through the state, and cross similar resources.

Environmental Consequences (Colorado)

The environmental consequences for Alternative COUT BAX-C in Colorado would be the same as Alternative COUT BAX-B (Table 3-88) as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

The affected environment for Alternative COUT BAX-C in Utah would be similar to Alternative COUT BAX-B in Utah (Tables 3-86 and 3-87) as the two alternative routes follow similar alignments through the state.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The environmental consequences for Alternative COUT BAX-C in Utah would be similar to Alternative COUT BAX-B (Table 3-88) as the two alternative routes follow similar alignments through the state.

Results of Additional Analysis of Potential Impacts

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts from Alternative COUT BAX-C would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads (Tables 3-89 and 3-90). These effects are not anticipated to adversely influence big-game populations in the Project area in Utah. For additional analysis of impacts on big-game populations in Utah resulting from Alternative COUT BAX-C, refer to Alternative COUT BAX-B.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-C would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT BAX-C could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Alternative COUT BAX-E

Affected Environment (Colorado)

The affected environment for Alternative COUT BAX-E would be the same as Alternative COUT BAX-B in Colorado (Tables 3-86 and 3-87) as the two alternative routes follow the same alignment through the state.

Environmental Consequences (Colorado)

The environmental consequences for Alternative COUT BAX-E in Colorado would be the same as Alternative COUT BAX-B (Tables 3-87 and 3-88) as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Mammals

Big Game

Alternative COUT BAX-E in Utah crosses more mule deer nonlimiting range along Price River and the Carbon/Emery county line, and more moose nonlimiting range on the Manti-La Sal National Forest than other COUT BAX alternative routes (Table 3-86, MV-8b and 9b). Alternative COUT BAX-E in Utah also crosses more elk and mule deer crucial spring/fall, winter, and winter/spring range on Manti-la Sal National Forest than all other COUT BAX alternative routes (Table 3-87). This alternative route crosses more pronghorn fawning areas and crucial year-long habitat than all other COUT BAX alternative routes. The pronghorn crucial year-long habitat crossed by Alternative COUT BAX-E is located in the Castle Valley area, between Utah State Route 10 and U.S. Highway 6 in existing oil or gas fields.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT BAX-E in Utah would have low residual impacts on elk, mule deer, pronghorn, moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-88).

Impacts on big game in Utah would be higher from Alternative COUT BAX-E than all other COUT BAX alternative routes.

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance to elk nonlimiting range in Utah (Table 3-89) from Alternative COUT BAX-E is considerably less than the other COUT BAX alternative routes but would affect mule deer and moose nonlimiting range considerably more than the other COUT BAX alternative routes. Alternative COUT BAX-E would disturb twice as much elk crucial winter habitat but less elk summer concentration areas than other COUT BAX alternative routes (Table 3-90). Alternative COUT BAX-E would affect more pronghorn fawning areas and crucial year-long habitat than other COUT BAX alternative routes in Utah. Alternative COUT BAX-E would disturb less moose crucial winter habitat but more moose crucial year-long habitat than other COUT BAX alternative routes.

Alternative COUT BAX-E affects sensitive habitats used by the same elk, mule deer, pronghorn, and moose herds as other COUT BAX alternative routes. For a discussion of potential impacts from Alternative COUT BAX-E to big-game habitat in Utah, refer to the impact assessment of Alternative COUT BAX-B. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts from Alternative COUT BAX-E would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area in Utah.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-E would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT BAX-E could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The COUT alternative routes are located in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. Vegetation communities crossed by the COUT alternative routes in Colorado and eastern Utah's Uinta Basin are dominated by shrub/shrub-steppe, big sagebrush, barren, invasive, and pinyon-juniper habitats; in central Utah habitat types crossed are dominated by pinyon-juniper, big sagebrush, agriculture, montane forest, aspen, and mountain shrub. Agricultural areas and areas disturbed by previous human activities are concentrated near the cities of Roosevelt, Vernal, Helper, Price, Wellington, and Nephi (Section 3.2.5.4).

All of the COUT alternative routes begin along U.S. Highway 40 in Colorado and end at the Clover Substation near Mona, Utah. The alternative routes cross the Uinta Basin using one of two paths before following various paths across the Ashley, Uinta, and/or Manti-La Sal National Forests and the Sanpete Valley, terminating at the Clover Substation. A detailed description of the vegetation communities crossed by the COUT alternative routes and their existing condition is included in Environmental Setting in Section 3.2.5 for the COUT alternative routes.

In Colorado, elk nonlimiting range is located south-east and south of Dinosaur on the Moffat/Rio Blanco county line. Severe elk winter range and summer concentration areas are located between Maybell and Dinosaur. In Utah, elk nonlimiting range occurs in the vicinity of Duchesne and Fruitland, Argyle Canyon, Book Cliffs, and on the Uinta and Manti-La Sal National Forests. Elk crucial spring/fall habitat is located on Uinta National Forest east of Heber, between Utah Lake and Strawberry Reservoir and east of Santaquin; and on Manti-La Sal National Forest east of Thistle. Elk crucial winter habitat is located between the Utah/Colorado/Wyoming state line and Vernal along the Utah/Colorado state line west of Duchesne, west of Price, and along the western foothills on the Manti-La Sal and Uinta National Forests. Crucial summer range, which encompasses calving habitat, is located in the Utah/Colorado/Wyoming state line area and higher elevations east of Duchesne. Crucial year-long habitat is primarily concentrated in areas south of Duchesne, east of Price, and between Fruitland and Colton (MV-8b).In Colorado, mule deer nonlimiting range occurs along the Moffat/Rio Blanco county line. Mule deer critical winter range stretches southwest from Massadona to the Colorado/Utah state line. A large area of critical winter range

is located in Rio Blanco County south of the White River and west of Piceance Creek, and another area of critical winter range is located in the vicinity of Grand Junction. Mule deer migration corridors occur southeast of Rangely. In Utah, mule deer nonlimiting range is located in the vicinity of Ballard and Strawberry Reservoir, East and West Tavaputs Plateaus, Bad Land Cliffs, and the Book Cliffs. Mule deer crucial spring/fall habitat follows the Nine Mile Creek, is located on Manti-La Sal National Forest; and Uinta National Forest in the Mount Timpanogos area, and east of Santaquin. Crucial summer range, which encompasses fawning habitats, is widely distributed throughout the Project area and occurs primarily between the Utah/Colorado/Wyoming state line and Vernal, north and east of Price and in the vicinity of Thistle. Mule deer crucial winter habitat is located near the Utah/Colorado/Wyoming state line, north and east of Vernal, west of Duchesne, north and west of Price, and on the Manti-La Sal and Uinta National Forests. Mule deer crucial winter/spring habitat occurs on the peripheries of Uinta and Manti-La Sal National Forests, and west of Mona. Crucial year-long habitat is primarily concentrated in the area between Vernal and Duchesne in riparian corridors and agricultural development following the Green, Duchesne, and White rivers (MV-9b).

In Colorado, pronghorn nonlimiting range occurs along the Moffat/Rio Blanco county line. Pronghorn severe winter range is located in the vicinity of Massadona, Rangely, and along the Colorado/Utah state line near Grand Junction. In Utah, pronghorn nonlimiting range is located southeast of Ballard and south of Duchesne. Pronghorn crucial year-long habitat is located along the Utah/Colorado/Wyoming state line between Bonanza and Duchesne and in the vicinity of Price (MV-9b).

In Utah, moose nonlimiting range is located on the Ashley, Manti-La Sal, and Uinta National Forests. Moose crucial spring/fall habitat is located in the vicinity of Strawberry Reservoir. Crucial winter habitat occurs in the vicinity of Fruitland and along the Book Cliffs/Wasatch Plateau area. Crucial year-long habitat occurs between the northeast corner of the state and west of Price. Moose crucial calving grounds are interspersed with crucial winter range between Fruitland and Emery (MV-8b).

Rocky Mountain bighorn sheep nonlimiting range is located on the West Tavaputs Plateau, Argyle Canyon, and on the Uinta National Forest. Crucial year-long habitat for the Rocky Mountain bighorn sheep occurs in the northeast corner of the state and in east central Utah in the Book Cliffs range and East Tavaputs Plateau (MV-9b).

Alternative COUT-A

Affected Environment (Colorado)

Mammals

Big Game

Alternative COUT-A in Colorado crosses elk, mule deer, and pronghorn nonlimiting range on the Moffat/Rio Blanco county line. The alternative route crosses elk and mule deer severe/critical habitat on the Moffat/Rio Blanco county line just north of Rangely. Elk and mule deer severe/critical habitat crossed by the alternative route is in an area affected by existing disturbance, resulting from U.S. Highway 40, Colorado State Highway 64, and power lines (Tables 3-91 and 3-92; MV-8b and 9b). Alternative COUT-A in Colorado does not cross elk calving grounds, elk and mule deer summer concentration areas, crucial year-long habitat or migration corridors, or pronghorn severe winter habitat.

TABLE 3-91
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME NONLIMITING RANGE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Big Game Nonlimiting Range[2] (miles crossed)					
		Elk	Mule Deer	Pronghorn	Moose	Desert Bighorn Sheep	Rocky Mountain Bighorn Sheep
COUT-A	207.9	18.5	43.4	30.6	45.5	0.0	0.0
Colorado	*24.3*	*9.5*	*21.7*	*24.3*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*9.0*	*21.7*	*6.3*	*45.0*	*0.0*	*0.0*
COUT-B	218.2	23.5	64.6	39.5	61.3	0.0	0.0
Colorado	*24.3*	*9.5*	*21.7*	*24.3*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*14.0*	*42.9*	*15.2*	*61.3*	*0.0*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	43.8	41.1	25.0	51.3	0.0	8.6
Colorado	*25.0*	*6.8*	*19.5*	*25.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*37.0*	*21.6*	*0.0*	*51.3*	*0.0*	*8.6*
COUT-H	200.6	44.3	47.9	25.0	23.3	0.0	9.5
Colorado	*25.0*	*6.8*	*19.5*	*25.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*37.5*	*28.4*	*0.0*	*23.3*	*0.0*	*9.5*
COUT-I	240.2	47.1	56.4	33.7	17.8	0.0	9.5
Colorado	*25.0*	*6.8*	*19.5*	*25.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*40.3*	*36.9*	*8.7*	*17.8*	*0.0*	*9.5*

NOTES:
[1]Each of the big game species will not add to the total miles column due to the habitats overlapping.
[2]Includes all designated habitat in Colorado and Utah except habitat in Table 3-92.

TABLE 3-92
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Big Game Crucial Habitat (miles crossed)																			
		Elk						Mule Deer						Pronghorn				Moose				Rocky Mountain Bighorn Sheep
		Calving Grounds	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors[2]	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Critical Winter Range	Crucial Winter/Spring Range	Crucial Year-long	Migration Corridors[2]	Fawning Areas	Crucial/Severe Winter Range	Crucial Year-long	Migration Corridors[2]	Calving Grounds	Crucial Spring/Fall Range	Crucial Winter Range	Crucial Year-long	Crucial Year-long
COUT-A	207.9	5.0	17.3	7.4	64.8	2.8	0.0	4.4	19.0	69.4	28.1	3.9	0.0	39.9	0.0	39.9	0.0	0.0	14.2	14.7	0.0	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*1.8*	*0.0*	*0.0*	*0.0*	*0.0*	*23.7*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*5.0*	*17.3*	*7.4*	*63.0*	*2.8*	–	*4.4*	*19.0*	*45.7*	*28.1*	*3.9*	–	*39.8*	*0.0*	*39.8*	–	*0.0*	*14.2*	*14.7*	*0.0*	*0.0*
COUT-B	218.2	2.2	2.2	14.6	69.4	11.4	0.0	4.4	24.2	63.8	22.6	5.2	0.0	39.9	0.0	39.9	0.0	3.1	0.0	27.7	3.1	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*1.8*	*0.0*	*0.0*	*0.0*	*0.0*	*23.7*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*2.2*	*2.2*	*14.6*	*67.6*	*11.4*	–	*4.4*	*24.2*	*40.1*	*22.6*	*5.2*	–	*39.8*	*0.0*	*39.8*	–	*3.1*	*0.0*	*27.7*	*3.1*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	6.5	2.2	0.0	68.2	8.6	0.0	4.4	32.4	52.2	22.6	2.7	0.0	57.2	0.0	57.2	0.0	2.7	0.0	39.9	2.7	8.7
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*1.8*	*0.0*	*0.0*	*0.0*	*0.0*	*21.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*6.5*	*2.2*	*0.0*	*66.4*	*8.6*	–	*4.4*	*32.4*	*30.7*	*22.6*	*2.7*	–	*57.2*	*0.0*	*57.2*	–	*2.7*	*0.0*	*39.9*	*2.7*	*8.7*
COUT-H	200.6	4.3	0.0	18.9	39.9	4.3	0.0	3.5	31.6	55.5	5.8	2.7	0.0	57.2	0.0	57.2	0.0	1.0	0.0	45.8	1.0	8.7
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*1.8*	*0.0*	*0.0*	*0.0*	*0.0*	*21.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*4.3*	*0.0*	*18.9*	*38.1*	*4.3*	–	*3.5*	*31.6*	*34.0*	*5.8*	*2.7*	–	*57.2*	*0.0*	*57.2*	–	*1.0*	*0.0*	*45.8*	*1.0*	*8.7*
COUT-I	240.2	4.3	0.0	23.2	46.7	8.2	0.0	4.4	33.7	65.3	2.9	2.7	0.0	71.8	0.0	75.2	0.0	0.7	0.0	47.0	0.7	8.7
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*1.8*	*0.0*	*0.0*	*0.0*	*0.0*	*21.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*4.3*	*0.0*	*23.2*	*44.9*	*8.2*	–	*4.4*	*33.7*	*43.8*	*2.9*	*2.7*	–	*71.8*	*0.0*	*75.2*	–	*0.7*	*0.0*	*47.0*	*0.7*	*8.7*

NOTES: [1]Each of the big game species will not add to the total miles column due to the habitats overlapping.
[2]Mapped data for elk, mule deer, and pronghorn migration corridors were unavailable for the state of Utah.

Environmental Consequences

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT-A in Colorado would have low residual impacts on elk, mule deer, and pronghorn populations (Table 3-93). Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93). Initial impacts on wildlife resources are determined through the implementation of seasonal wildlife restrictions on construction and maintenance activities in the Project area. The BLM and other agencies may grant exceptions to seasonal wildlife restrictions. However, any exceptions would increase the initial level of impacts on wildlife resources and potentially result in greater residual impacts.

Impacts on big game in Colorado would be similar for all COUT alternative routes as they follow similar alignments through the state.

TABLE 3-93
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME SPECIES RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Big Game[1] Crucial Habitat (miles crossed)			
		Nonidentifiable	Low	Moderate	High
COUT-A	207.9	42.3	165.6	0.0	0.0
Colorado	*24.3*	*0.6*	*23.7*	*0.0*	*0.0*
Utah	*183.6*	*41.7*	*141.9*	*0.0*	*0.0*
COUT-B	218.2	*45.1*	173.1	0.0	0.0
Colorado	*24.3*	*0.6*	*23.7*	*0.0*	*0.0*
Utah	*193.9*	*44.5*	*149.4*	*0.0*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	*208.2*	29.0	179.2	0.0	0.0
Colorado	*25.0*	*3.5*	*21.5*	*0.0*	*0.0*
Utah	*183.2*	*25.5*	*157.7*	*0.0*	*0.0*
COUT-H	200.6	29.7	170.9	0.0	0.0
Colorado	*25.0*	*3.5*	*21.5*	*0.0*	*0.0*
Utah	*175.6*	*26.2*	*149.4*	*0.0*	*0.0*
COUT-I	240.2	40.4	199.8	*0.0*	0.0
Colorado	*25.0*	*3.5*	*21.5*	*0.0*	*0.0*
Utah	*215.2*	*36.9*	*178.3*	*0.0*	*0.0*

NOTES: [1]Includes impacts on elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep seasonal habitats.

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance for Alternative COUT-A in Colorado would be greater for elk and mule deer nonlimiting range, but similar for pronghorn nonlimiting range compared to all other COUT alternative routes in Colorado (Table 3-94). The estimated area of disturbance to big game crucial habitat in Colorado would be similar for all COUT alternative routes, which follow similar alignments through the state (Table 3-95). The estimated area of disturbance is discussed under Affected Environment for Alternative COUT-A. Disturbance to big game severe and critical habitat under Alternative COUT-A in Colorado is primarily to elk severe winter range and mule deer critical winter range.

TABLE 3-94
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME NONLIMITING RANGE ACRES OF DISTURBANCE FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

	Big Game Nonlimiting Range[1] (acres)					
Alternative Route	**Elk**	**Mule Deer**	**Pronghorn**	**Moose**	**Desert Bighorn Sheep**	**Rocky Mountain Bighorn Sheep**
COUT-A	328	770	543	807	0	0
Colorado	*169*	*385*	*431*	*0*	*0*	*0*
Utah	*160*	*385*	*112*	*807*	*0*	*0*
COUT-B	407	1,119	684	1062	0	0
Colorado	*165*	*376*	*421*	*0*	*0*	*0*
Utah	*243*	*743*	*263*	*1,062*	*0*	*0*
COUT-C (Agency and Applicant Preferred Alternative)	816	766	466	956	0	160
Colorado	*127*	*363*	*466*	*0*	*0*	*0*
Utah	*690*	*402*	*0*	*956*	*0*	*160*
COUT-H	802	867	452	422	0	172
Colorado	*123*	*353*	*452*	*0*	*0*	*0*
Utah	*679*	*514*	*0*	*422*	*0*	*172*
COUT-I	839	1,004	600	317	0	169
Colorado	*121*	*347*	*445*	*0*	*0*	*0*
Utah	*718*	*657*	*155*	*317*	*0*	*169*

NOTES:
[1]Includes all designated habitat in Colorado and Utah except habitat in Table 3-95.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Alternative COUT-A in Colorado cross the western edge of elk severe winter range, which leaves an extensive area of severe winter range unaffected by the alternative routes in Colorado. The elk severe winter range crossed by the alternative routes is subject to existing disturbance, which suggests local populations are tolerant of or have adapted to previous habitat alteration. Thus any disturbance or displacement of individuals from the alternative route during construction is likely to be temporary. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during sensitive periods, impacts from Alternative COUT-A would be limited to minor loss of forage in seasonal habitat areas, an increase in the potential spread of weeds, and an increase in human presence and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence elk populations in the Project area.

The mule deer critical winter range crossed by Alternative COUT-A in Colorado is located at the northern edge of available mule deer habitat in Rio Blanco County. The areas of potentially affected mule deer critical winter range are connected by migration corridors to adjacent habitat southeast of the alternative routes. Local populations have potentially adapted to existing disturbance in their range, or have circumvented existing disturbance by using adjacent, well-connected habitat areas. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that mule deer use specific seasonal habitats, impacts from Alternative COUT-A would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the presence of weeds in big-game habitats, and human presence and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence mule deer populations in the Project area.

TABLE 3-95
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT ACRES OF DISTURBANCE FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Big Game Crucial Habitat (acres)																			
	Elk						Mule Deer						Pronghorn				Moose				Rocky Mountain Bighorn Sheep
	Calving Grounds	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Severe Winter Range	Crucial Year Long	Migration Corridors[1]	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Critical Winter Range	Crucial Winter/Spring Range	Crucial Year Long	Migration Corridors[1]	Fawning Areas	Crucial/Severe Winter Range	Crucial Year Long	Migration Corridors[1]	Calving Grounds	Crucial Spring/Fall Range	Crucial Winter Range	Crucial Year Long	Crucial Year Long
COUT-A	89	307	131	1,150	50	0	78	337	1,231	499	69	0	708	0	708	0	0	252	261	0	0
Colorado	*0*	*0*	*0*	*32*	*0*	*0*	*0*	*0*	*420*	*0*	*0*	*0*	*2*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*89*	*307*	*131*	*1,118*	*50*	*–*	*78*	*337*	*811*	*499*	*69*	*–*	*706*	*0*	*706*	*–*	*0*	*252*	*261*	*0*	*0*
COUT-B	38	38	253	1,202	198	0	76	419	1,106	392	90	0	691	0	692	0	54	0	480	54	0
Colorado	*0*	*0*	*0*	*31*	*0*	*0*	*0*	*0*	*411*	*0*	*0*	*0*	*2*	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*38*	*38*	*253*	*1,171*	*198*	*–*	*76*	*419*	*695*	*392*	*90*	*–*	*690*	*0*	*690*	*–*	*54*	*0*	*480*	*54*	*0*
COUT-C (Agency and Applicant Preferred Alternative)	121	41	0	1,270	160	0	82	604	972	421	50	0	1,065	0	1,065	0	50	0	743	50	162
Colorado	*0*	*0*	*0*	*34*	*0*	*0*	*0*	*0*	*401*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*121*	*41*	*0*	*1,237*	*160*	*–*	*82*	*604*	*572*	*421*	*50*	*–*	*1,065*	*0*	*1,065*	*–*	*50*	*0*	*743*	*50*	*162*
COUT-H	78	0	342	722	78	0	63	572	1,004	105	49	0	1,035	0	1035	0	18	0	829	18	157
Colorado	*0*	*0*	*0*	*33*	*0*	*0*	*0*	*0*	*389*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*78*	*0*	*342*	*689*	*78*	*–*	*63*	*572*	*615*	*105*	*49*	*–*	*1,035*	*0*	*1035*	*–*	*18*	*0*	*829*	*18*	*157*

TABLE 3-95
ALTERNATIVE ROUTE COMPARISON FOR BIG GAME CRUCIAL HABITAT ACRES OF DISTURBANCE FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Big Game Crucial Habitat (acres)																			
	Elk						Mule Deer						Pronghorn				Moose				Rocky Mountain Bighorn Sheep
	Calving Grounds	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Severe Winter Range	Crucial Year Long	Migration Corridors[1]	Crucial Spring/Fall Range	Crucial Summer/Summer Concentration	Crucial/Critical Winter Range	Crucial Winter/Spring Range	Crucial Year Long	Migration Corridors[1]	Fawning Areas	Crucial/Severe Winter Range	Crucial Year Long	Migration Corridors[1]	Calving Grounds	Crucial Spring/Fall Range	Crucial Winter Range	Crucial Year Long	Crucial Year Long
COUT-I	77	0	413	832	146	0	78	600	1,163	52	48	0	1,279	0	1340	0	13	0	837	13	155
Colorado	*0*	*0*	*0*	*32*	*0*	*0*	*0*	*0*	*383*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*77*	*0*	*413*	*800*	*146*	–	*78*	*600*	*780*	*52*	*48*	–	*1,279*	*0*	*1,340*	–	*13*	*0*	*837*	*13*	*155*

NOTES:
[1]Mapped data for elk, mule deer, and pronghorn migration corridors were unavailable for the state of Utah.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Affected Environment (Utah)

Mammals

Big Game

Alternative COUT-A in Utah crosses elk nonlimiting range north of Arcadia and Starvation Reservoir and near Fruitland (Table 3-91). The alternative routes cross elk calving grounds, crucial spring/fall range, crucial winter range, summer concentration areas, and crucial year-long habitat between the Duchesne River and Strawberry Reservoir, as well as another area of elk crucial winter range on the Uinta National Forest (Table 3-92, MV-8b). These alternative routes cross mule deer crucial spring/fall range in the vicinity of Mount Baldy and winter/spring habitat on Uinta National Forest and along the U.S. Highway 89 corridor. Crucial year-long habitat along the Green and Uinta rivers just east of Roosevelt, as well as summer concentration areas, crucial winter range, and crucial year-long habitat between the Duchesne River and Strawberry Reservoir. Mule deer crucial winter range is crossed on Manti-La Sal and Uinta National Forests. Alternative COUT-A in Utah crosses pronghorn crucial year-long habitat and fawning areas between the Colorado/Utah state line and Duchesne, but do not cross pronghorn crucial winter range (MV-9b). Alternative COUT-A crosses moose crucial spring/fall and winter range in the vicinity of Strawberry Reservoir.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria used in this analysis (Table 3-79), Alternative COUT-A in Utah would have low residual impacts on elk, mule deer, pronghorn, and moose populations (Table 3-93). Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93).

Results of Additional Analysis of Potential Impacts

The estimated area of disturbance to elk and mule deer nonlimiting range would be less from Alternative COUT-A in Utah compared to other COUT alternative routes (Table 3-94).

The estimated area of disturbance to elk crucial habitat in Utah differs between the COUT alternative routes (Table 3-95). Alternative COUT-A would result in the least impact to elk crucial year-long habitat than other COUT alternative routes but the greatest impact on elk calving grounds and crucial spring/summer range compared to other COUT alternative routes. Alternative COUT-B and COUT-C would have the greatest impact to elk crucial winter range. Alternative COUT-C also has the greatest impact on elk calving areas and crucial year-long habitat compared to other COUT alternative routes. Overall, disturbance to elk crucial habitat is comparable between Alternatives COUT-A, COUT-B, and COUT-C. Alternative COUT-I affects elk summer concentration areas more than the other COUT alternative routes but is also the longest alternative route in Utah. Alternative COUT-H would create the least disturbance to elk sensitive habitats.

Alternative COUT-A would result in the greatest impact on mule deer crucial winter range and winter/spring ranges, but would have the least impact to mule deer crucial summer range compared to other COUT alternative routes. Overall COUT-A would have the greatest impact on mule deer crucial habitat in Utah and Alternative COUT-H would have the least disturbance. Alternative COUT-A would have the least disturbance to pronghorn crucial habitat in Utah, while Alternative COUT-I would have the greatest impact, specifically to pronghorn crucial year-long habitat and fawning areas.

Alternative COUT-A would have the least estimated area of disturbance to moose crucial winter range in Utah but is the only COUT alternative route to affect moose crucial spring/fall habitat. Alternative COUT-C would have the greatest estimated area of disturbance to moose calving grounds and crucial year-long habitat. Alternative COUT-I would have the greatest disturbance to moose crucial winter range, followed by Alternatives COUT-H and COUT-C.

The COUT alternative routes cross crucial habitat used by the Wasatch Mountains elk herd with an estimated population of 6,478. Limiting factors to local elk herds include range conditions, energy development and urban expansion, alteration and fragmentation of vegetation composition, drought conditions, and forage competition (UDWR 2012a). Similarly the Wasatch Mountains mule deer herd with a current population size of 40,800 is affected by the alternative routes. Limiting factors for the Wasatch Mountains mule deer herd include the poor condition of winter range due to drought conditions (UDWR 2006d).

The elk, mule deer, and moose crucial winter range and summer concentration areas crossed by Alternative COUT-A are part of extensive crucial habitat available in Utah, located north of the Project area in Ashley National Forest and south in Uinta and Manti-La Sal National Forests. Big game crucial habitat that may be affected by the COUT alternative routes are subject to existing disturbance from U.S. Highways 40, 6, and 89; Utah State Route 132, and I-15, oil and gas development, and transmission lines. Mule deer crucial year-long habitat is located in riparian corridors and would be affected by any of the COUT alternative routes, although mule deer crucial habitat is located in an area that has previously been affected by human and agricultural development. Most pronghorn crucial year-long/fawning habitat in Utah is located west of I-15. Alternative habitat that is undisturbed by the Project also is located north and south of the Project area.

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts from Alternative COUT-A would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-A would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT-A could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Alternative COUT-B

Affected Environment (Colorado)

The affected environment for Alternative COUT-B in Colorado would be the same as Alternative COUT-A as the alternative routes follow the same alignment through the state (Tables 3-91 and 3-92).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The environmental consequences for Alternative COUT-B in Colorado would be the same as Alternative COUT-A (Table 3-93) in Colorado as the alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Mammals

Big Game

Alternative COUT-B in Utah crosses elk nonlimiting range south of Duchesne and in the Roan Cliffs area (Table 3-91). Mule deer nonlimiting range is crossed south of Duchesne, in the vicinity of Roosevelt, and in the Bad Land Cliffs. Pronghorn nonlimiting range is crossed east of Ballard and south of Duchesne. Moose nonlimiting range is crossed on Ashley, Manti-La Sal, and Uinta National Forests. Alternative COUT-B in Utah crosses elk crucial winter range and summer concentration areas on Ashley National Forest, crucial year-long habitat along the U.S. Highway 6 corridor, and calving grounds (Table 3-92, MV-8b). This alternative route crosses mule deer crucial spring/fall, winter, winter/spring range, and summer concentration areas on the Ashley and Manti-La Sal National Forests and crucial year-long habitat east of Duchesne along the Duchesne River in riparian habitat and agricultural areas (MV-9b). Alternative COUT-B in Utah crosses the same route through pronghorn crucial year-long habitat and fawning areas as Alternative COUT-A in Utah. The alternative route crosses moose calving areas, crucial winter range, and crucial year-long habitat on the Ashley and Uinta National Forests. Alternative COUT-B diverges in the Roan Cliffs area in Utah County.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT-B in Utah would have low residual impacts on elk, mule deer, and pronghorn populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93). Impacts from Alternative COUT-B would be less than Alternatives COUT-I and COUT-C, equal to COUT-H, and would be greater than Alternative COUT-A.

Results of Additional Analysis of Potential Impacts

Alternative COUT-B in Utah would have greater disturbance on mule deer and moose nonlimiting range than other COUT alternative routes in Utah (Table 3-94). In contrast, Alternative COUT-B would generally have less impact on big game crucial habitat than other COUT alternative routes in Utah, except COUT-A (Table 3-95). However, Alternative COUT-B would have the greatest impact on elk crucial winter range compared to other COUT alternative routes. The elk crucial year-long habitat crossed by Alternative COUT-B is located in an area of existing disturbance close to U.S. Highway 6, but represents the northern edge of a series of contiguous crucial year-long habitats that connect the Wasatch Plateau to the Book Cliffs Range. Local elk populations appear to be tolerant of or have adapted to existing development in their range; therefore, further disturbance or displacement of individuals during Project construction is likely to be temporary.

Alternative COUT-B would disturb a larger portion of mule deer crucial year-long habitat than Alternative COUT-A located along riparian corridors and in agricultural development following the

Green and Duchesne rivers. Disturbance to pronghorn crucial year-long habitat from Alternative COUT-B would be similar to that from Alternative COUT-A as the alternative routes cross the same pronghorn crucial habitat before the alternative routes diverge in Utah. For additional discussion on big game herds likely to be affected in Utah, refer to Alternative COUT-A. After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific crucial habitats, impacts from Alternative COUT-B would be limited to minor loss of forage in crucial habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-B would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT-B could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-C in Colorado crosses similar miles of nonlimiting range as Alternative COUT-A in Colorado (Tables 3-91 and 3-92). Alternative COUT-C in Colorado crosses similar miles of big game severe and critical habitat as Alternative COUT-A in Colorado, except that Alternative COUT-C crosses less mule deer critical winter range then Alternative COUT-A (Table 3-92, MV-8b and MV-9b).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Based on the impact assessment criteria (Table 3-79), Alternative COUT-C in Colorado would have low residual impacts on elk, mule deer, and pronghorn populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93). Impacts from Alternative COUT-C would be the same as Alternatives COUT-A and COUT-B in Colorado, but impacts on big game from Alternative COUT-C would be greater than for Alternatives COUT-H and COUT-I in Colorado.

Results of Additional Analysis of Potential Impacts

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts from Alternative COUT-C would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area. For additional analysis of impacts on big-game populations in Colorado resulting from Alternative COUT-C, refer to Alternative COUT-A.

Affected Environment (Utah)

Mammals

Big Game

Alternative COUT-C in Utah crosses elk and mule deer nonlimiting range in Duchesne County on the West Tavaputs Plateau and Argyle Canyon area and elk nonlimiting range in Utah County south of the Ashley National Forest. The alternative routes also cross pronghorn nonlimiting range on the West Tavaputs Plateau and Rocky Mountain bighorn sheep nonlimiting range in the Argyle Canyon area. Alternative COUT-C in Utah crosses elk crucial year-long habitat and calving areas just west of the Green River and cross elk crucial winter range in the vicinity of Nine Mile Canyon in Duchesne County (MV-8b). These alternative routes cross mule deer crucial year-long habitat along riparian corridors located along the White and Green rivers, mule deer crucial winter range located along Argyle Creek and summer concentration areas and winter/spring habitat in the Nine Mile Canyon area. Alternative COUT-C crosses a large area of pronghorn crucial year-long habitat between the Colorado/Utah state line to west of the Green River from the Roan Cliffs in Duchesne County. The alternative route crosses Rocky Mountain bighorn sheep crucial year-long habitat between the Green and White rivers (MV-9b). Alternative COUT-C follows the same alignment through Ashley, Uinta, and Manti-La Sal National Forests as Alternative COUT-B and, therefore, crosses the same elk, mule deer, and moose crucial habitats.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT-C in Utah would have low residual impacts on elk, mule deer, pronghorn, and moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93).

Impacts from Alternative COUT-C would be less than COUT-I, but greater than COUT-H, COUT-B, and COUT-A respectively.

Results of Additional Analysis of Potential Impacts

Alternative COUT-C in Utah would have the least impact on Rocky Mountain bighorn sheep nonlimiting range and no impact on pronghorn nonlimiting range (Table 3-94). For additional discussion on big game herds likely to be affected in Utah, refer to the discussion for Alternative COUT-A. The large area of pronghorn crucial year-long habitat crossed by Alternative COUT-C is located in substantial oil and gas development. Ten-year population trends for pronghorn in the South Slope, Book Cliffs, and Nine Mile wildlife management units were down as of 2008 (UDWR 2009b), which suggests that local pronghorn populations may be sensitive to additional disturbance in these areas. However, alternative crucial year-long habitat that would be undisturbed by Alternative COUT-C is available to the north. Alternative COUT-C crosses the edge of Rocky Mountain bighorn sheep crucial year-long southern range in Utah, leaving the majority of crucial year-long habitat on the East Tavaputs Plateau undisturbed by the Project. All Rocky Mountain bighorn sheep in Utah, currently estimated at approximately 1,900 animals, are the result of reintroduction efforts (UDWR 2008a). Limiting factors to bighorn sheep include parasite and disease transference and forage competition from domestic sheep and other ungulates, predation, habitat degradation and fragmentation from mineral development, and human disturbance from increased recreational activities. However, reintroducing animals remains the main management tool for restoring

and maintaining healthy bighorn populations in Utah (UDWR 2008a). After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts from Alternative COUT-C would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-C would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT-C could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The 345kV Bears Ears to Bonanza transmission line components that would be relocated cross mule deer crucial/critical winter range, pronghorn crucial year-long habitat, and pronghorn fawning areas.

Based on the impact assessment criteria used for the EIS, impacts from relocating the transmission line components on big-game habitats would be nonidentifiable or low. The types of impacts associated with relocating the transmission line would be similar to the effects of construction of the 500kV transmission line. The types of potential effects that may occur are described in Section 3.2.7.4.

Alternative COUT-H

Affected Environment (Colorado)

The affected environment for Alternative COUT-H in Colorado would be similar to Alternative COUT-A in Colorado, and the same as Alternative COUT-C in Colorado as the alternative routes follow the same alignment through the state (Tables 3-91 and 3-92).

Environmental Consequences (Colorado)

The environmental consequences for Alternative COUT-H in Colorado would be similar to Alternative COUT-A (Tables 3-94 and 3-95) as the alternative routes follow similar alignments through the state.

Affected Environment (Utah)

Mammals

Big Game

The affected environment for Alternative COUT-H in Utah would be the same as Alternative COUT-C between the Colorado/Utah state line and the Roan Cliffs in Duchesne County for elk, mule deer, and pronghorn as the alternative routes follow the same alignment through the state (Tables 3-91 and 3-92, MV-8b and 9b). Alternative COUT-H in Utah crosses elk nonlimiting range and crucial summer concentration areas northeast of Helper and crucial spring/fall and summer concentration areas on Manti-La Sal National Forest. The alternative route crosses mule deer nonlimiting range northeast of Helper and

crosses elk crucial winter range and mule deer crucial winter range west of Price, in the Cedar Hills west of Fairview and crucial winter and winter/spring range on the Uinta National Forest. Alternative COUT-H crosses elk severe winter range and mule deer summer concentration areas and moose crucial winter range on Manti-La Sal National Forest.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT-H in Utah would have low residual impacts on elk, mule deer, pronghorn, and moose populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93).

Impacts would be greater from Alternatives COUT-I and COUT-C than impacts from Alternative COUT-H. The impacts for Alternative COUT-H would be greater than those for Alternative COUT-A and equal to COUT-B.

Results of Additional Analysis of Potential Impacts

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times that big game use specific seasonal habitats, impacts from Alternative COUT-H would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area. For additional discussion on big game herds likely to be affected in Utah, refer to the discussion for Alternative COUT-A.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-H would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT-H could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on wildlife resources from the Bears Ears to Bonanza 345kV transmission line relocation would be the same as Alternative COUT-C.

Alternative COUT-I

Affected Environment (Colorado)

The affected environment for Alternative COUT-I in Colorado would be similar to Alternative COUT-A, and the same as Alternative COUT-C as the alternative routes follow the same alignment through the state (Tables 3-91 and 3-92).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The environmental consequences for Alternative COUT-I in Colorado would be similar to Alternative COUT-A (Tables 3-94 and 3-95) and the same as Alternative COUT-C as the alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Mammals

Big Game

The affected environment for Alternative COUT-I in Utah would be the same as Alternative COUT-C between the Colorado/Utah state line and the Roan Cliffs in Duchesne County as the alternative routes follow the same alignment through the state (Tables 3-91 and 3-92). This alternative route crosses elk and mule deer nonlimiting range east of Helper along the Book Cliffs range and in the vicinity of Huntington. Alternative COUT-I also crosses mule deer nonlimiting range east of Price and Wellington and in Castle Valley on the Carbon/Emery county line. The alternative route crosses pronghorn nonlimiting range in the Castle Valley area. Alternative COUT-I in Utah crosses elk crucial year-long habitat west of Price and crucial spring/fall, winter/spring and year-long habitat on Manti-La Sal National Forest (MV-8b). The alternative route crosses elk crucial winter range north of Huntington and Cleveland in an area of existing oil and gas development and on Uinta and Manti-La Sal National Forests. Alternative COUT-I also crosses mule deer crucial winter range in the vicinity of Nine Mile Canyon and Price/Huntington and pronghorn crucial year-long habitat east of Price (MV-9b).

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

Mammals

Big Game

Based on the impact assessment criteria (Table 3-79), Alternative COUT-I in Utah would have low residual impacts on elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep populations. Impacts on big-game crucial habitat would be low in areas where crucial habitats are crossed and nonidentifiable in areas that do not cross mapped crucial habitat (Table 3-93).

Impacts for Alternative COUT-I would be greater than the impacts COUT-C, COUT-H, COUT-B, and COUT-A, respectively.

Results of Additional Analysis of Potential Impacts

After the application of seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) during times when big game use specific seasonal habitats, impacts from Alternative COUT-I would be limited to minor loss of forage in seasonal habitat areas, a potential increase in the weeds, and an increase in human use and activity in these habitats due to construction of

new access roads. These effects are not anticipated to adversely influence big-game populations in the Project area. For additional discussion on big game herds likely to be affected in Utah, refer to the discussion for Alternative COUT-A.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-I would be in conformance with standards, guidelines, and management objectives pertaining to wildlife resources contained in the applicable USFS LRMPs and USFS policy objectives pertaining to USFS MIS wildlife species addressed in this section. The results of these analyses are presented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The analysis found that Alternative COUT-I could be approved in compliance with standards, guidelines, and management objectives pertaining to wildlife resources contained in applicable USFS LRMPs (USFS 2015b). For MIS species, the analysis found the Project would not affect the existing forestwide population trends for all MIS species in the Project area.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on wildlife resources from the Bears Ears to Bonanza 345kV transmission line relocation would be the same as Alternative COUT-C.

3.2.7.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A (MV-8 and MV-9) would be located on the Wyoming/Colorado state line in sagebrush, grassland, and pinyon-juniper habitat. In Wyoming, Siting Area A would be located in elk, mule deer, and pronghorn crucial year-long habitat, and migration corridors. In Colorado, Siting Area A would be located in mule deer critical winter range and nonlimiting range and pronghorn nonlimiting range.

Environmental Consequences

The estimated area of disturbance (in acres) to elk, mule deer, and pronghorn nonlimiting habitat from the Powder Wash series compensation station is included in the disturbance analysis for Alternative WYCO-B (Tables 3-84 and 3-85). Siting Area A is located in habitats used by local elk, mule deer, and pronghorn populations, including the Bitter Creek herd in Wyoming as described in Alternative WYCO-B Environmental Consequences.

If the series compensation station is constructed in elk, mule deer, and pronghorn habitats in Siting Area A, crucial/critical habitat use and migration routes could be temporarily affected during the construction period. After the application of Selective Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities during times that elk, mule deer, and pronghorn use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. Siting Area A is located in an area of previous anthropogenic disturbance, which includes heavy oil and gas development that local big-game populations tolerate and continue to use seasonal habitat in the area. Therefore, effects from the Powder Wash series compensation station would be limited to loss of forage resources and are not anticipated to adversely influence local big-game populations in Wyoming and Colorado over the long-term.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B (MV-8 and MV-9) would be located where Alternative WYCO-B diverges in Nine Mile Basin in Colorado. Siting Area B would be located in sagebrush, grassland, and pinyon-juniper habitat and sited in elk severe winter range, summer concentration areas, calving grounds, nonlimiting habitat, and the western edge of elk migration corridors in Moffat County. Siting Area B also would be located in mule deer critical winter range and pronghorn severe winter range and nonlimiting range.

Environmental Consequences

The estimated area of disturbance (in acres) to designated elk, mule deer, and pronghorn habitat from the Nine Mile Basin series compensation station is included in the disturbance analysis for Alternative WYCO-B (Tables 3-84 and 3-85). Siting Area B would be located in habitat used by local elk, mule deer, and pronghorn populations in Colorado, including the E-2 (Bears Ears) elk herd that is the second largest elk herd in the U.S. If the series compensation station is constructed in elk, mule deer, and pronghorn habitats in Siting Area B; habitat use—including severe/critical habitat and calving grounds—could be temporarily affected during the construction period. Severe/critical winter range availability is a limiting factor for both elk and mule deer. However, the application of Selective Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities would reduce impacts on big game during sensitive times. Therefore, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. Overall, effects from the Nine Mile Basin series compensation station would be limited to loss of forage resources and are not anticipated to adversely influence local elk, mule deer, and pronghorn populations in Colorado.

Siting Area C – Maybell

Affected Environment

In Colorado, Siting Area C would be located where Alternative WYCO-B diverges in the Tuttle Ranch Conservation Easement area. Wildlife habitat includes riparian, agricultural, big sagebrush, shrub/shrub steppe, barren/sparsely vegetated, grassland, and pinyon-juniper vegetation communities. The Maybell Series Compensation Station Siting Area would be located in elk severe winter range, summer concentration areas, calving grounds, and nonlimiting habitat and mule deer and pronghorn critical/severe winter range and nonlimiting habitat.

Environmental Consequences

The estimated area of disturbance (in acres) to designated elk, mule deer, and pronghorn habitat from the Maybell series compensation station is included in the disturbance analysis for Alternative WYCO-B (Tables 3-84 and 3-85). Siting Area C would be located in habitat used by local elk, mule deer, and pronghorn populations in Colorado, including the E-2 (Bears Ears) and E-6 (White River) elk herds, which are the largest elk herds in the U.S. and of great regional economic importance in Colorado. Habitat in the Tuttle Ranch Conservation Easement area is considered high-quality winter range and important migratory routes for elk, mule deer, and pronghorn (CPW 2013). If the series compensation station is constructed in elk, mule deer, and pronghorn habitats in Siting Area C, habitat use could be temporarily affected during the construction period. The availability of severe/critical winter range is a limiting factor for big game. However, the application of Selective Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities would reduce impacts on big game during sensitive times, and impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. Overall,

effects from the Maybell series compensation station would be limited to loss of forage resources in the site, and are not anticipated to adversely influence local big-game populations in Colorado.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Siting Area D (MV-8 and MV-9) would be located in wildlife habitat that includes sagebrush, shrub/shrub steppe and pinyon-juniper vegetation communities just south of U.S. Highway 40, west of Craig. The Bell Rock series compensation station would be located in elk severe winter range, migration corridors, and nonlimiting habitat and in mule deer critical winter range. Siting Area D also is located in pronghorn severe winter range and nonlimiting habitat.

Environmental Consequences

The estimated area of disturbance (in acres) to designated elk, mule deer, and pronghorn habitat from the Bell Rock series compensation station is included in the disturbance analysis for Alternative WYCO-B (Tables 3-84 and 3-85). Siting Area D would be located in habitat used by local elk, mule deer, and pronghorn populations in Colorado, including the E-2 (Bears Ears) elk herd, which is the second largest elk herd in the U.S. If the series compensation station is constructed in elk, mule deer, and pronghorn habitats in Siting Area D, habitat use and seasonal migration could be temporarily affected during the construction period, although unlikely to be permanent as local big-game populations have adapted to previous anthropogenic disturbance in the proposed series compensation station siting area. The application of Selective Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities would reduce impacts on big game during sensitive times, and impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. Overall, effects from the Bell Rock series compensation station would be limited to loss of forage resources in the site, and are not anticipated to adversely influence local big-game populations in Colorado.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

Siting Area G (MV-8b and MV-9b) would be located in an area previously disturbed by the I-70 corridor and U.S. Highway 6 approximately 5 miles west of the Green River. Wildlife habitat is predominantly barren, and shrub/shrub steppe habitat, interspersed with pinyon juniper. Siting Area G would be located in pronghorn crucial year-long habitat but would not impact elk, mule deer, Rocky Mountain bighorn sheep, or moose populations in Utah. Siting Area G would not be sited in known Bird Habitat Conservation Areas (BHCA) in Utah.

Environmental Consequences

The estimated area of disturbance (in acres) to pronghorn crucial year-long habitat from the Green River series compensation is included in the disturbance analysis for Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E (Tables 3-89 and 3-90). If the series compensation station is constructed in pronghorn habitats in Siting Area G, habitat use could be temporarily affected during the construction period, although local populations are likely to have adapted to previous anthropogenic disturbance in the siting area. After the application of Selective Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities during times that mule deer and pronghorn use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. However, the effects from siting the Green River series compensation station would be limited to loss of forage resources and are not anticipated to adversely influence local pronghorn populations in Utah.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Siting Area F (MV-8b and MV-9b) would be located in an area previously disturbed by agriculture and U.S. Highway 40 in the vicinity of Roosevelt. Wildlife habitat is predominantly agricultural land, barren, sage-brush, and shrub/shrub steppe vegetation communities. Siting Area F would be located in mule deer and pronghorn crucial year-long habitat but would not impact elk, mule deer, Rocky Mountain bighorn sheep, or moose populations in Utah.

Environmental Consequences

The estimated area of disturbance (in acres) to mule deer and pronghorn crucial year-long habitat from the Roosevelt series compensation station is included in the disturbance analysis for Alternative COUT-A (Tables 3-94 and 3-95). If the series compensation station is constructed in mule deer and pronghorn habitats in Siting Area F, habitat use could be temporarily affected during the construction period, although local populations are likely to have adapted to previous anthropogenic disturbance in the siting area. After the application of Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities during times that mule deer and pronghorn use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. However, the effects from the Roosevelt Series Compensation Station would be limited to loss of forage resources in the site, and are not anticipated to adversely influence local mule deer and pronghorn populations in Utah.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B would have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Siting Area E (MV-8b and MV-9b) would be located in an area previously disturbed by oil and gas development, and the Bonanza Power Plant. Wildlife habitat is predominantly sagebrush and shrub/shrub steppe. Siting Area E would be located in pronghorn crucial year-long habitat and fawning habitat; but would not impact elk, mule deer, Rocky Mountain bighorn sheep or moose populations in Utah.

Environmental Consequences

The estimated area of disturbance (in acres) to pronghorn crucial year-long and fawning habitat from the Bonanza series compensation station is included in the disturbance analysis for Alternative COUT-C (Tables 3-94 and 3-95). If the series compensation station is constructed in pronghorn habitats in Siting Area E, habitat use could be temporarily affected during the construction period. After the application of Selective Mitigation Measure 12 (seasonal and spatial restrictions) on construction and maintenance activities during times that pronghorn use specific seasonal habitats, impacts would be limited to minor loss of forage in seasonal habitat areas, a potential for introduction or spread of weeds, and an increase in human use and activity in these habitats. However, the effects from the Bonanza Series Compensation

Station would be limited to loss of forage resources in the site, and are not anticipated to adversely influence local pronghorn populations in Utah.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.8 Special Status Wildlife

3.2.8.1 Introduction and Regulatory Framework

This section addresses potential impacts on special status wildlife from the No Action Alternative and other alternative routes, considered for the Project.

Special status species include species listed as threatened, endangered, or candidates for listing under the ESA; species listed as sensitive by the USFS, BLM, or states affected by the Project; and species listed as threatened or endangered by states affected by the Project. Unless a species also is assigned one of the designations described above, USFS MIS are addressed in Section 3.2.7 and not included in this special status wildlife section. Also, special status plants (Section 3.2.6) and fish and aquatic resources (Section 3.2.10) are addressed separately in this document.

3.2.8.1.1 Regulatory Framework

Implementation of the Project must be consistent with the statutes, regulations, plans, programs, and policies of affiliated tribes, federal agencies, and state and local governments.

Federal

- The ESA (16 U.S.C. 1531 to 1544), as amended, provides broad protection for species of fish, wildlife, and plants listed as threatened or endangered by the FWS. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. All federal agencies in consultation with and with the assistance of the FWS, also must use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. All federal agencies, in consultation with, and with the assistance of, the FWS must ensure any action authorized, funded, or carried out by federal agency is not likely to jeopardize the continued existence of an endangered, threatened, or proposed listed species or result in destruction or adverse modification of a critical habitat of a species. Agencies are required to use the best scientific and commercial data available to fulfill this charge.
- The MTBA of 1918 (16 U.S.C. 703-712) provides that it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess any migratory bird, part, nest, egg or product, manufactured or not.
- The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) prohibits the taking or possession or any commerce of bald or golden eagles. The definition of take includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.
- The BLM UT-IM-2010-071 identifies management actions necessary at some sites to ensure environmentally responsible exploration, authorization, leasing, and development of renewable

and nonrenewable energy resources in the ranges of the Gunnison sage-grouse and greater sage-grouse.

- The BLM WO-IM 2012-043 provides interim conservation policies and procedures to the BLM field officials to be applied to ongoing and proposed authorizations and activities that affect the greater sage-grouse (*Centrocerus urophasianus*) and its habitat while the BLM develops and decides how to best incorporate long-term conservation measures into applicable land-use plans.

  The RODs for the Wyoming, Northwest Colorado, and Utah Greater Sage-grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statements are anticipated to be released in 2015. The plan amendments are expected to incorporate additional conservation measures to conserve, enhance, and/or restore greater sage-grouse habitat.

- The BLM WY-IM 2013-005 provides guidance for migratory bird conservation policy on Wyoming BLM-administered public lands including the federal mineral estate.

- BLM Manual 6840 provides BLM's special status species management policy and guidance for the conservation of special status species and their habitats. Under this policy, special status species include animal and plant species listed as threatened or endangered, proposed for listing, or candidates for listing under the provisions of the ESA; those listed as sensitive species by a state; and those listed by a BLM State Director as sensitive. The objective of this policy is to ensure actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, under provisions of the ESA.

- The Platte River Recovery Implementation Program, established in 1997, implements actions designed to assist in the conservation and recovery of the target species and their associated habitats along the central and lower Platte River in Nebraska through a basin-wide cooperative approach agreed to by the states of Wyoming, Nebraska, and Colorado, as well as the USDI. The Platte River Recovery Implementation Program addresses the adverse impacts of existing and certain new water-related activities on the Platte River target species and associated habitats and provides ESA compliance for effects on the target species.

- Interim conservation recommendations were provided in October 2012 for greater sage-grouse and greater sage-grouse habitat in USFS Regions 1, 2, and 4. The USFS is engaged in a planning process to determine whether to amend 20 LRMPs to incorporate sage-grouse conservation measures with a target decision date of September 2014. The intent of these interim recommendations is to promote conservation of sustainable sage-grouse populations and their habitats while not limiting future options before the plan amendment process can be completed.

- BLM-WY Sage-grouse IM 2012-019 provides guidance to Wyoming BLM field offices on sage-grouse habitat management for proposed activities and resource management planning. It is the policy of Wyoming BLM to manage sage-grouse seasonal habitats and maintain habitat

  connectivity to support population objectives set by the WGFD. The ROD for the Wyoming Greater Sage-grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statement is anticipated to be released in 2015. The plan amendments are expected to incorporate additional conservation measures to conserve, enhance, and/or restore greater sage-grouse habitat.

- The CUP Act of 1992 (P.L. 102-575), which included authorization of the URMCC as an Executive branch agency of the federal government. The Act set terms and conditions for completing the CUP, which diverts, stores, and delivers large quantities of water from numerous Utah rivers. The URMCC is responsible for designing, funding, and implementing projects to offset the impacts on fish, wildlife, and related recreation resources caused by CUP and other federal reclamation projects in Utah. Lands owned and managed by the URMCC for CUP mitigation commitments are located in the Project area.

- BLM RMPs, Management Framework Plans for Wyoming, including Rawlins (2008) Field Office; for Colorado, including White River (1997, as amended), Little Snake (2011, as amended), and Grand Junction (2015); for Utah, including Richfield (2008), Fillmore (1987), Moab (2008), Price (2008) and Vernal (2008) Field Offices, and Salt Lake District (1990), specify regulations and goals for management of BLM-administered land and set restrictions to protect fish and wildlife and the habitats on which they depend. Many of these documents also describe the locations and approximate quantities of known noxious weed species in the jurisdictional boundaries of the field offices.
- National Park Service Organic Act, passed in 1916 (16 U.S.C. 1), established the National Park Service as an agency under the direction of the Secretary of the Interior with the stated purpose of promoting use of national park lands while protecting them from impairment. Specifically, the Act declares that the National Park Service has a dual mission, both to conserve park resources and provide for their use and enjoyment "in such a manner and by such means as will leave them unimpaired" for future generations (16 U.S.C. 1).
- NPS Management Policies 2006 sets the framework and provides direction for all management decisions relating to national park lands. This document states the NPS "will use all available authorities to protect lands and resources within units of the national park system." NPS personnel are required to be knowledgeable about and adhere to laws, regulations, and policies pertinent to NPS management included in this document.
- NPS Director's Order 12 (DO-12 and Handbook; 66 FR 7507) describes the NEPA process and describes the responsibility of the NPS regarding participation in or coordination of NEPA procedures for actions occurring on NPS land. This order outlines the NPS's requirement of affirmatively stating whether or not impairment [as defined by the Organic Act and the 2006 Management Policies document] to park resources would result from a proposed action and provides guidelines for assessing intensity of impacts.

State

Wyoming

- Wyoming Sage-grouse Local Working Groups provide recommendations for two conservation areas that could be crossed by the Project (from east to west), Bates Hole/Shirley Basin and South-central. These Working Groups have developed a Conservation Plan detailing the natural history, threats, and mitigation measures for sage-grouse in each conservation plan area and guidelines for any Project activities occurring in the area.
- Wyoming Executive Order 2011-5 (Greater Sage-Grouse Core Area Protection) outlines the management of greater sage-grouse including the designation of Core Population Areas in the state of Wyoming. This Executive Order is currently under revision, which may result in changes to core area, winter habitat, or connectivity boundaries.
- The Wyoming SWAP was published in 2005 and revised in 2010. The Plan is a coordinated, comprehensive conservation strategy designed to maintain the health and diversity of wildlife, including species with low and declining populations in the state of Wyoming.
- Wyoming State Code Section 23-1-101 defines wildlife as all wild mammals, birds, fish, amphibians, reptiles, crustaceans and mollusks, and wild bison designated by the Wyoming Game and Fish Commission and the Wyoming Livestock Board.
- Wyoming State Code Section 23-1-103 states all wildlife is the property of the State of Wyoming; and directs the control, propagation, management, protection, and regulation of wildlife in the state.

- Wyoming State Code Section 23-3-108 states it is a violation to take or intentionally destroy the nest or eggs of any non-predacious bird in Wyoming.
- Wyoming State Code Section 23-3-101 prohibits the take of eagles.
- Wyoming State Code Section 23-3-103 prohibits the take of any furbearing animal or game bird without the appropriate license in Wyoming.

Colorado

- The Colorado SWAP published in 2006 is a comprehensive management strategy developed by CDOW and the State of Colorado to conserve native species populations and habitats and prevent additional federal listings.
- Colorado State Code Statute 33-2-101 provides the State's intent to protect wildlife in Colorado under the Nongame, Endangered, or Threatened Species Conservation Act.
- Colorado State Code Statute 33-2-104 regulates the take, possession, transportation, exportation, processing, sale or offering for sale, or shipment of nongame wildlife as may be deemed necessary to manage nongame species in Colorado.
- Colorado Sage-grouse Local Working Groups provide recommendations for two conservation areas that could be crossed by the Project (from east to west): Northwest Colorado and Piceance/Parachute/Roan Creek. These Working Groups have developed a Conservation Plan detailing the natural history, threats, and mitigation measures for sage-grouse in each conservation plan area and conservation guidelines for any project activities occurring in the area.

Utah

- UAC R657-48 directs the UDWR to maintain a Utah Sensitive Species List that identifies plant and animal species (1) as listed, or candidates for listing, pursuant to the ESA; (2) for which a conservation agreement is in place; or (3) whose population viability is threatened in Utah (i.e., wildlife species of concern). Timely and appropriate conservation actions implemented on behalf of species listed on the Utah Sensitive Species List will preclude the need to list these species under the provisions of the federal ESA.
- The Utah SWAP of 2005 is a comprehensive management plan designed to conserve native species populations and habitats in Utah and prevent the need for additional federal listings.
- Utah State Code Section 23-14-1 directs the UDWR to protect, propagate, manage, conserve, and distribute protected wildlife throughout Utah. This statute also authorizes UDWR to identify and delineate crucial seasonal wildlife habitats.
- Utah PIF Avian Conservation Strategy, Version 2.0, prioritizes avian species and their habitats and sets objectives designed to determine which species are most in need of immediate and continuing conservation effort. The other purpose of the strategy is to recommend appropriate conservation actions required to accomplish stated objectives.
- The *Conservation Plan for Greater Sage-grouse in Utah* was approved by the Governor in April 2013. The plan establishes incentive-based conservation programs for conservation of sage-grouse on private, local government, and SITLA land and regulatory programs on other state and federally managed lands. The Conservation Plan also establishes sage-grouse management areas and implements specific management protocols in these areas.
- Executive Order 2015/001 directs Utah state agencies to coordinate implementation of the *Conservation Plan for Greater Sage-grouse in Utah* with the Utah Public Lands Policy Coordination Office (PLPCO). The Executive Order also addresses coordination with UDWR and

prioritization of State activities to maintain, improve, and enhance greater sage-grouse habitat within designated sage-grouse management areas.

- Utah Sage-grouse Local Working Groups provide recommendations for three conservation areas that could be crossed by the Project: Uinta Basin, Strawberry Valley, and Castle Country. Each of these Working Groups have developed a Conservation Plan detailing the natural history, threats, and mitigation measures for sage-grouse in each conservation plan area and conservation guidelines for any activities occurring in the area.

3.2.8.2 Issues Identified for Analysis

Issues concerning potential impacts of Project construction, operation, and maintenance on special status wildlife were identified through coordination and cooperation with BLM, USFS, and FWS resource specialists, state wildlife agencies, conservation groups and trusts, and members of the public during the scoping process. Issues considered for analyses in the EIS are summarized in Table 3-96. Key issues raised by the public and the agencies during scoping regarding potential impacts on federally listed and BLM-, USFS- and state-sensitive wildlife for which comparable data were available for all alternative routes were selected for use in the comparison of alternative routes.

TABLE 3-96
SPECIAL STATUS WILDLIFE ISSUES IDENTIFIED FOR ANALYSIS

Issue Identified	Analysis Considerations
Birds	
Impacts on greater sage-grouse: ▪ Increased predation pressure by raptors ▪ Modification/loss of sagebrush habitat ▪ Disruption of breeding (lek) activities and seasonal movements ▪ Contribution to impacts identified in the U.S. Fish and Wildlife Service 5-factor listing analysis (75 Federal Register 13910).	▪ Extent of mapped sage-grouse core areas and priority habitats, general habitats, and habitats within 4 miles of known leks potentially disturbed by the Project ▪ Proximity of the Project to known leks ▪ Number of sage-grouse that attend affected leks ▪ Quality and importance of sage-grouse habitats crossed for maintaining local populations
Impacts on habitat for raptors, migratory, wetland and waterfowl birds, including whooping crane, southwestern willow flycatcher, mountain plover, and western yellow-billed cuckoo	▪ Extent of habitat potentially affected by the Project (southwestern willow flycatcher, mountain plover, and yellow-billed cuckoo) ▪ Proximity of the Project to known nest sites (special status raptors) ▪ Identification of alternative routes that could require consultation under the Platte River Recovery Implementation program due to downstream effects of water use from the Platte River drainage on designated habitat
Impacts on upland game bird habitats including Columbia sharp-tailed grouse	▪ Qualitative assessment of impacts on potentially suitable Columbia sharp-tailed grouse habitat in the Project area ▪ Extent of habitat potentially affected by the Project
Mammals	
Impacts on special status mammal species including black-footed ferret, Wyoming pocket gopher, pygmy rabbit, kit fox, and white-tailed prairie dog	▪ Extent of habitat potentially affected by the Project (black-footed ferret, pygmy rabbit, and white-tailed prairie dog) ▪ Qualitative assessment of impacts on potentially suitable special status mammal habitats in the Project area (Wyoming pocket gopher and kit fox)
Impacts on special status reptiles including northern tree lizard and Great Basin gopher snake	▪ Qualitative assessment of impacts on potentially suitable special status reptile habitats in the Project area

3.2.8.3 Regional Setting

Ecoregions potentially crossed by the Project and general ecological conditions in the Project area are described in Section 3.2.5. The regional setting and ecological mechanisms that affect special status wildlife, Including population dynamics and species dispersal, are similar to those described in Section 3.2.7.

Additionally, maintenance of vegetation communities that occur in the Project area, which are identified as priority habitat types for conservation actions in the SWAPs for Wyoming (aspen, mixed mountain shrub, sagebrush, grassland, riparian, and wetlands), Colorado (forestlands, grasslands, riparian/wetlands, and shrublands), and Utah (riparian, wetlands, shrub-steppe, mountain shrub, water, wet meadows, grasslands, and aspen), is critical to preservation of federally listed and USFS-, BLM-, and state-sensitive wildlife.

Special status wildlife species include those species either listed or proposed for listing under the ESA, identified as sensitive by the USFS Regional Forester, and/or species designated as BLM-sensitive by a state director. Determining factors in special status wildlife designation include population demographics; species range-wide distribution; quality, quantity, and distribution of available habitat, threats, and impacts on the species and associated habitat; and existence of recovery or conservation strategies or other formalized conservation planning efforts. Special status wildlife species are typically limited to a specialized habitat type or have a narrow distribution and have incurred habitat loss and/or population declines with the potential for reoccurring threats to population viability and associated habitats. For example, riparian habitats are limited in extent in the alternative route study corridors and two of the riparian/wetland-obligate special status birds analyzed in this EIS (southwestern willow flycatcher and yellow-billed cuckoo) require continuous riparian corridors containing the multi-storied canopy required for nesting yellow-billed cuckoos (Corman and Wise-Gervais 2005), as well as the necessary minimum patch sizes of habitats for breeding/foraging suitability (Ehrlich et al. 1988). Therefore, any fragmentation to the currently limited contiguous riparian corridors could adversely affect yellow-billed cuckoo and southwestern willow flycatchers in the Project area.

3.2.8.4 Study Methodology

3.2.8.4.1 Inventory

Special status species include species listed as threatened, endangered, or candidates for listing under the ESA;, species listed as sensitive by the USFS and BLM; and species assigned a special status by the state of Wyoming, Colorado, or Utah. Lists of special status species that may occur in the Project area were collected from the FWS (county level), BLM (state level), USFS (forest level), and states that would be crossed by the Project (state and county level). Specifically, the following lists of special status species were collected:

Federal Threatened, Endangered, and Candidate Species

- Wyoming – Carbon and Sweetwater counties (FWS 2014a)
- Colorado – Garfield, Mesa, Moffatt, and Rio Blanco counties (FWS 2014b)
- Utah – Carbon, Duchesne, Emery, Grand, Juab, Uintah, Utah, and Wasatch counties (FWS 2014c)

State Protected Species

- Wyoming
  - Terrestrial special status wildlife – Wyoming Game and Fish Nongame Species of Special Concern. January 2005 (WGFD 2010b)

- Special status birds – Wyoming Game and Fish Nongame Species of Special Concern. January 2005 (WGFD 2010b)

- Colorado
  - List of animals – Colorado Threatened & Endangered List. July 7, 2010 (CPW 2011a)
- Utah
  - List of animals – Utah's State Listed Species by County. March 29, 2011 (UDWR 2011a)

BLM Statewide Sensitive Species

- Wyoming
  - BLM Wyoming Sensitive Species Policy and List by Field Office (Rawlins). (BLM 2010b)
- Colorado
  - Colorado BLM State Director's Sensitive Species List by Field Office (Little Snake, White River, and Grand Junction). (BLM 2009c)
- Utah
  - Terrestrial special status wildlife – Utah BLM Sensitive Fish and Wildlife Species List. (BLM 2012a)
  - Special status plants – Interim BLM Sensitive Plant List - from state office. (BLM 2011d)

U.S. Forest Service Region 4 Sensitive Species

- Region 4 – Intermountain Region (R4) Threatened, Endangered, Proposed, and Sensitive Species Known and Suspected Distribution by Forest (USFS 2013a)

Distribution and occurrence data (Table 3-97) for special status wildlife were collected from BLM, FWS, and USFS and from the Wyoming, Colorado, and Utah state heritage programs to identify special status species likely to occur in the Project area. In addition to these data, agency personnel were consulted to identify specific species' ranges in the Project area and relevant scientific literature, agency publications, and online databases (e.g., NatureServe [2014], WWF Wildfinder [2006], and IUCN Redlist [n.d.]) were reviewed.

The geographic scope of data collected for special status wildlife varied based on the habitat requirements of individual species as well as the availability of potentially suitable habitat for each species in the Project area. For most special status species, data were collected for the 2-mile-wide alternative route study corridors (i.e., 1 mile on either side of the reference centerline) for each alternative transmission line route. The potential for the occurrence of special status species in areas adjacent to the alternative route study corridors was considered to identify potential impacts of the Project on animal activity patterns and seasonal migrations. For wide-ranging species (e.g., large mammalian predators and big game species) and species with habitat that could be affected indirectly (e.g., effects of water use from the Platte River drainage on whooping crane habitat), the data were collected for use in the analysis from the predicted species distribution (IUCN n.d.; Meaney and Beauvais 2004) or potential habitat of the species in the Project area in Wyoming, Colorado and Utah.

Using the information collected, the full list of special status species was refined to include only species likely to occur in the Project area and is presented in Appendix J, Table J-10. Detailed species descriptions, life history, status, and occurrence information for each special status species that may occur in the Project area were compiled and are included in Appendix J. This information provides relevant natural history and species distribution information used in the analysis of direct, indirect, and cumulative effects on each special status species.

Geospatial data delineating known habitats including nest sites, lek locations, and other important potential habitats for special status species likely to occur in the Project area were obtained from the

agencies and used to quantify potential impacts on species and compare the types of potential effects of the alternative routes. Spatial data were limited or unavailable for many special status species. To fill some data gaps identified and provide a basis for comparing the types of potential effects of the alternative routes, habitat modeling was conducted for some key species in the alternative route study corridors (EPG 2013). The best available spatial data for each special status wildlife habitat collected and used in the analysis of potential effects are identified in Table 3-97. Species specific impacts for federally listed, USFS MIS, and USFS-sensitive species occurring on the Ashley, Manti-La Sal, and Uinta National Forests are analyzed in the Special Status Wildlife Report (USFS 2015b).

TABLE 3-97
SPECIAL STATUS WILDLIFE SPECIES SPATIAL INFORMATION USED IN IMPACT ANALYSIS

Common Name	Scientific Name	Type and Source of Spatial Data
Birds		
Bald eagle	*Haliaeetus leucocephalus*	Winter roost sites (Bureau of Land Management [BLM] 2011e; CPW 2012f) Nest site locations (BLM 2009d, 2011f; Colorado Natural Heritage Program [CNHP] 2011; CPW 2012g; Utah Natural Heritage Program [UNHP] 2012; Wyoming Natural Diversity Database [WYNDD] 2011)
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	Lek and winter range locations (CPW 2011b; Wyoming Game and Fish Department [WGFD 2009a])
Golden eagle	*Aquila chrysaetos*	Nest locations (BLM 2009d, 2011f; AECOM 2012; UNHP 2012)
Greater sage-grouse[1]	*Centrocercus urophasianus*	Overall distribution (CPW 2012h) Lek locations and counts (CPW 2014b; Utah Division of Wildlife Resources [UDWR] 2014a; WGFD 2013) Core habitat areas (WGFD 2010c) Preliminary priority and preliminary general habitats (CPW 2012h) Occupied, winter, and brood-rearing habitats (UDWR 2012b and c) Lek count data Utah (UDWR 2014a), Colorado (CPW 2014b), and Wyoming (WGFD 2012) Priority Areas for Conservation (BLM 2013a)
Ferruginous hawk	*Buteo regalis*	Nest site locations (BLM 2009d, 2011f; CNHP 2011; UNHP 2012; WYNDD 2011)
Northern goshawk	*Accipter gentilis*	Nest site locations (BLM 2009d, 2011f; CNHP 2011; UNHP 2012; U.S. Forest Service [USFS] 2011b, c; WYNDD 2011) Post-fledging area locations (USFS 2011d)
Mexican spotted owl	*Strix occidentalis lucida*	Habitat modeled in alternative route study corridors (Environmental Planning Group [EPG] 2013)
Mountain plover	*Charadrius montanus*	Habitat modeled in alternative route study corridors (EPG 2013)
Peregrine falcon	*Falco peregrinus anatum*	Nest site locations (BLM 2009d, 2011f; CNHP 2011; UNHP 2012; WYNDD 2011)
Southwestern willow flycatcher	*Empidonax traillii extimus*	Habitat modeled in alternative route study corridors (EPG 2012)
Swainson's hawk	*Buteo swainsoni*	Nest site locations (BLM 2009d, 2011f; 4 UNHP 2012)

TABLE 3-97 SPECIAL STATUS WILDLIFE SPECIES SPATIAL INFORMATION USED IN IMPACT ANALYSIS		
Common Name	**Scientific Name**	**Type and Source of Spatial Data**
Yellow-billed cuckoo	*Coccyzus americanus*	Habitat modeled in alternative route study corridors (EPG 2013) Proposed critical habitat (79 FR (158): 48548-48652)
Mammals		
Black-footed ferret	*Mustella nigripes*	Black footed-ferret management areas (BLM 2012b; CPW 2012i) Reintroduction sites (BLM 2012c; FWS 2011c)
Pygmy rabbit	*Brachylagus idahoensis*	Habitat modeled in alternative route study corridors (EPG 2013)
White-tailed prairie dog	*Cynomys leucurus*	Habitat modeled in alternative route study corridors (EPG 2013)
NOTE: [1]For the purpose of this analysis, greater sage-grouse occupied habitat in Utah (UDWR 2012d) was considered to be synonymous with priority habitat.		

3.2.8.4.2 Impact Assessment and Mitigation Planning

Key issues involving potential impacts on federally listed and BLM-, USFS- and state-sensitive wildlife were raised by the public and the agencies during the scoping process. Where available, comparable spatial data along all alternative routes for special status wildlife resources identified for analysis during scoping were selected for use in the analysis to support an interdisciplinary comparison of alternative routes. The methodology used to assess potential impacts on special status wildlife resources in the interdisciplinary comparison of alternative routes is presented in Section 2.7.1 (refer to subheading Effects Analysis). In general, the analysis included the following:

- Identifying the types of potential effects on special status wildlife that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities. As described in Appendix B, project construction activities include preconstruction engineering surveys, geotechnical investigations, construction of access roads and structure pads, clearing of work areas, installation of foundations and structures, and site reclamation. Project operation and maintenance activities include inspection and repair of transmission lines, substations, and support systems, access road and work area repair, and vegetation management.
- Assess the level of initial impacts on special status wildlife present in the alternative route study corridors.
- Identify appropriate selective mitigation measures for minimizing some potential adverse effects and determining specific areas where mitigation measures should be applied
- Disclose the level of potential residual impacts on biological resources (i.e., impacts anticipated after application of selective mitigation measures).

Design features of the Proposed Action for environmental protection (Table 2-8) were considered when assessing both initial and residual impacts on all resources.

Supplemental analyses were necessary to address some of the issues raised by the public and agencies during scoping. These analyses were performed using quantitative methods where special status wildlife resource spatial data were available to evaluate potential impacts of the Project and meet the requirements of relevant law, regulation, or policy. The methods for these supplemental analyses are discussed in the Effects Analysis section.

Types of Potential Effects

Direct and indirect effects of the Project on special status species would be similar to effects on other wildlife species described in Section 3.2.7. In addition to the effects on non-special status wildlife groups, specific direct and indirect effects relevant to special status wildlife species are discussed below.

The BLM performed an expanded analysis of the potential impacts on greater sage-grouse relative to other threatened, endangered, and candidate species in response to comments received during scoping to maintain consistency with analysis of impacts on the species performed for other proposed transmission line projects to address all requirements of the Framework for Sage-grouse Impacts Analysis for the Project (Appendix K), to demonstrate compliance with BLM WO IM 2012-043 and other agency sage-grouse policies, and to provide additional information for the public, cooperating agencies, and BLM regarding potential effects of the Project on sage-grouse while the BLM, USFS, and affected states revise their sage-grouse management policies. The analyses in Chapters 3 and 4 address direct and indirect impacts on greater sage-grouse and potential loss of sage-grouse that may occur as a result of the Project, including impacts on sage-grouse populations resulting from transmission lines identified in the FWS' *12-Month Findings for Petitions to List the Greater Sage-grouse as Threatened or Endangered* (75 FR 13910). Documentation of ongoing planning for voluntary mitigation offered by the Applicant to offset effects identified in the analysis, including off-site mitigation is included in Appendix K.

Similar to other wildlife species described in Section 3.2.7, the types of potential effects for some special status wildlife resources will vary depending on the type of transmission line tower selected. Potential effects on birds, including sage-grouse, associated with different transmission line tower types are described below. For other special status species, this analysis assumes the types of potential effects would be the same regardless of the transmission line tower type selected. The amount of surface disturbance required to construct all of the transmission line towers described in Section 2.1 is assumed to be identical.

Birds

Special Status Passerine and Waterfowl Birds

Direct Effects

Direct effects on special status passerine and waterfowl birds—including but not limited to American white pelican, black-crowned night heron, long-billed curlew, and Clark's grebe (refer to Appendix J, Section J.6.2 and Table J-10)—that may occur as a result of construction, operation, and maintenance of the Project include potential for bird mortality and injury, loss, degradation, and fragmentation of foraging, nesting, and sheltering habitat and potential disruptions of breeding activities. These effects are described in detail in Section 3.2.9. The types of direct effects on special status passerine and waterfowl birds may vary depending on the type of transmission line tower selected. Risk of mortality and injury to special status passerine and waterfowl birds from in-flight collision may be greater in locations where guyed-V and guyed-delta transmission line towers are used (refer to Section 2.1 for a description of proposed transmission line towers). These effects are described in detail in Section 3.2.9.

Indirect Effects

Indirect effects on passerine and waterfowl birds that may occur as a result of construction, operation, and maintenance of the Project, including potential for alternations to plant community composition, fire regimes, and habitat microclimate quantities and quality, are described in Section 3.2.9. Indirect effects on birds could result in a reduction in breeding success and survival of individuals, and a potential reduction in population size of species in the Project area (Riffell et al. 1996).

The special status waterfowl species, the whooping crane, is a Platte River target conservation species with ESA-designated critical habitat (Platte River Recovery Implementation Program 2008) downstream of Project activities. Water withdrawal from the Platte River system during Project construction and maintenance activities may indirectly affect the whooping crane and designated whooping crane critical habitat along the Platte River. Although neither species inhabit the Project area, the least tern and the piping plover are known to occur along the Platte River and may be affected indirectly through Project-related water use resulting in drawdown of water downstream in the Platte River.

Special Status Raptors and Migratory Birds

Direct Effects

The types of direct effects on special status raptors—including but not limited to ferruginous hawk, golden eagle, and northern goshawk (refer to Appendix J, Section J.6.2 and Table J-10)—and migratory birds would be the same as those described for raptors in Section 3.2.9.

Indirect Effects

The types of indirect effects on special status raptors and migratory birds would be the same as those described for raptors in Section 3.2.9.

Southwestern Willow Flycatcher and Yellow-Billed Cuckoo

Direct Effects

The primary direct effects of the Project (e.g., building new and improving existing access roads) on the southwestern willow flycatcher and yellow-billed cuckoo would include disturbance and interruption of breeding, nesting, and brood-rearing and the direct loss, degradation (removal or loss of necessary riparian vegetation for foraging and nesting), and fragmentation of the limited riparian habitat suitable for the species available in the alternative route study corridors.

Disturbance and interruption of breeding, nesting, and brood-rearing as a result of increased human presence and noise associated with construction activities can indirectly reduce fitness, survival, and reproductive performance of some individuals (Riffell et al. 1996). Human disturbance and increased noise levels near active nest sites can result in nest abandonment, interference of nestling feeding, increased predation, and decreased nestling and egg survival due to dessication and exposure to lethal temperatures (Richardson and Miller 1997, Romin and Muck 2002).

Alteration of riparian habitat through the clearing of vegetation above 5 feet in height (to maintain a safe conductor distance, clearing of tower sites, and access roads) could result in fragmentation of suitable riparian habitats, as well as influencing whether habitats maintain a minimum effective territory size and the necessary connectivity required to support southwestern willow flycatcher populations (Sogge et al. 1997).

Disturbance through clearing of vegetation above 5 feet in height could decrease the extent of suitable nesting riparian habitat. A decrease in the available riparian habitats containing the multi-storied canopy required for nesting yellow-billed cuckoos specifically (Corman and Wise-Gervais 2005), potentially could adversely affect yellow-billed cuckoo populations and proposed critical habitat in the Project area.

In addition to direct effects on habitat, the risk of mortality and injury to southwestern willow flycatcher and yellow-billed cuckoo from in-flight collision may be greater in locations where guyed-V and guyed-delta transmission line towers are used (refer to Section 2.3 for a description of proposed transmission line towers). While the risk of collision is generally low as these species do not typically fly at the low

altitudes that would put them at the height of guy wires during flight, collision risk may be increased in areas where the lines are located between two habitat types that birds frequently fly between at low altitudes (i.e., foraging and roosting sites) (APLIC 2012).

Indirect Effects

Indirect effects of the Project on the yellow-billed cuckoo and southwestern willow flycatcher include potential invasive plant introduction and/or spread in wetland/riparian communities resulting in a fewer native wetland and riparian plants and reduced quality nesting and brood-rearing habitat. For example, inadequate vegetation density or canopy height to provide nesting structure as well as maintain relative humidity required to support the invertebrate prey-base necessary for foraging juveniles (Floyd et al. 2007) could result from the introduction and/or spread of invasive plants.

Special Status Upland Game Birds

Greater Sage-grouse

The methods used to identify and analyze potential effects on greater sage-grouse and its habitat meet BLM and cooperating agency requirements for sage-grouse impact analysis and are consistent with the Framework for Sage-grouse Impacts Analysis for the Project (Appendix K). The information contained in the analysis will be used to evaluate and disclose the Project's potential effects on sage-grouse, compliance with applicable sage-grouse policies, and identify effects for which the Applicant may provide commitments through a voluntary mitigation plan to (1) avoid or minimize the severity of specific effects, or (2) to provide off-site compensatory mitigation for effects that cannot be effectively avoided or mitigated on-site.

The methods and analysis used to identify and analyze the potential effects of the Project on sage-grouse were completed prior to a decision on the proposed BLM RMP and USFS LRMP sage-grouse amendments in Wyoming, Colorado, and Utah (BLM and USFS 2015 a, b, c). If approved, the BLM RMP and USFS LRMP amendments would adopt conservation measures to protect greater sage-grouse and its habitat on BLM- and USFS-administered lands and would restrict the type and location of activities that could be authorized in sage-grouse habitat. Management actions in the proposed BLM RMP and USFS LRMP amendments applicable to the authorization of rights-of-way for high-voltage transmission lines generally include avoidance of designated sage-grouse habitats, avoidance of roads and tall structures within specified buffer distances from active leks, adherence to disturbance caps, seasonal restrictions, mitigation for habitat loss and degradation that results in a net conservation gain, and other stipulations.

The Project was designed to avoid, minimize, and compensate for adverse effects on sage-grouse and will conform to applicable BLM RMPs and USFS LRMPs in place at the time the Record of Decision is signed. Actions taken to avoid, minimize, and compensate for adverse effects on sage-grouse have included eliminating from detailed analysis alternative routes that would have substantially greater effects on sage-grouse or sage-grouse habitat compared to other alternative routes considered; developing local route variations that would avoid important sage-grouse habitats; adjusting remaining alternative routes to locate them outside of designated sage-grouse habitat or in habitats of lower value to sage-grouse; developing onsite mitigation measures that could be used to reduce impacts on sage-grouse and sage-grouse habitat; and working with the Applicant to develop compensatory mitigation to be included in a Sage-grouse Mitigation Plan. The development of the Sage-grouse Mitigation Plan would include a Habitat Equivalency Analysis. These actions are described in detail in Appendix K.

The conservation measures, avoidance criteria, and mitigation strategies included in the proposed BLM RMP and USFS LRMP sage-grouse amendments were developed concurrently with the preparation of the

EIS for the Project. The proposed BLM RMP and USFS LRMP sage-grouse amendments and the EIS for the Project incorporate the same mitigation hierarchy objectives of avoiding, minimizing, and compensating for impacts on sage-grouse, consistent with BLM's interim policy on regional mitigation – (IM No. 2013-142, Interim Policy, Draft - Regional Mitigation Manual Section – 1794) (June 13, 2013), using the best available information. Due to overlapping timelines and objectives for the proposed BLM RMP and USFS LRMP sage-grouse amendments and the Project, any BLM RMP and USFS LRMP amendments will not apply to portions of the Project in Wyoming and Colorado and in areas of Utah that are colocated with the proposed TransWest Express Transmission Line Project. In this EIS, however, the BLM has analyzed a similar suite of mitigation measures for the greater sage-grouse and its habitat (refer to Section 3.2.8.4, Mitigation Planning and Effectiveness, and Appendix K) and will consider the implementation of those mitigation measures in the ROD for this Project, with a goal of achieving a net conservation benefit for the greater sage-grouse and its habitat. In addition, the Applicant has committed to comply with seasonal restrictions included in the proposed BLM RMP and USFS LRMP amendments and implement additional site-specific mitigation measures (refer to Appendix K).

The direct and indirect effects analysis for sage-grouse was developed using a step-wise process. First, stressors and types of potential effects on sage-grouse were characterized for each Project activity and/or phase of the Project identified in the Applicant's Project Description (Section 2.3 and Appendix J). The characterization of stressors and effects was guided by concerns raised by agency biologists participating in the analysis and available scientific literature. The stressors and effects identified for each activity were organized in table format (Tables 3-98 and 3-99) to facilitate review. Second, each potential effect on sage-grouse was classified using the five factors (identified in Section 4(a)(1) of the ESA) on which FWS makes listing decisions.

TABLE 3-98
TYPES OF POTENTIAL DIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
Construction		
▪ Preconstruction activities • Engineering surveys • Geotechnical investigations	▪ Moving equipment ▪ Moving vehicles ▪ Human presence ▪ Vehicle/equipment noise	▪ Mortalities due to collisions with moving equipment/vehicles ▪ Destruction of active nests by construction equipment/vehicles ▪ Loss of sage-grouse habitat as a result of avoidance behavior ▪ Degradation of habitat quality and function ▪ Fragmentation/reduction in connectivity among sage-grouse habitats ▪ Interruption of sage-grouse movement among populations (restricting gene-flow) ▪ Decreased nest initiation/success resulting from disruption of seasonal movement, brooding, wintering, or breeding (lekking) activities ▪ Decreased population survival and growth rates resulting from disruption to nesting females due to increased human presence and Project activities ▪ Increased susceptibility of sage-grouse to disease and predation resulting from physiological stress induced by noise and human presence

TABLE 3-98
TYPES OF POTENTIAL DIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
▪ Access road improvement and construction • Vegetation clearing • Road building (grading, cut, and fill) • Temporary access (drive and crush)	▪ Moving equipment ▪ Moving vehicles ▪ Removal of vegetation (sage-steppe habitat) ▪ Human presence ▪ Vehicle/equipment noise	▪ Mortalities due to collisions with moving equipment/vehicles ▪ Destruction of active nests by construction equipment/vehicles ▪ Loss of sage-grouse habitat through direct habitat conversion and as a result of avoidance behavior ▪ Degradation of habitat quality and function ▪ Fragmentation/reduction in connectivity among sage-grouse habitats ▪ Interruption of sage-grouse movement among populations (restricting gene-flow) ▪ Decreased nest initiation/success resulting from disruption of seasonal movement, brooding, wintering, or breeding (lekking) activities ▪ Decreased population survival and growth rates resulting from disruption to nesting females due to increased human presence and Project activities ▪ Increased susceptibility of sage-grouse to disease and predation resulting from physiological stress induced by noise and human presence
▪ Construction site preparation • Work site vegetation clearing and grading • Multi-purpose yards/staging areas vegetation clearing • Equipment mobilization and material staging	▪ Moving equipment ▪ Moving vehicles ▪ Removal of vegetation (sage-steppe habitat) ▪ Human presence ▪ Vehicle/equipment noise	▪ Mortalities due to collisions with moving equipment/vehicles ▪ Destruction of active nests by construction equipment/vehicles ▪ Loss of sage-grouse habitat through direct habitat conversion and as a result of avoidance behavior ▪ Degradation of habitat quality and function ▪ Fragmentation of habitat ▪ Interruption of sage-grouse movement among populations (restricting gene-flow) ▪ Alteration of seasonal movements and breeding, brooding, or wintering bird behavior ▪ Increased susceptibility of sage-grouse to disease and predation resulting from physiological stress induced by noise and human presence

TABLE 3-98
TYPES OF POTENTIAL DIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
▪ Construction of Project facilities • Foundation excavation • Tower assembly and erection • Conductor, shield wire, and fiber optic ground wire stringing • Series compensation station equipment installation • Substation equipment installation	▪ Moving equipment ▪ Moving vehicles ▪ Human presence ▪ Vehicle/equipment noise	▪ Mortalities due to collisions with moving equipment/vehicles ▪ Destruction of active nests by construction equipment/vehicles ▪ Loss of sage-grouse habitat through direct habitat conversion and as a result of avoidance behavior ▪ Degradation of habitat quality and function ▪ Fragmentation of habitat ▪ Interruption of sage-grouse movement among populations (restricting gene-flow) ▪ Alteration of seasonal movements and breeding, brooding, or wintering bird behavior ▪ Increased susceptibility of sage-grouse to disease and predation resulting from physiological stress induced by noise and human presence
▪ Cleanup and site reclamation • Equipment, material, and trash removal • Recontouring • Site reclamation (topsoil spreading and seeding)	▪ Moving equipment ▪ Moving vehicles ▪ Vehicle/equipment noise ▪ Human presence ▪ Application of herbicides	▪ Mortalities due to collisions with moving equipment/vehicles ▪ Destruction of active nests by construction equipment/vehicles ▪ Interruption of sage-grouse movement among populations (restricting gene-flow) ▪ Decreased nest initiation/success resulting from disruption of seasonal movement, brooding, wintering, or breeding (lekking) activities ▪ Decreased population survival and growth rates resulting from disruption to nesting females due to increased human presence and Project activities ▪ Increased susceptibility of sage-grouse to disease and predation resulting from physiological stress induced by noise and human presence
Operation		
▪ Routine inspections • Aerial inspections (helicopter) • Ground inspections (vehicle and pedestrian)	▪ Moving vehicles ▪ Human presence ▪ Vehicle noise	▪ Mortalities due to collisions with moving equipment/vehicles ▪ Interruption of sage-grouse movement among populations (restricting gene-flow) ▪ Alteration of seasonal movement, breeding, brooding, or wintering bird behavior

TABLE 3-98
TYPES OF POTENTIAL DIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
▪ Operation of transmission line, substations, and series compensation stations	▪ Introduction/presence of tall structures (transmission line towers) on the landscape ▪ Introduction/presence of electromagnetic fields	▪ Mortalities due to collision with transmission lines, fences, guy wires, and conductors ▪ Avoidance of occupied habitat by sage-grouse due to presence of tall structures (transmission line towers) ▪ Avoidance of occupied habitats by sage-grouse due to electromagnetic fields
Maintenance		
▪ Access road maintenance	▪ Same as access road improvement and construction and cleanup/site reclamation	▪ Same as access road improvement, construction, and cleanup/site reclamation
▪ Transmission line maintenance/equipment replacement	▪ Same as construction of Project facilities and cleanup/site reclamation	▪ Same as construction of Project facilities and cleanup/site reclamation
▪ Right-of-way vegetation maintenance • Herbicide use • Temporary access (drive and crush) • Vegetation removal (mechanical and pedestrian)	▪ Same as access road improvement, construction, and cleanup/site reclamation	▪ Same as access road improvement, construction, and cleanup/site reclamation

NOTE: [1]Any agent that causes stress to an organism or resource the organism depends on

TABLE 3-99
TYPES OF INDIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
Construction		
▪ Access road improvement and construction • Vegetation clearing • Road building (grading, cut and fill) • Temporary access (drive and crush)	▪ Introduction of roads/cleared corridors on the landscape ▪ Introduction and spread of invasive, non-native plants and noxious weeds	▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds ▪ Increased predation risk to sage-grouse from mammalian predators ▪ Alteration of sage-grouse behavioral patterns due to increased predation pressure
▪ Construction site preparation • Work site vegetation clearing and grading • Multi-purpose yards/staging areas vegetation clearing • Equipment mobilization and material staging	▪ Introduction of soil surface depressions other materials that could collect and/or retain water ▪ Introduction and spread of invasive, non-native plants and noxious weeds	▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds ▪ Increased predation risk to sage-grouse from mammalian predators ▪ Alteration of sage-grouse behavioral patterns due to increased predation pressure

TABLE 3-99
TYPES OF INDIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
▪ Construction of Project facilities • Foundation excavation • Tower assembly and erection • Conductor, shield wire, and fiber optic ground wire stringing • Series compensation station equipment installation • Substation equipment installation	▪ Introduction of hunting perches (transmission line towers) for raptors and ravens ▪ Introduction and spread of invasive, non-native plants and noxious weeds	▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds ▪ Increased predation risk to sage-grouse from raptors and ravens ▪ Alteration of sage-grouse behavioral patterns due to increased predation pressure
▪ Cleanup and site reclamation • Equipment, material, and trash removal • Recontouring • Site reclamation (topsoil spreading and seeding)	▪ Application of herbicides ▪ Introduction and spread of invasive, non-native plants and noxious weeds	▪ Reduction in sage-grouse forage, insect prey availability, and vegetation cover due to use of herbicides ▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds
Operation		
▪ Routine inspections • Aerial inspections (helicopter) • Ground inspections (vehicle and pedestrian)	▪ Introduction and spread of invasive, non-native plants and noxious weeds	▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds
▪ Operation of transmission line, substations, and series compensation stations	▪ Increased human presence (public use) in previously vehicle inaccessible areas ▪ Introduction and spread of invasive, non-native plants and noxious weeds ▪ Presence of hunting perches (transmission line towers) for raptors and ravens ▪ Presence of roads/cleared corridors on the landscape	▪ Increased predation risk to sage-grouse by mammalian predators ▪ Increased predation risk to sage-grouse from raptors and ravens ▪ Potential sage-grouse avoidance of habitat due to potential increase in raptor predation pressure ▪ Alteration of sage-grouse behavioral patterns due to increased predation pressure ▪ Disruption of sage-grouse nesting and breeding activities and sage-grouse avoidance of habitat due to vehicle noise and human presence resulting from public use of new access roads ▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds
Maintenance		
▪ Access road maintenance	▪ Same as access road improvement and construction and cleanup/site reclamation	▪ Same as access road improvement and construction and cleanup/site reclamation

TABLE 3-99
TYPES OF INDIRECT EFFECTS ON GREATER SAGE-GROUSE

Project Activity/Phase	Stressor[1]	Potential Effects
▪ Transmission line maintenance/equipment replacement	▪ Same as construction of Project facilities and cleanup/site reclamation	▪ Same as construction of Project facilities and cleanup/site reclamation
▪ Right-of-way vegetation maintenance • Herbicide use • Temporary access (drive and crush) • Vegetation removal (mechanical and pedestrian)	▪ Same as access road improvement and construction and cleanup/site reclamation	▪ Same as access road improvement and construction and cleanup/site reclamation

NOTE: [1]Any agent that causes stress to an organism or resource the organism depends on.

An additional classification (for a total of six), direct loss of sage-grouse, also was used to meet the requirements of the Framework for Sage-grouse Impacts Analysis for the Project (Appendix K). The classification of direct and indirect effects based on the six factors was organized in table format (Tables 3-100 and 3-101) to facilitate review. Finally, for each effect identified in previous steps, an evaluation of anticipated sage-grouse response and the severity of this response were performed. This evaluation (categorization of high, moderate, or low impact) was conducted using scientific literature regarding sage-grouse response to anthropogenic development and the best available information regarding the development of the Project from the Applicant.

Direct Effects

Table 3-98 identifies the potential direct impacts on sage-grouse of each Project activity and/or phase of the Project identified in the Applicant's Project Description (Section 2.3 and Appendix J).

Table 3-100 classifies each of the potential direct effects on sage-grouse identified in Table 3-98 based on the five factor analysis and threats identified in the FWS' *12-Month Findings for Petitions to List the Greater Sage-grouse as Threatened or Endangered* (75 FR 13910) under the ESA and the requirements of the Framework for Sage-grouse Impacts Analysis for the Project (Appendix K). The classification facilitates understanding of the Project's contribution to the threats to the species identified in the 12-month findings.

TABLE 3-100
IMPACT FACTORS USED TO EVALUATE THE POTENTIAL DIRECT EFFECTS ON GREATER SAGE-GROUSE ASSOCIATED WITH THE PROJECT

Factor	Potential Direct Effects
Direct loss of birds	▪ Mortality due to electrocution of sage-grouse from contact with the power line infrasture ▪ Mortality due to collisions with power line conductors, fences, or guy wires ▪ Mortality due to collisions with vehicles traveling on roads ▪ Mortality due to destruction of active nests

TABLE 3-100
IMPACT FACTORS USED TO EVALUATE THE POTENTIAL DIRECT EFFECTS ON GREATER SAGE-GROUSE ASSOCIATED WITH THE PROJECT

Factor	Potential Direct Effects
Present or threatened destruction, modification, or curtailment of habitat or range	▪ Reductions in the quality of sage-grouse habitat due to the introduction and spread of noxious weeds ▪ Loss and degradation of sage-grouse habitat quality and function ▪ Fragmentation of sage-grouse habitats (and avoidance of habitats by sage-grouse) due to the introduction of tall structures (transmission line towers), increased electromagnetic fields, and construction of new roads ▪ Disturbance to sage-grouse and disruption of breeding activities due to increased human presence and noise at lek locations ▪ Decreased nest initiation/success and lower population survival and growth rates resulting from disruption of seasonal movement, nesting, brooding, wintering, or breeding (lekking) activities ▪ Disturbance to sage-grouse during nesting, breeding, and wintering periods resulting from human presence, vehicle use, and noise during construction and maintenance ▪ Interruption and/or alternation of seasonal sage-grouse migrations and movements among populations
Overutilization (harvest)	▪ No direct effects that contribute to this factor were identified
Disease and predation	▪ Increased susceptibility of sage-grouse to disease and predation resulting from physiological stress induced by noise and human presence
Inadequacy of existing regulatory mechanisms	▪ No direct effects that contribute to this factor were identified
Other natural or man-made factors affecting the species' continued existence	▪ No direct effects that contribute to this factor were identified

The effects of the Project-related to each of the six factors included in Table 3-100 were evaluated based on the best available information regarding the development of the Project from the Applicant, scientific literature, and the professional judgment of agency biologists contributing to the analysis. For each impact factor and/or associated potential direct effect, the evaluation included an assessment of anticipated sage-grouse response and the severity of this response to the development of the Project.

Impact Factors and Direct Effects not Affected by the Project

Implementation of the Project is not anticipated to contribute to the following factors identified in the 12-month findings of the FWS (Table 3-100): (1) overutilization (harvest of sage-grouse)(2) inadequacy of existing regulatory mechanisms, and (3) other natural or man-made factors affecting the species continued existence. An evaluation of those factors on sage-grouse that occupy habitats in the Project area is included below.

Overutilization (Harvest)

In Wyoming and Colorado, recreational hunting of sage-grouse occurs in populations crossed by the Project but is not legal in sage-grouse populations crossed by the Project in Utah. FWS does not consider recreational hunting to be a primary cause of the range-wide declines of sage-grouse and did not identify regulations regarding sage-grouse hunting as inadequate in the 12-month findings on petitions to list the species under the ESA (75 FR 13910). In Colorado, the CPW has successfully revised recreational hunting management of sage-grouse in populations crossed by the Project based on observed sage-grouse population trends. Due to this management, hunting is not considered to be a limiting factor in sage-grouse management in Northwest Colorado (Northwest Colorado Greater Sage-Grouse Working Group

2008). Similarly, in Wyoming WGFD regulates hunting of sage-grouse with a focus of maintaining hunting seasons and harvest levels that support maintenance and growth of sage-grouse populations (Christiansen 2010).

Utilization of sage-grouse for scientific, educational, and recreational purposes (lek viewing, scientific research including trapping and handling) occurs at low levels in Colorado, Wyoming, and Utah. These uses are not consumptive and are not likely to cause a disturbance to sage-grouse if proper scientific and viewing protocols are followed (Northwest Colorado Greater Sage-Grouse Working Group 2008).

Inadequacy of Existing Regulatory Mechanisms

The Project would not modify regulatory mechanisms designed to protect and promote conservation of sage-grouse and would be in compliance with all existing regulatory mechanisms. Additionally, the Project would be developed in compliance with all regulatory mechanisms currently under development by BLM, USFS, and affected states in response to the 12-month findings of the FWS on petitions to list the species under the ESA. If sage-grouse are listed as a threatened or endangered species under the ESA during the planning or development of the Project, BLM would comply with the provisions of the ESA through Section 7 consultation with the FWS. Inadequacy of existing regulatory mechanisms is not discussed further in this document.

Other Natural or Man-made Factors Affecting the Species Continued Existence

Agency biologists identified the application of herbicides used for vegetation and noxious weed management as a potential action associated with power line development could have adverse effects on sage-grouse health and populations. The effect is not anticipated to occur as a result of the implementation of the Project (Tables 3-98 and 3-100). There are not any additional direct effects identified from implementation of the Project that would contribute other natural or man-made factors affecting the continued existence of sage-grouse.

For any of the action alternatives, construction of the Project in sage-grouse habitat could increase the application of herbicides to control noxious weeds in sage-grouse habitat. Toxicity studies have concluded that herbicides applied at recommended rates should not result in sage-grouse poisonings (75 FR 13910). The effects of the Project on sage-grouse due to the application of herbicides would be limited as a Noxious Weed Management Plan would be developed and incorporated into the POD (Section 2.4). The Noxious Weed Management Plan would include restrictions on the use of herbicides intended for control of noxious weeds during Project construction, operation, maintenance, or reclamation monitoring. Herbicides would only be used for purposes of controlling noxious weeds and would be used in their lowest effective concentrations. Herbicides would not be used in areas where sage-grouse are known to concentrate, for example, in wet meadows or isolated mesic areas used by large numbers of sage-grouse during the summer.

Impact Factors and Direct Effects Affected by the Project

Implementation of the Project is anticipated to contribute to the direct loss of sage-grouse and the following factors identified in the 12-month findings of the FWS: (1) present or threatened destruction, modification, or curtailment of habitat or range and (2) disease and predation. An evaluation of effects of these factors on sage-grouse that occupy habitats in the Project area is included below.

Direct Loss of Sage-grouse

Potential direct effects of the Project that would contribute to the direct loss of birds from sage-grouse populations include:

- Mortality due to electrocution of sage-grouse from contact with power line infrastructure
- Mortality due to collisions with power line conductors, fences, or guy wires
- Mortality due to collisions with vehicles traveling on roads
- Mortality due to destruction of active nests

Additionally, agency biologists and the scientific literature have identified electrocution of sage-grouse due to contact with power lines to be a potential effect on sage-grouse associated with power line development (76 FR 66370-66439). This effect is not anticipated to occur as a result of implementation of the Project and the rationale for this conclusion is presented in this section.

Mortality Due to Electrocution of Sage-grouse from Contact with the Power Line Infrastructure

Electrocution of birds and other wildlife by power lines have been observed due to animals' simultaneous contact with grounded and energized electrical equipment. Electrocution of birds can occur when the distance between phase conductors or the distance between grounded and energized hardware is less than the wrist-to-wrist or head-to-foot distance of a bird (APLIC 2006). There would be no potential for electrocution of sage-grouse due to contact with energized electrical infrastructure because the distance between conductors, or an energized conductor and a grounded element of the transmission line infrastructure, would be much greater than the wingspan or head-to-foot measurement of a greater sage-grouse.

Mortality Due to Collisions with Power Line Conductors, Fences, or Guy Wires

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for sage-grouse mortality as a result of in-flight collisions with transmission line infrastructure.

The potential for sage-grouse mortality due to collision with transmission line conductors and towers exists but is generally low. Factors influencing avian transmission line collisions include the location and configuration of transmission lines, species-specific tendencies for collision, and environmental conditions (e.g., weather, topography, and habitat) (APLIC 2006). Braun (1998) and Connelly et al. (2000) reported that sage-grouse mortalities as a result of collisions with transmission lines occur, but provided no specific data or cited studies (UDNR 2010). Unpublished reports of sage-grouse mortalities as a result of collisions with power lines were reported by Beck et al. (2006) who attributed two mortalities to power line collisions in southeastern Idaho that accounted for 33 percent of observed juvenile (1st winter) mortality in low-elevation areas (UDNR 2010). It is unclear what evidence each of these authors used to draw the conclusion that mortalities were caused by collisions with transmission lines and whether collisions reported occurred with transmission lines or distribution lines. Conductors on transmission lines are typically strung at higher elevations than distribution lines and have thicker conductors, which could increase a bird's ability to see and avoid wires in flight. Information regarding typical sage-grouse flight heights is not available, though sage-grouse have been reported (anecdotally) to fly substantially higher when migrating between seasonal habitats than birds making short flights in seasonal habitats (Madsen 2012). The tendency of sage-grouse to fly relatively low, and in low light or when harried, may put them at a risk of collision transmission line infrastructure. Areas where the transmission line would be located near habitats where grouse concentrate (e.g., leks, wintering areas, brood-rearing areas) may represent localized areas where the risk of collision with transmission line infrastructure would be increased.

Guyed-v and guyed-delta transmission line towers are proposed for the majority of sage-grouse habitat in the Project area (refer to Section 2.3 for a description of proposed transmission line towers and siting locations), which may pose a greater risk of mortality and injury from in-flight collision than other transmission line towers. While there are no studies demonstrating an increased risk of sage-grouse collision with guyed structures compared to other transmission line tower types, the tendency for sage-

grouse to typically fly at low heights potentially puts them at the height of guy wires during flight and may increase their risk of collision. The probability of collision is greater for sage-grouse and other upland game birds than for some other bird species due to their larger size and low flight maneuverability (APLIC 2012). As mentioned above for collision risk with general transmission line infrastructure, collision risk for guy wires may be increased in areas where the Project is located near habitats where sage-grouse concentrate (e.g., leks, wintering areas, brood-rearing areas), or where lines are located between two habitat types that birds frequently fly between at low heights (i.e., foraging and roosting sites) (APLIC 2012).

The degree of increased sage-grouse collision risk posed by guyed transmission line towers compared to other transmission line towers cannot be quantified due to a lack of available data; therefore the effectiveness of mitigation measures that include using alternative structure types in sage-grouse habitat is unknown. Marking fences has been demonstrated to reduce sage-grouse fence collision risk and could be an effective tool for minimizing guy-wire collision risk (refer to Selective Mitigation Measure 14).

Fences represent potential movement barriers (especially woven-wire fences), avian predator perches or travel corridors for mammalian predators, and a potential cause of direct mortality to sage-grouse (Braun 1998). Fences with high collision risk generally include one or more of the following characteristics: (1) constructed with steel t-posts, (2) constructed near leks, (3) bisect winter concentration areas, or (4) border riparian areas used for brood-rearing (Christiansen 2009). Sage-grouse collision risk during the breeding season is higher for fences located on flat ground close to larger leks (Stevens 2011; Stevens et al. 2012). Population-level effects of mortalities resulting from collisions with fences are unknown but may be locally significant. However, the construction of fences will be limited to communication regeneration stations, ground rod installation sites, and substation perimeters in the form of chain link security fences (typically 8 feet in height, refer to Section 2.3) unlike the woven-wire big game fences (Braun 1998) more typically representing a potential movement barrier and collision threat to sage-grouse.

Mortality Due to Collisions with Vehicles Traveling on Roads

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for sage-grouse mortality as a result of collisions with construction and maintenance vehicles. Wildlife mortalities due to collisions with moving vehicles occur most frequently on well-traveled secondary roads and highways. The potential for wildlife collisions with vehicles on tertiary, unimproved, and one-lane roads is lower than on larger improved surface roads as the frequency of travel is relatively low and vehicle speeds are limited by road conditions. To the extent possible, existing roads in their present condition without improvement would be used to access the right-of-way (Section 2.3.3). Where new roads are required to access the right-of-way, they would be constructed to a minimum width of 14 feet (Section 2.3.3). Existing roads in sage-grouse habitat likely to be used to access the Project during construction and maintenance are generally unimproved roads and are only suitable for low-speed vehicle travel (less than 30 mph). Access roads constructed for the Project would not be improved to a degree that vehicles traveling on these roads could reach high speeds. The Project would require construction of new access roads and increased traffic on existing access roads during construction and maintenance activities. Due to the limitation of construction and maintenance vehicle speeds because of access road conditions, the probability of sage-grouse mortality from collisions with vehicles traveling on access roads was determined to be low. Additionally, a Traffic and Transportation Management Plan would be developed and incorporated into the POD to help reduce all potential environmental impacts related to transportation (Section 2.4).

Mortality Due to Destruction of Active Nests

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for sage-grouse mortality as a result of destruction of active nests. The potential for the destruction of active nests by construction vehicles is reduced because of seasonal restrictions on construction and maintenance activities that would be implemented within 4 miles of sage-grouse leks to avoid impacts on nesting and breeding sage-grouse (Appendix J, Table J-12). Results of research projects in Colorado, Idaho, and Wyoming have indicated that approximately 80 percent of sage-grouse nests occur within 4 miles of the active lek where female grouse were captured and assumed to have bred (Colorado Greater Sage-grouse Steering Committee 2008). Other studies have shown that the average distance between sage-grouse nests and leks range from 2.1 to 4.8 miles (Schroeder et al. 1999). Sage-grouse that nest more than 4 miles away from known leks would not be protected by seasonal restrictions within 4 miles of leks. However, this suggests that 20 percent of the population nests are farther than 4 miles from a lek. Construction activities occurring during the sage-grouse nesting season would coincide with the migratory bird nesting season. Surveys for ground-nesting migratory birds would be required within 7 days of ground-disturbing activities. While sage-grouse are not protected under the MBTA, if active sage-grouse nests are located during surveys for migratory ground-nesting birds, the BLM and the appropriate state wildlife agency would be notified before construction can proceed and appropriate spatial buffers will be implemented to avoid disturbing nesting activities. These protection measures should minimize direct impacts on nesting sage-grouse.

Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range

Potential direct effects of the Project that would contribute to the present or threatened destruction, modification, or curtailment of sage-grouse habitat or range include:

- Reduction in the quality of sage-grouse habitat due to introduction and spread of noxious weeds
- Loss and degradation of sage-grouse habitat quality and function
- Fragmentation of sage-grouse habitats (and avoidance of habitats by sage-grouse) due to the introduction of tall structures (transmission line towers), increased electric and magnetic fields or electromagnetic fields (EMFs), and construction of new roads
- Disturbance to sage-grouse and disruption of breeding activities due to increased human presence and noise at lek locations
- Disturbance to sage-grouse during nesting, breeding, and wintering periods resulting from human presence, vehicle use, and noise during construction and maintenance
- Interruption and/or alternation of seasonal sage-grouse migrations and movements among populations

Reduction in the Quality of Sage-grouse Habitat due to the Introduction and Spread of Noxious Weeds

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for reductions in the quality of sage-grouse habitat by introducing and/or spreading noxious weeds. The Presence of invasive plant species is a mechanism whereby any disturbance has the strong potential to result in suboptimal habitat quality (Crawford et al. 2004). Invasive plants, especially invasive annual grasses (e.g., cheatgrass) in sagebrush-steppe habitats, alter plant community structure and composition, productivity, nutrient cycling, and hydrology resulting in losses of biodiversity, ecosystem services, and soil properties and may competitively exclude the native plants important as cover and forage for sage-grouse (Mooney and Cleland 2001; Rowland et al. 2010; Vitousek 1990). The largest adverse consequence of exotic annual grass invasion on sage-grouse habitats is the resulting change in fire frequency and intensity. Ultimately, exotic grasses promote fires, and fires promote exotic grasses and facilitate the conversion of rangelands from perennial-dominated to annual-dominated systems by

eliminating fire-intolerant species such as big sagebrush from these systems, rendering them permanently unsuitable to sage-grouse (Davies et al. 2011; Mooney and Cleland 2001; Vitousek 1990).

The potential for the introduction and spread of noxious weeds would be reduced as a Noxious Weed Management Plan and a Reclamation, Revegetation, and Monitoring Plan would be developed and incorporated into the POD (Section 2.4). The Noxious Weed Management Plan would be developed in compliance with BLM Manual 9015 (Integrated Weed Management) and USFS Manual 2080 (Noxious Weeds) (Section 2.4) and would outline requirements for noxious weed inventory, monitoring, and reduction measures required to prevent the spread of noxious weeds as a result of Project construction or maintenance. These measures will include washing of construction equipment prior to arriving onsite and treating and/or avoiding existing weed populations to avoid spreading weeds to uninfested areas. To support the implementation of the Noxious Weed Management Plan, a noxious weed inventory would be performed to identify locations where avoidance and treatment measures will be required. The results of surveys will be incorporated into the POD. Successful implementation of the Noxious Weed Management Plan will substantially reduce the probability of sage-grouse habitat degradation due to spread of noxious weeds. Implementation of the Reclamation, Revegetation, and Monitoring Plan would ensure that areas disturbed by Project construction are successfully reclaimed with a seed mix approved by the BLM and private landowners to further help prevent the spread of noxious weeds and restore function of disturbed habitats. However, noxious weeds aggressively invade disturbed areas and the potential for introducing or spreading noxious weeds would be present even if the Noxious Weed Management Plan and Reclamation, Revegetation, and Monitoring Plan were successfully implemented because of ground-disturbing activities associated with construction of the Project.

Loss and Degradation of Sage-grouse Habitat Quality and Function

Under any of the action alternatives, construction of the Project in sage-grouse habitat would result in loss and degradation of sage-grouse habitat quality and function. Removal of vegetation in sage-grouse nesting, brood-rearing, and wintering habitat as a result of construction of transmission line towers and access roads would result in loss and degradation of currently occupied sage-grouse habitat.

Direct loss of sage-grouse habitats as a result of project construction would be minimized through restoration of areas not required for ongoing operation and maintenance of the transmission line in accordance with the Reclamation, Revegetation, and Monitoring Framework Plan to be included as a part of the POD (Section 2.4). However, the footprint associated with infrastructure and roads would no longer function as effective sage-grouse habitat.

Fragmentation of Sage-grouse Habitats due to the Introduction of Tall Structures, Increased Electromagnetic Fields, and Construction of New Roads

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for fragmentation of habitats primarily as a result of potential avoidance by sage-grouse of habitats near the transmission line due to the introduction of tall structures, EMF, and new roads.

Sage-grouse biologists and agency personnel have raised concerns that sage-grouse may avoid areas that contain tall structures, including transmission line towers (Braun 1998; Braun et al. 2002; Pruett et al. 2009; Schroeder 2010) and areas adjacent to transmission lines due to the presence of EMF near the line (Fernie and Reynolds 2005). A USGS review of factors influencing sage-grouse conservation concluded that sage-grouse may avoid habitats within 0.4 to 2.9 miles (0.6 to 4.7 kilometers) of transmission lines, that erection of a transmission line close to a lek may negatively influence sage-grouse lek attendance and breeding-season behavior, and that higher densities of power lines within 4.0 miles (6.4 kilometers) of a lek may negatively influence lek persistence (Manier et al. 2014). Based on a separate literature review on the impacts of infrastructure on sage-grouse, the USGS proposed sage-grouse conservation buffers for tall

structures, including transmission lines, that ranged from 2.0 to 5.0 miles (3.3 to 8.0 kilometers) (Manier et al. 2014). These distances are an attempt to balance the extent of protected areas with multiple land-use requirements using estimates of the distribution of sage-grouse habitat. The authors stated that there is no single distance that is an appropriate buffer for all sage-grouse populations and habitats because of variations in populations, habitats, development patterns, and other factors. They also acknowledge that scientifically justifiable departures may be warranted based on local data and other factors when implementing buffer protections or density limits (Manier et al. 2014).

Across the western range of the species, habitat suitability as measured by the presence of active leks was highest in areas with power line densities less than 0.037 mile (of overhead transmission line) per square mile (0.06 kilometer [of overhead transmission line] per square kilometer) and leks were absent from areas where power line densities exceeded 0.0124 miles (of overhead transmission line) per square mile (0.2 kilometer [of overhead transmission line] per square kilometer) (Knick et al. 2013). Displacement of greater sage-grouse from occupied habitats may occur as a result of construction of transmission line towers and the tendency of sage-grouse to avoid tall structures (transmission line towers) and in response to increased raptor presence as a result of the presence of transmission towers on which raptors perch. Braun (1998), citing unpublished data, reported that sage-grouse use of areas, near transmission lines in Colorado, as inferred from pellet counts, increased as distance from transmission lines increased up to 1,968.5 feet (600 meters). Similarly, in a comparison of sage-grouse radiotelemetry locations in Idaho to locations of anthropogenic features, Gillian et al. (2013) found that sage-grouse avoided areas within 1968.5 feet (600 meters) of power transmission lines and 492 feet (150 meters) of buildings, and Hanser et al. (2011b) found a negative association between modeled sage-grouse occurrence within 1,640.4 feet (500 meters) of energy development, power lines, and major roads in Wyoming using pellet count data.

Construction of a transmission line altered dispersal patterns of breeding sage-grouse in northeastern Utah (Ellis 1985), suggesting a transmission line could be a potential barrier to movements and thus result in habitat fragmentation. The transmission line was constructed within 656.17 feet (200 meters) of an active sage-grouse lek and was situated between the lek and male breeding season day-use areas and resulted in a 72 percent decline in the mean number of displaying males and an alteration in daily dispersal patterns during the breeding season within 2 years of construction (Ellis 1985). The frequency of raptor-sage-grouse interactions during the breeding season increased 65 percent between before and after transmission line comparisons (Ellis 1985). In northeastern Wyoming, the probability of lek persistence decreased with proximity to power lines and the increasing proportion of power lines in a 4-mile (6.4 kilometer) area around leks (Walker et al. 2007). Sage-grouse avoided brood-rearing habitats within 2.9 miles (4.7 kilometers) of transmission lines in south-central Wyoming (LeBeau 2012).

Sage-grouse populations rely on large, interconnected expanses of sagebrush and the majority of sage-grouse populations throughout the western range of the species are connected by landscapes characterized by moderate-to-high potential for sage-grouse movement (Knick et al. 2013; Wisdom et al. 2011). Lek persistence has been shown to be strongly related to lek connectivity, a measure of a lek's influence on the maintenance of range-wide population connectivity evaluated at a dispersal distance of 18 kilometers with abandoned leks having lower range-wide connectivity importance (Knick and Hanser 2011). As described previously, transmission lines could be a potential barrier to sage-grouse movements (Ellis 1985) and could limit dispersal between leks and populations, which could compromise lek and population persistence.

Increased EMF has been shown to alter the behavior of avian species, though species vary in their sensitivity to this disturbance (Fernie and Reynolds 2005). Peer-reviewed studies regarding greater sage-grouse reactions to EMFs are not available. The potential effect of the proposed Project on EMF levels is described in Section 3.2.23. If sage-grouse avoid EMFs created by transmission lines, the effects are

likely to be similar to those resulting from the introduction of transmission towers in occupied sage-grouse habitats.

Traffic on Project access roads will be greatest during construction of the transmission line, and in general, road effect-distances (the distance from a road at which a population density decrease is detected) are positively correlated with increased traffic density and speed (Forman and Alexander 1998). After completion of construction of the transmission line, Project- and nonProject-related traffic on access roads developed for the project would likely be low and avoidance of sage-grouse habitats due to vehicle presence associated with access roads is expected to be minimal.

Disturbance to Sage-grouse and Disruption of Breeding Activities due to Increased Human Presence and Noise at Lek Locations

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for disturbance to sage-grouse and disruption of breeding activities due to increased human presence and other construction equipment at lek locations. Several studies have demonstrated that roads near sage-grouse leks may influence female habitat selection (Lyon and Anderson 2003) and that levels of road-related effects are positively correlated with increased traffic (Holloran 2005; Remington and Braun 1991). Sage-grouse have been shown to avoid nesting and summering near paved secondary highways in south-central Wyoming (LeBeau 2012). Traffic disturbance (1 to 12 vehicles/day) within 1.9 miles (3 kilometers) of leks during the breeding season reduced nest-initiation rates and increased distances moved from leks during nest site selection of female sage-grouse in southwestern Wyoming (Lyon and Anderson 2003). Rates of decline in male sage-grouse lek attendance increased as traffic volumes on roads within approximately 1.9 miles (3 kilometers) of leks increased, and vehicle activity on these roads during the daily strutting period (i.e., early morning) had a greater influence on male lek attendance compared to roads with no vehicle activity during early morning hours in southwestern Wyoming (Holloran 2005). In central Wyoming, peak male attendance (i.e., abundance) at leks experimentally treated with noise recorded at roads in a gas field, decreased 73 percent relative to paired controls. Blickley et al. suggest that the intermittent noise like that produced by traffic was a cause of declines in male lek attendance on leks near roads (Blickley et al. 2012). Impacts of anthropogenic activity have been documented at leks at a distance of up to 3.7 miles (6 kilometers) (Naugle et al. 2011). Implementation of seasonal restrictions within 4 miles of active leks would be expected to minimize disturbance associated with noise and human presence.

Minimal traffic disturbance (1 to 12 vehicles/day) within 1.86 miles (3 kilometers) of leks during the breeding season reduced nest-initiation rates and increased distances moved from leks during nest site selection of female sage-grouse; nesting propensity was 26 percent lower for females breeding on road-disturbed leks compared to undisturbed females, and females moved twice as far from leks to nest locations if breeding on disturbed leks (Lyon and Anderson 2003). Additionally, rates of decline in sage-grouse male lek attendance increased proportionally to traffic volumes on roads near leks (Holloran 2005). Therefore, even slight long-term increases in project and nonProject-related traffic as a result of newly constructed roads has the potential to adversely influence sage-grouse distribution and reproduction throughout the life of the project.

Disturbance to Sage-grouse During Nesting, Breeding, and Wintering Periods Resulting from Human Presence, Vehicle Use, and Noise During Construction and Maintenance

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for disturbance to sage-grouse during wintering periods resulting from human presence, vehicle use, and noise during construction and maintenance of the Project.

In north central Wyoming, sage-grouse were 30 percent more likely to occupy sagebrush-dominated habitats with no gas field infrastructure compared to habitats with 12.3 wells per 2.5 square miles (4 square kilometers) (i.e., maximum allowable well density on federal lands) during the winter (Doherty et al. 2008). In central Wyoming, sage-grouse at the scale of a home range avoided natural gas wells; at the scale of the population, avoidance of haul roads associated with natural gas development were observed during the winter (Dzialak et al. 2012). At a study site in southern Alberta, Canada, the probability of sage-grouse selection of winter habitat declined when these habitats were within 1,900 meters of oil or natural gas wells (Carpenter et al. 2010). Research in central Wyoming suggests that disturbance to wintering sage-grouse from energy development are related to human activity levels; variation in avoidance response to natural gas wells among sage-grouse individuals between day and night locations (e.g., avoidance of infrastructure during the day, but not at night) suggests avoidance of human activity (Dzialak et al. 2012). Based on study results, Braun suggests dissuading raptor perching on transmission line poles situated in suitable winter habitat (along windswept ridges and near large expanses of sagebrush that are not typically covered by snow in winter) to minimize the influence of avian predators perching on transmission lines on wintering sage-grouse populations (Braun 2006).

Interruption and/or Alteration of Seasonal Sage-grouse Migrations and Movements Among Populations

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for interruption and/or alternation of seasonal sage-grouse migrations and movements among populations. As previously described, construction of transmission line structures and new access roads could result in sage-grouse avoiding areas near the transmission line such that those habitats are no longer used by sage-grouse, and could present a barrier to sage-grouse movements. If sage-grouse responses include avoidance of areas near the transmission line and/or reduction of movements across the transmission line right-of-way, the Project may fragment and reduce the connectivity of sage-grouse habitats in the Project area. These effects could result in alteration of seasonal sage-grouse migrations or movements among populations if habitats affected represent important seasonal habitat or habitat important for providing connectivity between populations. Gene flow in sage-grouse populations is likely limited to the movement of individuals between neighboring leks and populations and not likely the result of long-distance movements of individuals across large portions of the species' range (Oyler-McCance et al. 2005). Thus, regional connectivity among leks and populations may represent a fundamental source of genetic recombination and metapopulation structure that supports the long-term viability of the species. Additionally, connectivity between leks has been shown to be important for population sustainablity (Knick and Hanser 2011; Knick et al. 2013). Studies have shown that sage-grouse that attend leks up to 11 miles from disturbances could be affected by the loss of seasonal habitat functionality (Nelle et al. 2000).

Disease and Predation

For any of the action alternatives, construction of the Project in sage-grouse habitat could increase the susceptibility of sage-grouse to disease and predation as a result of physiological stress induced by noise and human presence during construction and maintenance of the Project.

Research in the natural gas fields of southwestern Wyoming suggested a lag between the times an individual sage-grouse was affected by an anthropogenic disturbance and when survival probabilities were adversely affected (Holloran 2005). Female sage-grouse were directly influenced by infrastructure and human activity primarily during the breeding and nesting seasons but differential survival between affected and control individuals occurred during the brooding and summer periods. Declines in body condition caused by elevated blood corticosteroid levels—the physiological response of avian species to stress (Siegel 1980) during the period of time the females were influenced by energy development— may have resulted in altered foraging or vigilance behaviors increasing the probability of predation later in the

summer and early fall. Research data indicated impacts of infrastructure on female survival in general were the largest contributor to reduced population growth documented in sage-grouse populations influenced by energy development in southwestern Wyoming (Holloran 2005).

Poles and towers associated with transmission lines influence raptor and corvid distributions and hunting efficiency potentially resulting in increased predation on sage-grouse (Coates et al. 2014; Connelly et al. 2004; Steenhof et al. 1993). Foraging distances of avian predators of sage-grouse have been estimated at 4.3 miles (6.9 kilometers) (Knick and Connelly 2011), suggesting that transmission lines may influence sage-grouse survival at large spatial scales (Connelly et al. 2004; Cresswell et al. 2010). Although the conceptual effects of transmission lines on predator distributions and sage-grouse populations are clear-cut, direct information relating the effects of these lines on sage-grouse demographics is limited.

Indirect Effects

Table 3-99 identifies the potential indirect impacts on sage-grouse of each Project activity and/or phase of the Project identified in the Applicant's project description (Refer to Section 2.3 and Appendix B).

Table 3-101 classifies each of the potential indirect effects on sage-grouse identified in Table 3-99 based on the five-factor analysis and threats identified in the FWS' *12-Month Findings for Petitions to List the Greater Sage-grouse as Threatened or Endangered* (75 FR 13910) under the ESA and the requirements of the Framework for Sage-grouse Impacts Analysis for the Project (Appendix K). The classification facilitates understanding of the Project's contribution to the threats to the species identified in the 12-month findings.

TABLE 3-101
IMPACT FACTORS USED TO EVALUATE THE POTENTIAL INDIRECT EFFECTS ON GREATER SAGE-GROUSE ASSOCIATED WITH THE PROJECT

Factor	Potential Indirect Effects
Direct loss of birds	▪ No indirect effects that contribute to this factor were identified.
Present or threatened destruction, modification, or curtailment of habitat or range	▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds ▪ Sage-grouse avoidance of habitat due to potential increase in raptor predation pressure ▪ Disruption of sage-grouse nesting and breeding activities and sage-grouse avoidance of habitat due to vehicle noise and human presence resulting from public use of new access roads
Overutilization (harvest)	▪ Increased public access to previously less accessible sage-grouse habitats
Disease and predation	▪ Increased potential for spread of disease among sage-grouse ▪ Increased predation risk to sage-grouse by mammalian predators ▪ Increased predation risk to sage-grouse by raptors and ravens ▪ Alteration of sage-grouse behavioral patterns due to increased predation pressure
Inadequacy of existing regulatory mechanisms	▪ No indirect effects that contribute to this factor were identified
Other natural or man-made factors affecting the species' continued existence	▪ Reduction in sage-grouse forage, prey availability, and vegetation cover due to use of herbicides

The effects of the Project-related to each of the six factors included in Table 3-101 were evaluated based on the best available information regarding the development of the Project from the Applicant, scientific literature, and agency concerns regarding sage-grouse conservation. For each impact factor and/or

associated potential indirect effect, the evaluation included an assessment of anticipated sage-grouse response and the severity of this response to the development of the Project.

Direct Loss of Birds

Direct loss of birds and inadequacy of existing regulator mechanisms would not indirectly impact sage-grouse and are not included in the discussion that follows.

Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range

Potential indirect effects of the Project that would contribute to the present or threatened destruction, modification, or curtailment of sage-grouse habitat or range include:

- Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds
- Sage-grouse avoidance of habitat due to potential increase in raptor predation pressure
- Disruption of sage-grouse nesting and breeding activities and sage-grouse avoidance of habitat due to vehicle noise and human presence resulting from public use of new access roads

Alteration of the Native Sagebrush Understory Through Introduction and Spread of Non-native, Invasive Plants and Noxious Weeds

For any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for introduction and spread of non-native plants and noxious weeds, most notably cheatgrass in sage-grouse habitats. Invasive plants and noxious weeds could be introduced or spread by vehicles and equipment used during construction or by subsequent public use of access roads constructed for the Project. Cheatgrass has been a major factor in the loss of Wyoming big sagebrush communities (Chambers et al. 2007) and is consistently cited as a major challenge to the maintenance of sagebrush steppe habitats (Knick 1999; Young and Allen 1997). Invasive plants such as cheatgrass and medusahead displace desirable native plant species and degrade rangeland health. In many cases the displaced species are critical to sage-grouse survival (NRCS 2010). Degradation of sage-grouse habitat due to invasion of non-native plants and noxious weeds could lead to decreased survival of individual birds in affected populations and a reduction in the carrying capacity of sagebrush habitats.

In addition to cheatgrass' displacement of native understory species, infestation leads to an increased risk of wildfires that eliminate the sagebrush overstory because cheatgrass germinates early and thus dries early in the growing season (Klemmedson and Smith 1964). Sagebrush plant communities important for sage-grouse survival could be destroyed by fire and habitats require decades to recover. However, fires promote the proliferation of invasive annual grasses and could result in the permanent conversion of sagebrush-dominated habitats to habitats of annual grasslands. Prior to re-establishment of sagebrush cover, these sites often have limited or no value to sage-grouse (Connelly et al. 2000). More frequent fires in sage-grouse habitats as a result of construction of the transmission line, access roads, and alteration of vegetation communities could result in reduced local sage-grouse population size and reduction of suitable habitat available for sage-grouse in the Project area.

The potential spread of invasive plants and noxious weeds as a result of ground disturbance during construction under all action alternatives would be minimized through the development of a Noxious Weed Management Plan to be included in the POD (Section 2.4). Measures that would be prescribed by the Noxious Weed Management Plan are described in more detail in the evaluation of direct effects.

Sage-grouse Avoidance of Habitat Due to Potential Increase in Raptor Predation Pressure

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for predation of sage-grouse by raptors and ravens in areas around the transmission line. The indirect effects of the Project on predation are described below under Disease and Predation. Sage-grouse may respond to increased predation pressure around the transmission line (Connelly et al. 2004) by avoiding areas where predators are concentrated and predation pressure is highest (Dinkins et al. 2012). Hall (2004, as cited in Manville 2004 and California Partners in Flight 2005) attributed reductions in male use of strutting grounds to increased predation by golden eagles and ravens up to 3.7 miles (6 millimeters) from overhead power transmission and communication distribution lines. If raptors and ravens are concentrated around the transmission line, sage-grouse may abandon or reduce their utilization of habitats near the transmission line, resulting in increased predation pressure on grouse in these areas, effectively reducing the amount of habitat available to individuals and populations and potentially displacing birds into suboptimal habitats (Connelly et al. 2004).

Disruption of Sage-grouse Nesting and Breeding Activities and Sage-grouse Avoidance of Habitat Due to Vehicle Noise and Human Presence Resulting from Public Use of New Access Roads

New access roads constructed in sage-grouse habitat would be open and available for public use for recreational access or other uses of lands in the Project area following construction. The new access roads constructed for the Project would facilitate public use of sage-grouse habitats that are rarely visited by humans in their current condition due to their distance from developed roads. Increased vehicle noise and human presence due to public use of access roads would be expected to occur at low levels as the Project predominately crosses sage-grouse habitat in rural areas where existing public utilization of access roads and public lands are generally low. Construction of the Project is not anticipated to create an attraction that would increase public visitation to the area following construction. Effects on sage-grouse and sage-grouse habitat use associated with vehicle noise and increased human presence resulting from public use of new access roads would be similar to the direct effects of construction on sage-grouse habitat use and nesting and breeding activities. However, the intensity of the effects on sage-grouse due to public use of access roads could be less than the effects described for construction due to the anticipated infrequent public use of access roads.

Overutilization (Harvest)

Although no studies to date have demonstrated that hunting is a primary cause of sage-grouse population declines, hunting and harvest may influence grouse abundance and distributions through time and across landscape units (Reese and Connelly 2011; Sedinger et al. 2011). In some areas, harvest can have an additive effect on mortality; therefore, local factors are important for determining harvest levels that balance the other stressors influencing a given population or region (Connelly et al. 2003a; Reese and Connelly 2011). However, due to constant reviews of controlled harvest levels by agencies, any local Project impacts on sage-grouse would not contribute to overutilization.

Disease and Predation

Potential indirect effects of the Project that would contribute to loss of sage-grouse due to disease and predation include:

- Increased potential for spread of disease among sage-grouse
- Increased predation risk to sage-grouse by mammalian predators
- Increased predation risk to sage-grouse by raptors and ravens
- Alteration of sage-grouse behavioral patterns due to increased predation pressure

Additionally, agency biologists and scientific literature have identified increased potential for spread of disease among sage-grouse to be a potential effect on sage-grouse associated with industrial development. This effect is not anticipated to occur as a result of implementation of the Project (Table 3-99), and the rationale for this conclusion is presented in this section.

Increased Potential for Spread of Disease among Sage-grouse

Sage-grouse are hosts for a variety of parasites and diseases (75 FR 13910). Many of these diseases (e.g., West Nile virus) could be spread by vectors including mosquitoes. Projects that create breeding habitat for mosquitoes through water development or other means could increase the spread of disease among sage-grouse. The Project would not require any water developments that could be used as suitable breeding reservoirs for disease vectors; thus, this issue is not addressed in this analysis.

Increased Predation Risk to Sage-grouse by Mammalian Predators

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for predation risk to sage-grouse due to an increase in mobility of mammalian predators along the transmission line corridor and increased detectability of sage-grouse to mammalian predators due to removal of sage-grouse escape cover. Improvement of old or construction of new access roads between tower locations would occur during Project construction. The Applicant has indicated that roads would be constructed in a straight line between towers to the extent practicable. Roads can provide corridors for mammalian predator movement, which may result in increased sage-grouse predation (Kuipers 2003). Construction of straight roads between tower locations also would create long corridors where escape cover used by sage-grouse would be removed and visibility and mobility for mammalian predators could be increased. Sage-grouse may experience increased predation by mammalian predators due to the lack of escape cover and increased visibility of sage-grouse to mammalian predators when utilizing these corridors.

Increased Predation Risk to Sage-grouse by Raptors and Ravens

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the potential for predation of sage-grouse by raptors and ravens. Ravens preferentially use habitats and nest in proximity to transmission lines (Coates et al. 2014; Howe et al. 2014). Raptors and ravens are known to prey on nesting and foraging sage-grouse in addition to grouse on leks (Hagen 2011; Lockyear et al. 2013). Tall structures (including transmission line towers) provide attractive hunting perches for raptors and ravens in areas where vegetation is low and terrain is relatively flat (Connelly et al. 2000). Transmission line poles and towers have been shown to influence raptor and corvid distributions and hunting efficiency (Connelly et al. 2004; Steenhof et al. 1993), which may result in increased predation on sage-grouse. Knick and Connelly (2011) report estimated foraging distances of avian sage-grouse predators at 6.9 kilometers (4.3 miles), suggesting that the extent of habitat indirectly affected as a result of existing and planned transmission line infrastructure could be substantial (Connelly et al. 2004; Cresswell et al. 2010). Studies in Wyoming found leks in proximity to transmission lines have lower annual recruitment of individual birds when compared to leks farther from these lines. The difference was presumed to be a result of raptor predation (Braun et al. 2002).

Alteration of Sage-grouse Behavioral Patterns Due to Increased Predation Pressure

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase predation pressure on sage-grouse from avian and mammalian predators. Sage-grouse may respond to increased predation pressure by increasing sheltering behavior to avoid predation and reducing or shifting temporally other essential behaviors (e.g., foraging) (Hagen 2011). These behavioral shifts may reduce

the fitness of individual sage-grouse that occupy habitats near the transmission line, which may ultimately influence survival (Holloran 2005).

Other Natural or Man-made Factors Affecting the Continued Existence of the Species

Potential indirect effects of the Project that would contribute to other natural or man-made factors affecting sage-grouse include reduction in sage-grouse forage, insect prey availability, and vegetation cover due to use of herbicides.

Reduction in Sage-grouse Forage, Insect Prey Availability, and Vegetation Cover Due to Use of Herbicides

Under any of the action alternatives, construction of the Project in sage-grouse habitat could increase the application of herbicides to control noxious weeds in sage-grouse habitat. Herbicide applications can kill sagebrush and forbs that are important food sources for sage-grouse (Call and Maser 1985), and may affect insect populations dependent on these plants. The use of herbicides to control noxious weeds have been shown to reduce the abundance and diversity of forbs in sage-grouse brood habitat (Crawford et al. 2004; Klebenow 1970). Reduction of understory vegetation in sagebrush habitats can reduce the amount of forbs and insects available, which comprise the bulk of sage-grouse chick diets until they are approximately 12 weeks of age (Klebenow and Gray 1968; Peterson 1970) and provide protein sources that are essential for successful egg production and chick nutrition (Gregg et al. 2008; Johnson and Boyce 1991; Schroeder et al. 1999). The effects of the Project on sage-grouse due to the application of herbicides would be limited as a Noxious Weed Management Plan would be developed and incorporated into the POD (Section 2.4). The Noxious Weed Management Plan would include restrictions on the use of herbicides intended for control of noxious weeds during Project construction, operation, maintenance, or reclamation monitoring. Herbicides would only be used for purposes of controlling noxious weeds, and would be used in their lowest effective concentrations. Herbicides would not be used in areas where sage-grouse are known to concentrate or in areas known to be important for nesting or brood-rearing females.

Mammals

Direct Effects

Potential direct effects of the Project on sensitive mammal species may include habitat loss, degradation, and fragmentation, and injury or mortality as described in Section 3.2.7. Potential indirect Project impacts on mammals may include loss of escape cover, foraging habitat, and habitats required for reproduction.

The pygmy rabbit is a sagebrush obligate species, which occurs in close association with stands of older growth big sagebrush (*Artemisia tridentata*). Pygmy rabbits occupy relatively small home ranges (approximately 2 miles maximum) and generally exhibit limited dispersal capabilities (Oliver 2004). Consequently, pygmy rabbits are susceptible to impacts resulting from modification or fragmentation of big sagebrush habitats (WGFD 2010d). Vegetation clearing and ground disturbance during project construction could result in habitat loss and fragmentation and direct mortality of pygmy rabbits as a result of heavy equipment operations in occupied habitats.

The black-footed ferret occurs in close association with prairie dogs (*Cynomys* spp.) in grasslands, steppe, and shrub-steppe vegetation communities. Ground disturbance and heavy machinery operation during Project construction could result in direct mortality of prairie dogs (including the white-tailed prairie dog) and black-footed ferrets if prairie dog towns are not avoided. In some locations affected by project construction, clearing of shrub cover underlain by friable soils adjacent to existing prairie dog towns could result in prairie dog dispersal and localized increases in their abundance.

Indirect Effects

Potential indirect effects of the Project on sensitive mammal species include degradation of habitat quality as a result of weed infestations following project construction and associated increased potential for rangeland wildfire, increased predation by raptors, and increased disturbance and mortality associated with increased human access and activity to areas affected by project construction, as described in Section 3.2.7.

Pygmy rabbits, white-tailed prairie dogs, and black-footed ferrets could be subjected to increased raptor predation following construction of transmission towers that would provide perches for raptors in grassland, steppe, and shrub steppe habitats occupied by these sensitive mammal species. Additionally, increased predation of white-tailed prairie dogs by raptors may result in reduced availability of prey for black-footed ferrets, which prey primarily on prairie dogs.

Other indirect effects of the Project on pygmy rabbits and prairie dogs may include changes in the distribution and availability of grasses and forbs selected as forage in areas affected by Project development. A potential for increased pygmy rabbit and prairie dog mortality resulting from vehicular traffic and hunting in areas affected by project development also may occur; as well as impacts on foraging success, energetic strategies, dispersal rates, population diversity, and abundance (Hanser et al. 2011a).

Reptiles

Direct Effects

Direct effects on reptiles that may occur as a result of construction, operation, and maintenance of the Project include potential for reptile mortality and injury as well as loss of suitable refuge habitat. Loss of refuge habitat resulting from removal of vegetative cover and subsequent unique microclimates and degradation of foraging and reproductive habitat for reptile species due to Project activities that may affect the ability of reptiles to avoid predation, maintain current reproductive rates, and persist in the Project area are described in Section 3.2.7.

Indirect Effects

Indirect effects on reptiles that may occur as a result of construction, operation, and maintenance of the Project include changes to plant community composition, fire regimes, and habitat effectiveness and microclimate through invasive weed species introduction, an increase in human presence, and noise levels are described in Section 3.2.7.

In addition to effects on reptiles described in Section 3.2.7, indirect effects of Project construction and maintenance on special status reptiles include potential weed introduction and alteration of native vegetation during ground-disturbing activities (vegetation clearing, construction of access roads, tower structures, and other Project features). Introduction of invasive plant species could affect the habitat effectiveness[3] of a given area, specifically in providing cover from avian and terrestrial predators or eliminate open inter-shrub space required for movement and reduction in predator detection between refuges (Newbold 2005; Stebbins 2003; Vitt and Pianka 1994).

[3]The degree to which a patch of habitat is able to support an animal or group of animals and how this ability is affected by human disturbance (Gaines et al. 2005).

Mitigation Planning and Effectiveness

Design features of the Proposed Action and site-specific selective mitigation measures would be used under all alternative routes to reduce effects of the Project on special status wildlife. This section describes design features and selective mitigation measures that would be used to reduce effects on special status wildlife and describes why these measures should be effective at reducing adverse Project effects. If determined to be necessary under applicable law, regulation, or BLM, USFS, or other cooperating agency policy, additional mitigation measures would be developed and applied to reduce effects. The results of preconstruction surveys would be used by the agencies to refine the application of design features and selective mitigation measures and further inform the POD.

As described in Appendix J, the BLM would require the Applicant to monitor the implementation and effectiveness of conservation measures (i.e., design features of the Proposed action for environmental protection, selective mitigation measures, and other measures implemented to avoid, minimize, and mitigate for resource impacts) and would implement adaptive management for biological resources, as needed. Detailed monitoring requirements would be outlined in a biological resource monitoring plan, which would be developed with the BLM and cooperating agencies and included in the POD. This plan also will include monitoring requirements for federally listed wildlife species that are identified through the Section 7 consultation process.

The BLM and USFS have proposed RMP and LRMP amendmentsto manage sage-grouse habitats in the Project area (BLM and USFS 2015 a, b, c). If approved, the BLM RMP and USFS LRMP amendments would adopt conservation measures to protect greater sage-grouse and its habitat on BLM- and USFS-administered lands and would restrict the type and location of activities that could be authorized in sage-grouse habitat. The conservation measures, avoidance criteria, and mitigation strategies included in the proposed BLM RMP and USFS LRMP sage-grouse amendments were developed concurrently with the preparation of the EIS for the Project. The proposed BLM RMP and USFS LRMP sage-grouse amendments and the EIS for the Project incorporate the same mitigation hierarchy objectives of avoiding, minimizing, and compensating for impacts on sage-grouse, consistent with BLM's interim policy on regional mitigation (IM No. 2013-142, Interim Policy, Draft - Regional Mitigation Manual Section – 1794) (June 13, 2013), using the best available information. Due to overlapping timelines and objectives for the proposed BLM RMP and USFS LRMP sage-grouse amendments and the Project, any BLM RMP and USFS LRMP amendments will not apply to portions of the Project in Wyoming and Colorado and in areas of Utah that are colocated with the proposed TransWest Express Transmission Line Project. In this EIS, however, the BLM has analyzed a similar suite of mitigation measures for the greater sage-grouse and its habitat described in this section and will consider the implementation of those mitigation measures in the ROD for this Project, with a goal of achieving a net conservation benefit for the greater sage-grouse and its habitat. In addition, the Applicant has committed to comply with seasonal restrictions included in the proposed BLM RMP and USFS LRMP amendments, provide compensatory mitigation for unavoidable impacts on sage-grouse and its habitat, and implement additional site-specific mitigation measures (refer to Appendix K).

Design features effective at reducing potential adverse impacts on special status wildlife resources including features 3, 4, 6, 7, 8, 26, 27, 28, 30, and 39 are described in this section (presented in more detail in Table 3-102). In addition to listed design features, the BLM or the appropriate land-management agency would implement resource avoidance measures as needed to meet resource-management objectives if sensitive resources are located near a geotechnical boring location as described in Section 2.4.2.2. Resource-avoidance measures for the geotechnical investigation would include (1) monitor geotechnical investigation activities, (2) adjust activities to occur outside of seasonal restrictions, (3) use alternative access or drilling methods, (4) relocate the borehole, and (5) abandon the geotechnical site.

- **Design Feature 3 (management of special status species).** Special status species would be considered in accordance with management policies set forth by management agencies. Surveys for special status wildlife would be conducted in suitable habitat along the selected route using protocols approved by the BLM, USFS, or other cooperating agency. Impact avoidance and minimization measures would be applied to avoid adverse impacts on special status wildlife populations and habitat where identified, which may include altering the placement of roads or towers, as practicable. Monitoring of identified special status wildlife populations and habitat also may be required. This design feature will minimize adverse impacts on special status wildlife to the extent practicable through the identification of populations and habitats prior to construction and the creation of site-specific avoidance and mitigation plans.
- **Design Feature 4 (avian-safe design standards).** All new or rebuilt transmission facilities are constructed to avian-safe design standards (i.e., *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006); *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012); *PacifiCorp's Avian Protection Plan*, updated June 2011 (PacifiCorp 2011). This design feature would limit the potential for avian wildlife collision and reduce the potential for avian injury and mortality. Mortality from electrocution is unlikely as the distance between conductors and the distance between energize conductors and grounded equipment is built to APLIC standards for high-voltage transmission lines (500kV and 345kV) and is greater than the wingspan of all avian species likely to occur in the Project area.
- **Design Feature 6 (seasonal restrictions for nesting migratory birds).** Construction and maintenance activities would avoid areas supporting actively nesting birds during the migratory bird nesting season between February 1 and August 31; however, dates may vary depending on species, current environmental conditions, results of preconstruction surveys, and approval by agency biologists or agency-approved environmental inspectors. This design feature will restrict human activity to avoid disturbing migratory bird nests during species specific breeding seasons.
- **Design Feature 7 (breeding bird and nest surveys).** In the event that vegetation clearing and other construction and maintenance activities do not avoid the nesting season for migratory birds (between February 1 and August 31), surveys for active migratory bird nests would be performed and a spatial nest buffer would be placed around each active nest until such time as the status of the nest is determined through monitoring to be no longer occupied. Based on the best available scientific information, appropriate spatial nest buffers (by species or guild), and nest monitoring requirements would be identified through coordination with the FWS and other appropriate agencies and would be provided in a nest management plan in the POD. This design feature would minimize construction-related disturbance by avoiding nest locations of migratory birds during the nesting season by determining active nest locations within 7 days of ground-disturbing activities and avoiding these areas.
- **Design Feature 8 (raptor protection restrictions).** FWS and BLM guidelines for raptor protection during the breeding season (Tables J-12 through J-14 in Appendix J) would be followed, including seasonal and spatial buffers around nests, eagle roosts, and winter concentration areas. This design feature would limit Project-related spatial and temporal disturbance to raptors during sensitive life-cycle periods to avoid human disturbance and increased noise levels in the vicinity of nest sites and limit the potential for nest abandonment or a decrease in nest success. Exceptions to temporal and spatial buffer restrictions during Project construction could be granted if determined to be appropriate by a qualified biologist and approved by the BLM Authorized Officer and other cooperating agencies. The BLM may require additional mitigation if exceptions are granted.
- **Design Feature 26 (vehicle access restriction).** All construction vehicle movement would be restricted to designated access roads based on avoidance of known noxious weed occurrences to the extent practicable. This design feature would minimize disturbance to special status wildlife

habitat and populations by limiting vehicular access and would minimize the risk of noxious weed introduction and spread, as well as the potential for subsequent changes to natural wildfire regimes as a result of alterations in plant community composition that can increase the frequency and intensity of fire.

- **Design Feature 27 (construction activity access restriction).** All construction vehicle movement would be contained in a predetermined area. This design feature would minimize disturbance to special status wildlife and their habitat from construction activities and minimize risk of noxious weed introduction and the potential for subsequent changes to natural wildfire regimes resulting from alterations in plant community composition that can increase the frequency and intensity of fire.
- **Design Feature 28 (personnel instruction).** All Project personnel would be instructed in the importance, purpose, necessity, and Project-specific requirements for protection of natural resources highlighting the importance of special status wildlife resources, federal and state laws and regulations that protect them and the appropriate protection measures for them. Instructions also would be given for reporting and stop work procedures in the event of a resource conflict. This would minimize impacts on special status wildlife habitat and populations throughout the Project corridor; especially in occupied habitat for sensitive wildlife species that may not have been identified prior to the start of construction.
- **Design Feature 30 (hazardous materials restrictions).** Hazardous materials would be contained and removed to a disposal facility, and not drained into the ground, streams, or drainages. This design feature will minimize degradation of special status wildlife habitats due to Project activities by limiting the risk of the potential contaminants introduced into the environment that could adversely affect special status wildlife.
- **Design Feature 39 (vehicle speed limit for overland travel).** To minimize vehicle collisions with special status wildlife, a speed limit of 15 mph would be employed on overland access routes.

In addition, Selective Mitigation Measures 2, 4, 5, 6, 7, 11, 12, 13, 14, and 15 (Table 2-13) would be implemented to reduce potential adverse impacts on certain federally listed special status wildlife species. These design features are described and the rationale for them is presented in this section.

- **Selective Mitigation Measure 2 (avoidance of sensitive resources).** No blading of new access roads would occur in certain special status wildlife habitats (e.g., riparian areas and wetlands). Existing roads would be used in these areas to the extent feasible. Through avoidance of clearing or construction of new access roads in sensitive resource areas, this mitigation measure would minimize habitat loss, degradation, and fragmentation and reduce the risk of habitat fragmentation and consequent isolation of subpopulations, which could adversely affect the viability of special status wildlife populations.
- **Selective Mitigation Measure 4 (minimization of tree clearing).** Trees and other vegetation would be removed selectively (e.g., edge feathering), and trees more than 5 feet tall would be removed selectively in riparian nesting habitats. By minimizing the number of trees cleared in sensitive habitats, this mitigation measure would reduce impacts on timber resources, limit special status wildlife habitat fragmentation, and protect raptor nesting habitats to the extent feasible.
- **Selective Mitigation Measure 5 (minimization of new or improved Project accessibility).** All new or improved access not required for maintenance would be closed or rehabilitated following Project construction in accordance with prior agency approval and using the most effective and least environmentally damaging methods. This mitigation measure would restore natural

contours, vegetation, and potential habitat and limit public access to special status wildlife populations, thereby reducing post-construction anthropogenic disturbance in these areas.

- **Selective Mitigation Measure 6 (tower design modification).** The type of transmission line tower structure used could be modified, if practicable and consistent with the APLIC and BLM standards, from a lattice steel structure to a tubular H-frame steel structure in areas where increased raptor and raven predation on special status wildlife (e.g., sage-grouse and white-tailed prairie dog/black-footed ferret) are a particular concern. Tower design modification would not eliminate perching, but could reduce the number of perch sites on the transmission line structures available to raptors and ravens and increase the effectiveness of Selective Mitigation Measure 14 (perch deterrents and flight diverters) of reducing raptor and ravens use of the transmission line as a hunting perch. Used in conjunction with Selective Mitigation Measure 14, Selective Mitigation Measure 6 could reduce the effects of increased predation on special status wildlife. However, the effectiveness of tower design modification in reducing predation pressure and impacts on special status species has not been demonstrated in the scientific literature. Refer to Selective Mitigation Measure 14 for a more detailed discussion of issues relating to selective mitigation for avian predation. The Applicant will work with the BLM, state wildlife agencies, and FWS to identify appropriate locations should tower design modification be proposed.
- **Selective Mitigation Measure 7 (spanning or avoiding of sensitive features).** Project structures would be located to allow conductors to span or avoid identified sensitive features such as occupied habitats for special status wildlife species. This mitigation measure would avoid sensitive habitats to the extent practicable. By reducing impacts on sensitive habitats such as riparian areas that some special status wildlife (e.g., southwestern willow flycatcher and yellow-billed cuckoo) are limited to and utilize as movement corridors; potential loss, degradation, and fragmentation of habitat in the Project area would be reduced,. thereby reducing the risk of habitat fragmentation and consequent isolation of subpopulations, which can adversely affect the viability of special status wildlife populations.
- **Selective Mitigation Measure 11 (minimization of right-of-way-clearing).** In special status wildlife occupied areas, the right-of-way width may be modified to protect wildlife. This mitigation measure would limit the amount of vegetation cleared from the right-of-way and minimize abruptness in changes in vegetation community composition between the right-of-way and adjacent habitat, which may minimize degradation of habitat quality; and reduce impacts on foraging and breeding behavior and movement potential of special status wildlife species.
- **Selective Mitigation Measure 12 (seasonal and spatial wildlife restrictions).** Construction and maintenance activities would be restricted in designated areas and during critical periods, (e.g., wintering habitats and specific breeding or nesting seasons). For sensitive wildlife species, this selective mitigation measure would minimize disturbance to special status wildlife by limiting human activity, noise and disturbance during sensitive life-cycle periods and reduce the risk of adverse impacts on breeding success and species survival rates.
- **Selective Mitigation Measure 13 (overland access).** Drive-and-crush (vehicular travel to access a site without significantly modifying the landscape) and/or clear-and-cut travel (removal of vegetation to provide suitable access for equipment) would occur in areas where no grading would be needed to access work areas. This would reduce the amount of ground-disturbing activities (e.g., surface soil removal, vegetation cropping/cutting) landscape modification, risk of introduction of invasive weeds, and special status wildlife habitat fragmentation. Modification of sagebrush vegetation communities, which provide necessary cover and forage for habitat suitability, resulting from vegetation clearing, would be limited to the extent practicable in habitats occupied by sagebrush obligate special status wildlife species like greater sage-grouse.

- **Selective Mitigation Measure 14 (perch deterrents and flight diverters).** Where consistent with agency guidelines, APLIC standards, and special status species management objectives, raptor perch deterrents could be installed on transmission line structures in areas where increased raptor and raven predation on special status wildlife is a concern. Perch deterrents were designed for lower voltage transmission lines as a tool to manage where birds perch to minimize the risk of electrocutions. Perch deterrents have been shown to decrease the duration of perch events and the probability of perching, but have not been shown to entirely prevent perching by avian predators (Slater and Smith 2010; Lammers and Collopy 2007). Some comments from agency staff and the public have suggested that perch deterrents also should be useful in decreasing avian predation on sensitive prey species by reducing avian use of power lines. However, the effectiveness of perch deterrents in reducing predation pressure and impacts on special status species has not been demonstrated in the scientific literature. In some cases, perch deterrents are used as nesting sites for avian predators and can inadvertently increase avian use of power lines (APLIC 2006).

  The FWS supports the use of perch deterrents as a tool to decrease perching opportunities on a case-by-case basis after other efforts to avoid, minimize, and mitigate impacts from increased perching opportunities are complete (FWS 2014d). The effectiveness of perch deterrents is based on appropriate design, proper siting, and a commitment for long-term maintenance. Perch deterrents may be most effective in areas where other tall structures are not present on the landscape. In areas where new transmission lines are colocated with existing lines, perch deterrents may be ineffective because of the perching opportunities provided by the existing transmission lines. The Project has been designed to be colocated with existing and planned transmission lines where possible, in part to reduce the proliferation of new perching sites for avian predators in additional areas across the landscape.

  FWS field office approved raptor perch deterrents could be used in conjunction with Selective Mitigation Measure 6 (tower design modification). When used together, these mitigation measures could reduce the number of perch sites available on the transmission line structures and deter raptors and ravens from perching on the transmission line towers. These mitigation measures could reduce raptor and raven use of the transmission line structures as hunting perches and reduce the effects of increased predation on special status wildlife. However, there are no studies demonstrating the effectiveness of combining perch deterrents with tower design modification in reducing predation on special status wildlife. The Applicant will work with the BLM, state wildlife agencies, and FWS to identify appropriate design, locations and long-term management should perch deterrents be proposed.

- Shield wires, guy wires, and OPGW along portions of the transmission line that have a potential for avian collisions would be marked with flight diverters or other devices approved by FWS, BLM, or USFS in accordance with agency requirements and in compliance with recommendations made in the Avian Power Line Interaction Committee report, *Reducing Avian collisions with Power Lines: State of the Art in 2012* (APLIC 2012). Segments of the transmission line that would cross through, or are adjacent to, waterfowl and general migratory pathways or sensitive habitat for avian species may be identified in the future and marked to reduce the risk of avian collisions. The additional marking/placement of flight diverters or other agency approved devices along specific segments would be determined on consultation with the appropriate agencies. This design feature would minimize the risk of avian injury and mortality due to collision with Project features that crosses sensitive avian habitats in the Project area.
- **Selective Mitigation Measure 15 (limitation of access to sensitive habitats).** Where feasible, access roads that would cross sensitive habitats (e.g., special status WMAs) would be gated or otherwise blocked to limit public access. After construction, this mitigation measure would limit human access and activity, and disturbance of special status wildlife and their habitats during critical life-cycle periods.

Table 3-102 lists key issues included in interdisciplinary comparison of alternative routes. Other special status wildlife resources would be inventoried and selective mitigation measures applied in accordance with applicable resource BLM, USFS, and other cooperating agency protection policies.

TABLE 3-102
SPECIAL STATUS WILDLIFE DESIGN FEATURES AND SELECTIVE MITIGATION MEASURES

Potential Special Status Wildlife Habitats	Relevant Design Feature	Selective Mitigation Measures Applied
Birds		
Southwestern willow flycatcher potential habitat	3, 6, 26, 27, 28, 30, 39	2, 4, 5, 7, 12
Mexican spotted owl potential habitat	3, 4, 6, 8, 26, 27, 28, 30, 39	2, 4, 5, 7, 12
Greater sage-grouse core areas or priority habitat	3, 4, 6, 26, 27, 28, 30, 39	5, 12, 13
Greater sage-grouse general habitat and transmission line corridors designated in Wyoming Executive Order 2011-5	3, 4, 6, 26, 27, 28, 30, 39	12
Greater sage-grouse habitat within 4 miles of leks in core areas or priority habitat	3, 4, 6, 26, 27, 28, 30, 39	5, 12, 13
Greater sage-grouse habitat within 4 miles of leks outside core areas or priority habitat	3, 4, 6, 26, 27, 28, 30, 39	5, 12, 13
Yellow-billed cuckoo potential habitat and proposed critical habitat	3, 4, 6, 7, 26, 27, 28, 30, 39	2, 4, 5, 7, 12
Mountain plover potential habitat	3, 6, 7, 26, 27, 28, 39	12
Raptor nests and winter roosts	3, 7, 8, 39	4, 5, 12, 15
Mammals		
Black-footed ferret management areas	3, 26, 27, 28, 30, 39	5, 15
Pygmy rabbit potential habitat	3, 26, 27, 28, 30, 39	2, 5, 11
White-tailed prairie dog potential colonies	3, 26, 27, 28, 30, 39	7

Effects Analysis

Methods for Analysis to Support Interdisciplinary Comparison of Alternative Routes

The analysis of key issues raised by the public and agencies during scoping (Table 3-96) and considered in the interdisciplinary comparison of alternative routes, resulted in the development of criteria that were used to assess initial and residual impacts on special status wildlife. Analysis of potential impacts of the Project on other special status wildlife issues where comparable data were not available for all alternative routes did not include impact criteria. Methods used in the analysis of these issues are described under the Additional Analysis sections of potential effects for each alternative route by state.

Criteria for Assessing Level of Impacts

Criteria for assessing the level of potential Project impacts were developed in collaboration with the Agency Interdisciplinary Team for key wildlife issues included in the interdisciplinary comparison of alternative routes (Table 3-103). Impact criteria are based on considerations of a species legal status, regulatory protection, and susceptibility to temporary or permanent disturbances.

TABLE 3-103
SPECIAL STATUS WILDLIFE CRITERIA FOR ASSESSING LEVEL OF IMPACTS

Level of Impacts	Description
High	▪ Impacts that would severely limit the long-term sustainability of populations (e.g., impacts on only known populations or to isolated populations vital to conservation efforts) ▪ Loss or adverse modification of large portions of occupied suitable habitat ▪ Loss or adverse modification of designated critical habitat
Moderate	▪ Impacts that would have adverse effects on species but would not severely limit the long-term sustainability of populations ▪ Loss or adverse modification of unoccupied suitable habitat
Low	▪ Impacts that would have only minor adverse effects on species and would not limit the long-term sustainability of populations (e.g., indirect effects or impacts in areas of pre-existing disturbance) ▪ Indirect effects or disturbance in areas of pre-existing disturbance
Nonidentifiable	▪ Locations along the alternative route reference centerlines where none of the resources considered in the analysis of level of impacts on special status wildlife (black-footed ferret, white-tailed prairie dog, pygmy rabbit, mountain plover, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, and greater sage-grouse and associated special status habitats) occur

Initial Impacts

The criteria for assessing the level of a potential effect on special status wildlife resources (i.e., a particular species or habitat type) that could result from implementation of the Project is used as the basis for assessing initial and residual impacts. Design features of the Proposed Action (Table 3-102) would reduce impacts on special status wildlife resources and were considered when assessing potential impacts on special status wildlife resources. Based on the level of a potential effect on a special status wildlife resource, initial impacts were categorized (Table 3-104) based on the criteria descriptions presented in Table 3-103.

Residual Impacts

Residual impacts include those impacts on special status wildlife resources that are anticipated after the application of selective mitigation measures described in the Mitigation Planning and Effectiveness subsection of Section 3.2.8.4.2. The level of potential residual impacts on special status wildlife resources associated with implementation of the Project was assessed using the criteria presented in Table 3-103. Application of selective mitigation measures is expected to reduce the level of anticipated impacts. A summary of anticipated initial and residual impacts on special status wildlife resources, as well as the selective mitigation measures applied, are presented in Table 3-104.

TABLE 3-104
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON SPECIAL STATUS WILDLIFE RESOURCES

Biological Resource	Design Features	Initial Impact[1]	Selective Mitigation Measure	Residual Impact[1, 2]
Birds				
Potential southwestern willow flycatcher habitat	3, 6, 26, 27, 28, 30, 39	High	2, 4, 5, 7, 12	Moderate
Potential Mexican spotted owl habitat	3, 4, 6, 8, 26, 27, 28, 30, 39	High	2, 4, 5, 7, 12	Moderate

TABLE 3-104
SUMMARY OF INITIAL AND RESIDUAL IMPACTS
ON SPECIAL STATUS WILDLIFE RESOURCES

Biological Resource	Design Features	Initial Impact[1]	Selective Mitigation Measure	Residual Impact[1, 2]
Greater sage-grouse core areas or priority habitat	3, 4, 6, 26, 27, 28, 30, 39	High	5, 12, 13	High
Greater sage-grouse general habitat and transmission line corridors designated in Wyoming Executive Order 2011-5	3, 4, 6, 26, 27, 28, 30, 39	Low	12	Low
Greater sage-grouse habitat within 4 miles of leks in core areas or priority habitat	3, 4, 6, 26, 27, 28, 30, 39	High	5, 12, 13	High
Greater sage-grouse habitat within 4 miles of leks outside core areas or priority habitat	3, 4, 6, 26, 27, 28, 30, 39	Moderate	5, 12, 13	Moderate
Potential yellow-billed cuckoo habitat and proposed critical habitat	3, 4, 6, 7, 26, 27, 28, 30, 39	High	2, 4, 5, 7, 12	Moderate
Potential mountain plover habitat	3, 6, 7, 26, 27, 28, 39	Moderate	12	Low
Mammals				
Black-footed ferret habitat	3, 4, 26, 27, 28, 30, 39	High	5, 15	High
Potential pygmy rabbit habitat	3, 4, 26, 27, 28, 30, 39	Moderate	2, 5, 11	Moderate
Potential white-tailed prairie dog colony	3, 4, 26, 27, 28, 30, 39	Moderate	7	Moderate

NOTES:
[1]Impact levels, including initial and residual impact levels, and the criteria for assessing level of impacts on each individual resource were developed in collaboration with and a consensus by the appropriate cooperating agencies, including the U.S. Fish and Wildlife Service and the Bureau of Land Management.
[2]Residual impact levels (low/moderate/high) may remain the same as initial impact levels, but the extent or amount of the resource affected would be reduced after application of appropriate selective mitigation measures.

Despite efforts to avoid or minimize potential effects on sage-grouse, residual impacts associated with implementation of the Project on sage-grouse will remain high. If the BLM selects an action alternative, the BLM will require the Applicant complete a Sage-grouse Mitigation Plan that meets BLM standards for sage-grouse management and compensatory mitigation (refer to Appendix K). BLM's standards would require that the Project be designed and built to minimize impacts on sage-grouse. Compensatory mitigation would be required to account for all direct and indirect effects on sage-grouse that may occur as a result of the Project. The amount of compensatory mitigation required would provide an overall net conservation benefit for sage-grouse from the construction and operation of the Project. In reviewing the Applicant's mitigation plan, the BLM would coordinate with the FWS and the applicable state wildlife agencies.

The FWS developed a checklist using the Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report (FWS 2013) and the Greater Sage-grouse Range-wide Mitigation Framework (FWS 2014) for reviewing new energy or infrastructure projects where such projects and activities occur in sage-grouse PACs, Preliminary Priority Habitat, Preliminary General Habitat, and/or

state-designated sage-grouse habitat. The checklist is intended to help FWS determine if proposed energy projects and the associated infrastructure are consistent with the recommendations and guiding concepts provided in the Conservation Objectives report and the Rangewide Mitigation Framework. The FWS checklist is one of the tools that BLM would use to evaluate the adequacy of the Applicant's mitigation plan.

Methods of Additional Analysis of Potential Impacts

The extent of loss of special status wildlife habitat (in acres) due to Project features was estimated to present a more explicit measure of impacts on special status wildlife resources. The total extent of disturbance (in acres) due to construction of features such as roads, transmission line towers, and other Project facilities was estimated over the entire length of an alternative route based on the access model developed for the Project and the Applicant's Project description (refer to Section 2.2.2). Disturbance associated with construction of the Project was assumed to occur at a constant density (acres) per mile and was calculated for each alternative route based on the total estimated disturbance and total length of each alternative route. The estimated density of disturbance (in acres per mile) for each alternative route was used to calculate the extent of effects on special status wildlife habitat (in acres) that could occur for each length of habitat crossed.

As the estimated density of disturbance per mile in the alternative route study corridors varies by alternative route, the centerline of the alternative routes that cross the same length of special status wildlife habitat may vary in estimated area of disturbance (in acres) to the habitat.

As comparable spatial data for some special status raptors and migratory birds are not available along all alternative routes, the best available spatial data were provided by the BLM and cooperating agencies for special status species likely to occur in the Project area. All spatial data collected and used in the analysis of potential effects are identified in Table 3-97. Results of additional known special status raptor and migratory bird habitats/nests located within 1 mile of the alternative routes are presented in Tables 3-107, 3-115, and 3-126.

To further evaluate the Project's potential effects on sage-grouse, the numbers of sage-grouse leks within 2, 4, and 11 miles of each alternative route were calculated. The percentage of each state's estimated sage-grouse population that attend leks located within 4 miles of each alternative route was estimated using the average peak male lek count data over the last 5 years, provided by the state wildlife agencies, to evaluate the relative importance of leks that could be affected by the Project to statewide sage-grouse populations. Lek counts are widely used to track trends in sage-grouse populations; however, concern regarding their usefulness has been expressed (Applegate 2000; Beck and Braun 1980; Walsh et al. 2004). Issues raised include (1) imprecise lek definitions, (2) the possibility that leks surveyed are not representative of the population, (3) inconsistency in following established lek count protocols across all or subsets of leks counted, and (4) inaccurate counts of the numbers of grouse using a lek (Johnson et al. 2011). However, lek counts are the most widely used method for tracking sage-grouse populations, and generally provide a reliable basis for inference regarding population trends at broader spatial scales (Connelly et al. 2003b).

The average peak number of male sage-grouse observed on each lek in Wyoming, Colorado, and Utah during the most recent 5 years for which data were available was calculated (2008 to 2012 for Colorado and Wyoming, 2007 to 2011 for Utah). Not all leks were counted in all years and the average peak male counts were calculated based on the number of years each lek was counted during the 5-year period. The results were summed to provide an average peak number of male grouse counted in each state during the 5-year period. For each alternative route, the 5-year average peak male count for leks located within 4 miles of the alternative route also was summed and compared to the statewide average to estimate the fraction of the statewide sage-grouse population that attend leks within 4 miles of the alternative route.

The same methods used to conduct these analyses on a statewide basis were used to analyze impacts on sage-grouse and sage-grouse habitat in the seven geographically separate sage-grouse populations crossed by the alternative routes in Utah. Sage-grouse habitat in northwestern Colorado and south-central Wyoming is contiguous (MV-12) and distinct population boundaries are not recognized by the BLM or state wildlife agencies. Therefore, additional individual population-level analyses beyond the statewide analyses described previously were not warranted in Colorado and Wyoming.

3.2.8.5 Results

Similar types of impacts on special status wildlife resources associated with the construction, operation, and maintenance of the Project would be anticipated for all action alternatives. Differences in the magnitude and extent of impacts anticipated among individual alternative routes are driven by the type and quantity of special status wildlife resources present along each alternative route and the degree that potential effects can be mitigated or avoided.

3.2.8.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.8.5.2 Impacts Common to All Action Alternatives

In addition to the species discussed in detail in this section, a wide range of special status wildlife species could be affected by the alternative routes, including Canada lynx, gray wolf, and wolverine.

Canada lynx are primarily found in high-elevation coniferous forest. While the Project does not cross any areas known or likely to be occupied by resident Canada lynx, the Project crosses intermountain valleys that may be used by dispersing Canada lynx. In Wyoming, the majority of lynx observations are in western Wyoming in the Wyoming and Salt River ranges and north through the Tetons and Absaroka ranges in and around Yellowstone National Park (FWS 2014e). In Colorado, Canada lynx were reintroduced from 1999 to 2006. A predictive map of lynx habitat use indicates that lynx could occupy habitats in Colorado east of the Project area in the Routt and White River National Forests (CPW 2012j). In Utah, Uinta-Wasatch-Cache National Forest contains designated Canada lynx analysis units and linkage areas, though no Canada lynx are known to occur there (Jorgensen 2013). Released Canada lynx have been tracked dispersing across northern Utah in the high Uinta Mountains, but none are known to have remained permanently in Utah (UDWR 2005). Canada lynx hair was found along the alternative routes in the Manti-La Sal National Forest in 2002 south of the Project area (UDWR 2005), though no Canada lynx have been reported since. If lynx do disperse through the Project area, they are likely to move from the existing population in the Greater Yellowstone area or the reintroduced population in Colorado. Lynx would be anticipated to follow pathways that minimize human interaction and remain at high elevations, such as by following the Wind River Range, Ferris Mountains, and the Snowy Range in Wyoming, or traveling through the Wasatch and Uinta Mountains in Utah.

Gray wolves are habitat generalists and historically used or traveled through all habitat types in the Project area. However, resident gray wolves are now generally limited to high-elevation areas or large protected areas with minimal human conflicts, and the Project does not cross any areas known or likely to be occupied by resident gray wolves. There are currently no known resident gray wolves in Utah or Colorado, although sightings are reported anecdotally on occasion. In the summer of 2014, a single male gray wolf originating in northern Idaho dispersed through the Uinta Mountains in Utah, although its tracking collar failed and its current location is unknown (Prettyman 2014a). A single female gray wolf dispersed from Wyoming to the Grand Canyon in 2014 and was subsequently shot by a hunter near Beaver, Utah (Pettyman 2014b). Near the Project area in 2003, a single gray wolf was reported near Baggs, Wyoming. This wolf was a confirmed identification by WGFD biologists; however, an exact

location is not known. The Project does cross intermountain valleys that may be used by dispersing gray wolves.

Wolverines have the potential to occur in alpine areas at high elevations. The Project does not cross any areas known or likely to be occupied by wolverines, but dispersing wolverines could use intermountain valleys crossed by the Project. Wolverines in Wyoming are part of the northern Rocky Mountain population (78 FR 65248). In Colorado and Utah, wolverines are believed to have been extirpated since the early 1900s (78 FR 65248). One male wolverine was detected moving from the southern Greater Yellowstone area of Wyoming into the southern Rocky Mountains of Colorado, but there is no evidence that a wolverine population currently exists in Colorado (78 FR 65248). In Utah, a wolverine was detected at a bait station on the north slope of the Uinta Mountains in 2014, although it is not known whether wolverines are residents or temporarily dispersing into Utah (UDWR 2014b).

Direct and indirect impacts on Canada lynx, gray wolf, and wolverine are expected to be similar to the effects described previously in Section 3.2.8.4.2 under the heading Mammals. If these species disperse through the Project area, human presence, noise, and vehicle use associated with Project preconstruction, construction, operations, and maintenance activities could increase the potential for disturbance and vehicle mortality. Following construction, effects would be limited to periodic disturbance and noise associated with vehicle use and human presence during maintenance and operation activities, including inspections, repairs, and vegetation management.

Other special status wildlife species that may be present in the Project area and may be affected are described in Appendix J, Section J.6.2. Limited data are available to determine presence and relative abundance of the many special status wildlife species in the Project area or to quantify many of the types of effects described in Section 3.2.8.4.2. However, effects on these species would be avoided, minimized, and mitigated to the extent practicable using the methods described in Section 3.2.8.4.2.

3.2.8.5.3 345-kilovolt Ancillary Transmission Components

The 345kV ancillary transmission line components would be located in the area between the Mona and Clover substations west of the town of Mona, Utah. Most of the 345kV ancillary transmission line components would be in an existing right-of-way. The components would not affect habitat for any of the special status wildlife species analyzed in detail as none occurs in this area. However, special status wildlife species identified in Table J-10 and described in Appendix J, Section J.6, could be present along all 345kV ancillary components and could be affected by construction of these facilities. The types of potential effects that may occur are described in Section 3.2.8.4.

3.2.8.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The WYCO alternative routes are located in the southern Wyoming Basin and northern Colorado Plateau ecoregions and cross Sweetwater and Carbon counties in Wyoming and Moffat and Routt counties in Colorado. Climate along the WYCO alternative routes is classified as cold desert with warm to hot summers with low humidity, and cool to cold dry winters. Habitats in this portion of the Project area are dominated by arid shrub/shrub-steppe and big sagebrush. Pinyon-juniper woodlands and perennial grasslands are located east of Dinosaur National Monument; and aspen and mountain shrub woodlands are found west of the Routt National Forest in Colorado. Areas affected by previous human activities are concentrated near the cities of Hanna, Rawlins, and Sinclair in Wyoming and Craig in Colorado (MV-10a, MV-11a, and MV-12a).

All of the WYCO alternative routes begin at the Aeolus Substation near Medicine Bow, Wyoming, and end along U.S. Highway 40 in Colorado. A description of the types of vegetation communities crossed by the WYCO alternative routes and their existing condition is included in Section 3.2.7 for the WYCO alternative routes.

Special status wildlife species known to occur or that may occur in the vegetation communities crossed by the WYCO alternative routes include black-footed ferret, greater sage-grouse, pygmy rabbit, Mexican spotted owl, white-tailed prairie dog, yellow-billed cuckoo, mountain plover, and other species (including but not limited to Wyoming pocket gopher and burrowing owl) described in Appendix J, Section J.6. Southern Wyoming and northwestern Colorado contain some of the highest sage-grouse population densities rangewide (Doherty et al. 2010) and the WYCO alternative routes cross designated sage-grouse Priority Areas for Conservation, core areas, priority habitats, habitats within 4 miles of sage-grouse leks, brood-rearing, and winter habitats (Table 3-106).

Black-footed ferrets may occur in the Shirley Basin (Wyoming) and Wolf Creek (Colorado) reintroduction management areas. However, all black-footed ferret observations in the Shirley Basin reintroduction management area have occurred in grassland habitats north and east of the Project area; reintroduced ferrets in the Wolf Creek management area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012); and the likelihood of ferrets being located in these areas is believed to be very low.

Pygmy rabbits are common in sagebrush habitats in southern Wyoming and likely to occur throughout the Project area in Carbon and Sweetwater counties (EPG 2013). Pygmy rabbits were observed only recently in Colorado and may occur in sagebrush habitats crossed by the Project in Moffat County (Beauvais 2011).

Mexican spotted owls are not known to occur in southern Wyoming and are extremely uncommon in northwestern Colorado. Mexican spotted owls have been occasionally detected in Dinosaur National Monument (FWS 2011de), and may use deep canyon habitats in other areas of northwestern Colorado as well.

White-tailed prairie dogs are locally common in southern Wyoming and northwestern Colorado, though plague, management as a pest species, and habitat loss has limited the species distribution and population size.

Yellow-billed cuckoos may occur in the limited riparian habitats supported by major rivers and perennial and intermittent streams throughout the Project area. Alternative WYCO-D crosses a proposed critical habitat unit for yellow-billed cuckoo that includes a 20-mile-long segment of the Yampa River from near the town of Craig in Moffat County, Colorado, to near the town of Hayden in Routt County, Colorado.

Mountain plovers are known to use disturbed, grassland, and shrubland habitats (Knopf and Miller 1994) in Wyoming and Colorado and can be locally abundant during the breeding season (Smith and Keinath 2004).

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

In many areas, Alternative WYCO-B in Wyoming is located adjacent to existing disturbances including existing oil and gas development, interstate highways, transmission lines, and unpaved roads in some areas of Wyoming. However, in several areas, Alternative WYCO-B cross habitats that have been largely unaffected by previous anthropogenic development between the Aeolus Substation and I-80, where the alternative route would be located in the transmission corridor designated by Wyoming Executive Order 2011-5, and in the vicinity of Flat Top Mountain between I-80 and the Wyoming/Colorado state

line. The dominant vegetation communities crossed by Alternative WYCO-B are big sagebrush and shrub/shrub-steppe with smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, pinyon-juniper, riparian areas (Section 3.2.5).

The extent of potential habitat for special status wildlife species that would be crossed by each WYCO alternative route is presented in Tables 3-105 and 3-106.

TABLE 3-105
ALTERNATIVE ROUTE COMPARISON SPECIAL STATUS WILDLIFE FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Special Status Mammals (miles crossed)			Special Status Birds (miles crossed)				
					Potential Habitat			Yellow-billed Cuckoo	
		Black-footed Ferret Management Areas	White-tailed Prairie Dog Potential Colony	Pygmy Rabbit Potential Habitat	Mountain Plover	Mexican Spotted Owl	Southwestern Willow Flycatcher	Potential Habitat	Proposed Critical Habitat
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	19.5	18.2	92.3	49.7	0.0	0.0	0.0	0.0
Wyoming	*141.0*	*8.1*	*8.7*	*75.2*	*42.1*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*11.4*	*9.5*	*17.1*	*7.6*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-C	210.0	19.5	18.7	89.7	57.6	0.0	0.0	0.0	0.0
Wyoming	*144.7*	*8.1*	*9.2*	*72.6*	*50.0*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*11.4*	*9.5*	*17.1*	*7.6*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-D	249.4	21.3	14.2	98.2	37.0	1.2	0.0	0.8	1.0
Wyoming	*134.9*	*9.9*	*7.0*	*91.6*	*27.8*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*114.5*	*11.4*	*7.2*	*6.6*	*9.2*	*1.2*	*0.0*	*0.8*	*1.0*
WYCO-F	218.8	19.5	18.0	110.2	47.7	0.0	0.0	0.0	0.0
Wyoming	*153.5*	*8.1*	*8.5*	*93.1*	*40.1*	*0.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*11.4*	*9.5*	*17.1*	*7.6*	*0.0*	*0.0*	*0.0*	*0.0*

NOTES:
[1]The miles crossed for the special status mammals and birds columns will not add to the total miles column due to overlapping habitats.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

TABLE 3-106
ALTERNATIVE ROUTE COMPARISON FOR GREATER-SAGE-GROUSE INVENTORY FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Core Areas or Priority Habitat	General Habitat and Transmission Line Corridors Designated in Wyoming Executive Order 2011-5	Priority Areas for Conservation	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat	Habitat within 4 Miles of Leks Located Outside Core Areas or Priority Habitat	Areas within 4 miles of Leks Outside of Sage-grouse Habitat	Brood Habitat[2]	Winter Habitat[2]
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	26.8	177.3	66.4	51.1	51.7	0.0	1.1	25.7
Wyoming	*141.0*	*0.0*	*140.9*	*39.6*	*17.7*	*51.7*	*0.0*	–	–
Colorado	*65.3*	*26.8*	*36.4*	*26.8*	*33.4*	*0.0*	*0.0*	*1.1*	*25.7*
WYCO-C	210.0	26.8	181.0	66.4	51.1	62.3	0.0	1.1	25.7
Wyoming	*144.7*	*0.0*	*144.6*	*39.6*	*17.7*	*62.3*	*0.0*	–	–
Colorado	*65.3*	*26.8*	*36.4*	*26.8*	*33.4*	*0.0*	*0.0*	*1.1*	*25.7*
WYCO-D	249.4	89.2	155.6	110.9	110.4	84.4	0.0	0.7	50.2
Wyoming	*134.9*	*18.1*	*116.8*	*39.8*	*42,6*	*77.1*	*0.0*	–	–
Colorado	*114.5*	*71.1*	*38.8*	*71.1*	*67.8*	*7.3*	*0.0*	*0.7*	*50.2*
WYCO-F	218.8	26.8	189.8	66.4	51.1	75.8	0.0	1.1	25.7
Wyoming	*153.5*	*0.0*	*153.4*	*39.6*	*17.7*	*75.8*	*0.0*	–	–
Colorado	*65.3*	*26.8*	*36.4*	*26.8*	*33.4*	*0.0*	*0.0*	*1.1*	*25.7*

NOTES:
[1]The miles crossed for the special status mammals and birds columns will not add to the total miles column due to overlapping habitats.
[2]Data is not available for Wyoming brood or winter habitat; therefore the total for each alternative route only includes Colorado. The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

Birds

Special Status Raptors and Migratory Birds

The numbers of known bald eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative WYCO-B in Wyoming are presented in Table 3-107. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

TABLE 3-107
ALTERNATIVE ROUTE COMPARISON FOR ADDITIONAL SPECIAL STATUS WILDLIFE INVENTORY
FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

	Columbian Sharp-Tailed Grouse		Bald Eagle		Northern Goshawk			Peregrine Falcon		Golden Eagle	Ferruginous Hawk	Swainson's Hawk
Alternative Route[1]	Number of Known Leks within 4 Miles of Centerline	Acres of Winter Habitat	Number of Known Nests within 1 Mile of Centerline	Number of Known Winter Roost Sites Crossed	Number of Known Nests within 0.5 Mile of Centerline	Acres of Post-fledging Areas	Number of Known Post-fledging areas within 0.5 Mile of Centerline	Number of Known Nests within 1 Mile of Centerline	Acres of nesting Areas	Number of Known Nests within 0.5 Mile of Centerline	Number of Known Nests within 1 Mile of Centerline	Number of Nests within 0.25 Mile
WYCO-B (Agency and Applicant Preferred Alternative)	0	0	2	1	0	0	0	11	0	16	153	0
Wyoming	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*11*	*0*	*16*	*153*	*0*
Colorado	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-C	0	0	2	1	0	0	0	29	0	22	142	0
Wyoming	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*29*	*0*	*22*	*142*	*0*
Colorado	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-D	48	525	4	6	0	0	0	12	0	25	210	0
Wyoming	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*12*	*0*	*25*	*210*	*0*
Colorado	*48*	*525*	*3*	*6*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-F	0	0	2	1	0	0	0	12	0	19	139	0
Wyoming	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*12*	*0*	*19*	*139*	*0*
Colorado	*0*	*0*	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NOTES:
[1]Comprehensive raptor nest survey data are not currently available for all alternative routes but preconstruction surveys will be conducted along the selected alternative route and seasonal and spatial restrictions on construction and maintenance (Selective Mitigation Measure 12) would be applied to all known nests.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Zeros reported in the table do not represent absence data and dashes (-) appear where data were not available. The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

If selected, Alternative WYCO-B could require construction in buffer areas around active raptor nests closed to construction activities year-round by a controlled surface-use (CSU) stipulation in the BLM Rawlins Field Office RMP requiring a year-round 825-foot spatial buffer for active raptor nests (1,200 feet for ferruginous hawk nests). However, exceptions to the BLM-determined buffer distances can be granted depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. Proposed projects that could adversely affect raptors in the BLM Rawlins Field Office boundaries are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b).

Potential mountain plover habitat occurs throughout the majority of the length of Alternative WYCO-B in Wyoming (MV-11a).

Special Status Upland Game Birds

In Wyoming, Alternative WYCO-B crosses sage-grouse Priority Areas for Conservation, core areas and habitats within 4 miles of leks both inside and outside core areas (Table 3-106, MV-12a). Where crossing greater sage-grouse Priority Areas for Conservation and core areas, this alternative route would be located in a transmission line corridor designated by Wyoming Executive Order 2011-5 or parallel to an existing high-voltage transmission line. Sage-grouse population areas crossed by Alternative WYCO-B in Wyoming are described below. The extent of sage-grouse habitat crossed by Alternative WYCO-B is presented in Table 3-106. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-108.

TABLE 3-108
SUMMARY OF SAGE-GROUSE LEK DISTANCES TO ALTERNATIVE ROUTE CENTERLINES FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Number of Sage-grouse Leks		
	Within 2 Miles	**Within 4 Miles**	**Within 11 Miles**
WYCO-B (Agency and Applicant Preferred Alternative)	25	52	187
Wyoming	*17*	*41*	*147*
Colorado	*8*	*11*	*40*
WYCO-C	27	51	183
Wyoming	*19*	*40*	*143*
Colorado	*8*	*11*	*40*
WYCO-D	35	80	159
Wyoming	*25*	*51*	*179*
Colorado	*10*	*29*	*80*
WYCO-F	32	58	205
Wyoming	*24*	*47*	*165*
Colorado	*8*	*11*	*40*

NOTES:
Lek analysis incudes only leks in contiguous sage-grouse habitat crossed by each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

Wyoming Sage-grouse Population Areas Crossed by Alternative WYCO-B

Bates Hole/Shirley Basin

The Bates Hole/Shirley Basin sage-grouse population is a large population that occupies fairly contiguous habitat throughout much of Bates Hole and the Shirley Basin (Bates Hole/Shirley Basin Working Group

[BHSBWG] 2007). The area occupied by the Bates Hole/Shirley Basin sage-grouse populations includes areas identified as core sage-grouse habitat by Wyoming Executive Order 2011-5 and other occupied habitats in the Shirley Basin, Rattlesnake Hills, southern Bighorn Mountains, Laramie Range, and isolated habitats in southern Niobrara and Platte counties.

As of Spring 2006, there were 230 known occupied leks associated with the Bates Hole/Shirley Basin sage-grouse population (BHSBWG 2007). The Bates Hole/Shirley Basin designated occupied sage-grouse habitats occur in Carbon, Albany, Converse, Laramie, Natrona, Niobrara, and Platte counties. Habitats supporting the Bates Hole/Shirley Basin sage-grouse population are organized in seven different management areas (BHSBWG 2007) contained in the greater Management Zone 2: Wyoming Basin identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a; Stiver et al. 2006).

Habitats associated with the Bates Hole/Shirley Basin conservation area include sagebrush/grassland, salt desert shrub, mixed mountain shrub, grasslands, mixed forests (conifers and aspen), agricultural crops, riparian corridors, and urban areas. Designated occupied sage-grouse habitats occur primarily in sagebrush/grassland areas of Bates Hole, Shirley Basin, Rattlesnake Hills, the south end of the Bighorn Mountains, the foothills of the Laramie Range, and northern Platte County/southern Niobrara County. Occupied sage-grouse habitats are fragmented by topography and interspersed with curl-leaf mountain mahogany communities in the Rattlesnake Hills and the south end of the Big Horn Mountains (BHSBWG 2007).

Weather (e.g., drought) and vegetation management (e.g., livestock grazing and invasive plant management) are considered to be influential factors for the Bates Hole/Shirley Basin sage-grouse populations (BHSBWG 2007). Oil and gas development, coal mining, wind energy complexes, livestock grazing, dryland and irrigated crop production, and residential and commercial expansion projects located in and around the sage-grouse habitats occupied by the Bates Hole/Shirley Basin population have directly and indirectly affected sage-grouse and their associated habitats.

Overall male sage-grouse lek attendance has increased between 1996 and 2006 in the Bates Hole/Shirley Basin population (BHSBWG 2006), which represents a large portion of the Wyoming Basin population. Given the large size of the Wyoming portion of the greater Wyoming Basin population, the increasing population trend, and the presence of large contiguous habitats, the Bates Hole/Shirley Basin population has been designated as a low risk population by the FWS (FWS 2013a).

South Central Wyoming

The conservation area associated with the large South Central Wyoming sage-grouse population includes the Platte Valley, Laramie Plains, Great Divide Basin, North Ferris, south Sweetwater, and Little Snake river Valley in Carbon, Sweetwater, Albany, Fremont, and Natrona counties of southern Wyoming (South Central Sage-grouse Local Working Group [SCLWG] 2007).

As of 2006, there were 296 occupied leks associated with the South Central Wyoming sage-grouse population (SCLWG 2007). Habitats associated with the South Central Wyoming conservation area include shortgrass prairie, sagebrush/grassland, salt desert shrub, mixed mountain shrub, mixed forest types, agricultural, and urban types. Designated occupied sage-grouse habitats occur primarily in sagebrush/grassland areas of the Great Divide Basin, Little Snake River Valley, southwest Laramie Plains, and Platte Valley (SCLWG 2007). Habitats supporting the South Central Wyoming sage-grouse population are organized in five different management areas (SCLWG 2007), which are contained in the greater Management Zone 2: Wyoming Basin identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). Occupied sage-grouse habitats are fragmented by transportation corridors including I-80; Union Pacific Railroad; and Wyoming Highways 70, 789, 287, and 230/130 as

well as development around urban areas including Rawlins, Laramie, Saratoga, Encampment, Baggs, and Wamsutter.

Weather (e.g., drought), livestock grazing, and vegetation management (e.g., invasive plant management) are considered to be the most influential limiting factors for the South Central Wyoming sage-grouse populations (SCLWG 2007). Livestock grazing practices along with conflicting wildlife and feral horse management, predation, energy development, livestock grazing, and invasive plants are all influential potential limiting factors to the South Central Wyoming sage-grouse population as well. Mineral exploration, transmission line and wind energy development, coal mining, oil and gas development, and urban expansion projects located in and around the sage-grouse habitats occupied by the South Central Wyoming population have directly and indirectly affected sage-grouse and their associated habitats.

Overall male sage-grouse lek attendance has increased between 1996 and 2000 in the South Central Wyoming population with a more dramatic increase between 2004 and 2006 (SCLWG 2007), which represents a large portion of the Wyoming Basin population. Given the large size of the Wyoming portion of the greater Wyoming Basin population, the increasing population trend, and the presence of large contiguous habitats, the South Central population has been designated as a low risk population by the FWS (FWS 2013a).

Mammals

Alternative WYCO-B in Wyoming crosses the western portion of the Shirley Basin black-footed ferret reintroduction management area (MV-10a). Habitats in this area currently support low densities of white-tailed prairie dogs, and it is unlikely that black-footed ferrets occupy this part of the reintroduction management area.

White-tailed prairie dog potential colonies would be crossed by Alternative WYCO-B in Wyoming. Concentrations of potential colonies are crossed by Alternative WYCO-B between I-80 and the Wyoming/Colorado state line along Coal Gulch and in the southeast corner of Sweetwater County (MV-10a). Colonies along Coal Gulch have been affected by previous oil and gas development; however, potential habitats in southeastern Sweetwater County have been largely unaffected by previous anthropogenic development.

Alternative WYCO-B cross pygmy rabbit potential habitat along the majority of the alternative route in Wyoming (MV-10a), including vegetation communities that have, and some that have not, been affected by previous anthropogenic development.

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative WYCO-B in Wyoming and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of the selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Wyoming under Alternative WYCO-B would be similar to the other WYCO alternative routes (Table 3-109; MV-10a, MV-11a, and MV-12a). Residual impact levels listed in Table 3-109 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Wyoming, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Shirley Basin reintroduction management area) as well as sage-grouse core areas and habitats within 4 miles of leks located in core

areas. The quantity of high residual impacts would be the same for Alternatives WYCO-B, WYCO-C, and WYCO-F (Table 3-109).

TABLE 3-109
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE RESOURCES RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Residual Impacts (miles) [1, 2]			
		Nonidentifiable[3]	Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	1.9	40.0	101.3	63.1
Wyoming	*141.0*	*0.0*	*28.0*	*89.0*	*24.0*
Colorado	*65.3*	*1.9*	*12.0*	*12.3*	*39.1*
WYCO-C	210.0	1.9	42.0	103.0	63.1
Wyoming	*144.7*	*0.0*	*30.0*	*90.7*	*24.0*
Colorado	*65.3*	*1.9*	*12.0*	*12.3*	*39.1*
WYCO-D	249.4	3.6	31.5	89.0	125.3
Wyoming	*134.9*	*0.0*	*7.4*	*83.1*	*44.4*
Colorado	*114.5*	*3.6*	*24.1*	*5.9*	*80.9*
WYCO-F	218.8	1.9	34.2	119.6	63.1
Wyoming	*153.5*	*0.0*	*22.2*	*107.3*	*24.0*
Colorado	*65.3*	*1.9*	*12.0*	*12.3*	*39.1*

NOTES:
[1]Where multiple special status wildlife resources are crossed, the resource with the highest impact-level assignment was reported.
[2]Includes impacts on black-footed ferret, white-tailed prairie dog, pygmy rabbit, mountain plover, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, and greater sage-grouse and associated special status habitats.
[3]Miles are along the reference centerlines where none of the modeled habitats listed in the previous note occur.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-B in Wyoming is located within 1 mile of known raptor nests (Table 3-107). A CSU stipulation in the BLM Rawlins Field Office RMP prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests (1,200 feet for ferruginous hawks) unless current nest activity, natural topographic barriers, and line-of-sight distances suggest exceptions to buffer distances could be approved without unacceptable impacts on nesting activity. Projects that could adversely affect raptors in the BLM Rawlins Field Office are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b). Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of selective mitigation measures are described in Section 3.2.8.4.

If exceptions to the CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas such as 5 years of annual nest monitoring post construction, marking of optical ground wire on the transmission line (Selective Mitigation Measure 14) in the CSU area, closing access

roads in the CSU area after construction (Selective Mitigation Measure 15), construction of artificial nesting structures, or other measures implemented in accordance with agency requirements in the event that monitoring detects a Project-related impact on nesting activities. After mitigation, impacts associated with the Project would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-B in Wyoming, and despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-110). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994) and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

TABLE 3-110
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE ESTIMATED HABITAT DISTURBANCE (IN ACRES) FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

	Special Status Mammals			Special Status Birds				
				Potential Habitat			Yellow-billed Cuckoo	
Alternative Route	Black-footed Ferret Management Areas	White-tailed Prairie Dog Potential Colony	Pygmy Rabbit Potential Habitat	Mountain Plover	Mexican Spotted Owl	Southwestern Willow Flycatcher	Potential Habitat	Proposed Critical Habitat
WYCO-B (Agency and Applicant Preferred Alternative)	308	287	1,456	784	0	0	0	*0*
Wyoming	*128*	*137*	*1,187*	*664*	*0*	*0*	*0*	*0*
Colorado	*180*	*150*	*270*	*120*	*0*	*0*	*0*	*0*
WYCO-C	307	295	1,414	908	0	0	0	0
Wyoming	*128*	*145*	*1,144*	*788*	*0*	*0*	*0*	*0*
Colorado	*180*	*150*	*270*	*120*	*0*	*0*	*0*	*0*
WYCO-D	332	221	1,529	576	19	0	13	16
Wyoming	*154*	*109*	*1,426*	*433*	*0*	*0*	*0*	*0*
Colorado	*177*	*112*	*103*	*143*	*19*	*0*	*13*	*16*
WYCO-F	306	283	1,730	748	0	0	0	0
Wyoming	*127*	*133*	*1,461*	*629*	*0*	*0*	*0*	*0*
Colorado	*179*	*149*	*268*	*119*	*0*	*0*	*0*	*0*

NOTES:
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative WYCO-B in Wyoming would occur in transmission corridors designated by Wyoming Executive Order 2011-5 or in areas where this alternative route parallels an existing high-voltage transmission line or other linear disturbances that have degraded the existing quality of sage-grouse habitats (e.g., I-80). Locating the transmission line in previously

disturbed habitats and adjacent to existing linear infrastructure also would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected by Alternative WYCO-B in Wyoming is presented in Table 3-111.

TABLE 3-111
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE ESTIMATED HABITAT DISTURBANCE (IN ACRES) FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Core Areas or Priority Habitat	General Habitat and Transmission Line Corridors Designated in Wyoming Executive Order 2011-5	Priority Areas for Conservation	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat	Habitat within 4 Miles of Leks Located Outside Core Areas or Priority Habitat	Areas within 4 miles of Leks Outside of Sage-grouse Habitat	Brood Habitat[1]	Winter Habitat[1]
WYCO-B (Agency and Applicant Preferred Alternative)	423	2,798	1,048	806	816	0	17	406
Wyoming	*0*	*2,223*	*625*	*279*	*816*	*0*	–	–
Colorado	*423*	*574*	*423*	*527*	*0*	*0*	*17*	*406*
WYCO-C	422	2,853	1,046	805	982	0	17	406
Wyoming	*0*	*2,279*	*624*	*279*	*982*	*0*	–	–
Colorado	*422*	*574*	*422*	*526*	*0*	*0*	*17*	*405*
WYCO-D	1,388	2,422	1,711	1,718	1,314	0	11	*781*
Wyoming	*282*	*1,818*	*604*	*663*	*1,200*	*0*	–	–
Colorado	*1,107*	*604*	*1,107*	*1,055*	*114*	*0*	*11*	*781*
WYCO-F	421	2,979	1,043	802	1,190	0	17	403
Wyoming	*0*	*2,408*	*622*	*278*	*1,190*	*0*	–	*0*
Colorado	*421*	*571*	*421*	*524*	*0*	*0*	*17*	*403*

NOTES:
[1]Data is not available for Wyoming brood or winter habitat; therefore the total for each alternative only includes Colorado.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Alternative WYCO-B crosses between the I-80 corridor to the Wyoming/Colorado state line, through sage-grouse habitat in an area that has been largely unaffected by previous anthropogenic development. The alternative route is outside of designated core areas in this area but crosses within 4 miles of sage-grouse leks. The methods used to establish core area boundaries in Wyoming considered sage-grouse lek attendance and leks in core areas constitute a large percentage of the statewide sage-grouse population in Wyoming (Doherty et al. 2011). The leks influenced by this alternative route generally has low sage-grouse attendance and presumably have relatively lower importance for maintaining statewide sage-grouse populations than leks with higher attendance and leks located with a core area. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative WYCO-B during the past 5 years, and the percentage of the average Wyoming statewide sage-grouse male lek counts that this represents, are presented in Table 3-112.

TABLE 3-112
SUMMARY OF 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS WITHIN 4 MILES OF REFERENCE CENTERLINES FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	5-Year Average Sage-grouse Lek Counts[1]		
	Statewide Sum	Sum within 4 miles	Percentage of Leks within 4 miles
WYCO-B (Agency and Applicant Preferred Alternative)			
Wyoming	*23,299*	*288*	*1*
Colorado	*3,392*	*102*	*3*
WYCO-C			
Wyoming	*23,299*	*278*	*1*
Colorado	*3,392*	*102*	*3*
WYCO-D			
Wyoming	*23,299*	*307*	*1*
Colorado	*3,392*	*398*	*12*
WYCO-F			
Wyoming	*23,299*	*345*	*1*
Colorado	*3,392*	*102*	*3*

NOTES:
[1]Not all leks have been counted each year during the past 5 years and lek counts may have been conducted using different methodologies in different states. For leks without data for the past 5 consecutive years, an average of the number of counts available during the period was used. The counts do not sum for each alternative route as they are state specific.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Mammals

Alternative WYCO-B crosses the southwestern edge of the Shirley Basin black-footed ferret management area (MV-10a). Habitats crossed in the management area are rugged terrain and only support low densities of prairie dog towns at this time, which are an essential component of black-footed ferret habitat. Due to the disperse nature of prairie dog towns, the area in the Shirley Basin black-footed ferret management area potentially affected by Alternative WYCO-B is unlikely to support black-footed ferret.

Potentially suitable white-tailed prairie dog colony and pygmy rabbit habitats are present along the majority of all the WYCO alternative routes throughout Wyoming. If present in the right-of-way, injury of white-tailed prairie dogs and pygmy rabbits could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog potential colonies and pygmy rabbit habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4.

The magnitude of effects of Alternative WYCO-B on white-tailed prairie dog potential colonies and pygmy rabbit habitat could be less, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado crosses vegetation communities that have been largely unaffected by previous anthropogenic development between the Wyoming/Colorado state line and U.S. Highway 40. The alternative route parallels existing infrastructure including a high-voltage 345kV transmission line and U.S. Highway 40. The dominant vegetation communities crossed by Alternative WYCO-B are big

sagebrush and shrub/shrub-steppe with smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, pinyon-juniper, riparian, and agricultural habitats (Section 3.2.5).

In Moffat County, a portion of Alternative WYCO-B is located south of U.S. Highway 40 and colocated with an existing 345kV transmission line through the Tuttle Ranch Conservation Easement. Tuttle Ranch Conservation Easement is recognized by the CPW as containing extensive areas of high-quality nesting and brood-rearing habitat. Although the density of sage-grouse on the Tuttle Ranch Conservation Easement property is relatively low compared to other portions of the Northwest Colorado population, the area provides connectivity between key areas of priority habitat from the Axial Basin to the Blue Mountain area (east to west). The CPW also recognizes the Tuttle Ranch Conservation Easement property as containing some of the highest densities of white-tailed prairie dog colonies anywhere in northwestern Colorado and a potential preferred location for the future release of black-footed ferrets (CPW 2013). A comparison of route variations of Alternative WYCO-B in the vicinity of the Tuttle Ranch Conservation Easement is presented in Appendix F, Tables F-13 and F-19.

Birds

Special Status Raptors and Migratory Birds

The numbers of known bald eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative WYCO-B in Colorado are presented in Table 3-107.

If Alternative WYCO-B in Colorado is selected, a construction in buffer could be required in areas around active raptor nests closed to construction activities year-round by a CSU stipulation in the BLM Little Snake and White River Field Offices RMPs that require year-round spatial buffers for active raptor nests. However, exceptions to the BLM-determined buffer distances can be granted by the BLM field office manager depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. If an exception or modification is granted, the Applicant may be required to monitor the site for up to 5 years after construction.

Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Potential mountain plover habitat is crossed by Alternative WYCO-B as potential habitat occurs in the majority of the proposed rights-of-way for each of the alternative routes in Colorado (MV-11a).

Special Status Upland Game Birds

In Colorado, Alternative WYCO-B crosses greater sage-grouse Priority Areas for Conservation, priority habitats, general habitats, and habitats within 4 miles of leks inside priority habitats (Table 3-106, MV-12a). Some areas of priority habitats include designated brood-rearing and winter habitats. The alternative route crosses sage-grouse habitats and sagebrush and sage-steppe vegetation communities predominantly undisturbed by human development from the Wyoming/Colorado border to the intersection with U.S. Highway 40 (MV-12a). The extent of sage-grouse habitats crossed by Alternative WYCO-B is presented in Table 3-111. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-108.

Colorado Sage-grouse Populations Crossed by Alternative WYCO-B

Northwest Colorado

The Northwest Colorado sage-grouse population is a large population that occupies a broad geographic area (2,563,033 acres) delineated by topographic and other natural features. Habitats occupied by the

sage-grouse population occur in the northwest corner of Colorado in Moffatt, Rio Blanco, and Routt counties (Northwest Colorado Greater Sage-grouse Working Group 2008). The Northwest Colorado sage-grouse population occurs in the southern portion of the Wyoming Basin and northeastern portion of the Colorado Plateau ecoregions. The population is bounded to the east by the Southern Rocky Mountains. Habitats occupied by the population include sagebrush communities interspersed with juniper woodlands. Additionally, occupied sagebrush communities are interspersed with mountain shrub communities at higher elevations and salt desert shrub and greasewood communities at lower elevations. Limiting factors for Northwest Colorado sage-grouse are not well understood. Precipitation is limited in occupied habitat and extreme climatic conditions (e.g., severe drought conditions) can adversely affect sage-grouse forage quality and/or abundance as well as vegetative cover (Northwest Colorado Greater Sage-grouse Working Group 2008).

The population is estimated around 12,000 birds based on average male sage-grouse lek counts (2,100 to 2,500 individual grouse) between 2000 and 2005 (Northwest Colorado Greater Sage-grouse Working Group 2008). Sage-grouse lek attendance in the Northwest Colorado population increased between 1998 and 2006, and the population was believed to be stable to increasing (Northwest Colorado Greater Sage-grouse Working Group 2008).

The Northwest Colorado population appears to have undergone marked decline since 2008. Large tracts of arid, low-elevation sagebrush and salt-desert habitat in the southwest corner of Moffat County (west of Massadona) became vacant prior to the 1990s. These marginal habitats supported small, widely separated groups of breeding birds. Increased prevalence of cheatgrass and other invasive annual weeds across these shrub-scrub habitats may have contributed substantially to population declines. A single remaining lek at the eastern, higher-elevation margin of this habitat belt has maintained a small but stable number of attending males (FWS 2013a).

Highways, housing development, grain farming, unreclaimed oil and gas wells, juniper woodland expansion, and inundation from water storage projects located in and around sage-grouse habitats have directly and indirectly affected sage-grouse and sage-grouse habitats occupied by the Northwest Colorado population (Northwest Colorado Greater Sage-grouse Working Group 2008). Because of habitat conditions and connectivity, the population is considered to be at low risk, although southern portions of the population are considered less resilient to stressors than northern portions of the population due to habitat fragmentation and reduced connectivity (FWS 2013a).

The Northwest Colorado population is contained in the greater Management Zone VII: Colorado Plateau and Management Zone 2: Wyoming Basin identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and the Northwest Colorado sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a).

The BLM and USFS have identified 21 smaller Colorado Management Zones based on data from the BLM and CPW and sage-grouse population zones in the local and state sage-grouse management plans (Map 3-4). Descriptions of sage-grouse habitat conditions and population trends in each Colorado Management Zone crossed by Alternative WYCO-B are not available. However, descriptions of sage-grouse habitat conditions and habitat use in the management areas from the Northwest Colorado greater sage-groue draft land use plan amendment provide some information about each management zone's current condition important to sage-grouse in Colorado (BLM 2013b). The following management areas for which sage-groue habitat condition information was available are crossed by Alternative WYCO-B in Colorado:

- **Management Zone 3.** The Powder Wash watershed area contains important greater sage-grouse breeding, nesting, and brood-rearing habitats, including 10 known leks and approximately 2,400

acres of greater sage-grouse winter range. The Sandhills area provides sage-grouse winter range. The Sandhills and Sand Wash areas both contain important nesting and brood-rearing habitat for greater sage-grouse.

- **Management Zone 9.** Trends cannot be evaluated for the birds associated with habitats in the Sagebrush Draw and Indian Valley watershed areas. These birds occupy the southern margin of the Sagebrush Draw population in the Little Snake Field Office, and their abundance and distribution appears to expand and contract commensurate with core population status. Those remaining lands south of the town of Rangely in western Rio Blanco County do not appear to support persistent seasonal use. Leks have never been identified, and the numbers of birds encountered over the past 30 years are few. It is possible these birds occasionally disperse from neighboring Utah.
- **Management Zones 9 and 10.** An expansive low-elevation salt-desert complex extending west from Pinyon Ridge along the U.S. Highway 40 corridor and south to the White River supports limited year-round occupation by greater sage-grouse. Ground cover is often dominated by invasive annual weeds, and these xeric habitats are considered marginal in their support of nesting and brood-rearing functions. These areas in Management Zones 9 and 10 have been known to support concentrated high density winter use. The breeding population in the western half of this area (west of Massadona) had begun to collapse prior to the mid-1970s, and this trend continued through the 1980s. The only remaining active lek is located on the far eastern end of the area. Suitable sagebrush stands along U.S. Highway 40 are relatively limited. These predominantly salt desert habitats are dissected by deeply incised channels that assume the role of brood habitat, although the broods along the White River probably originate from the lower Red Wash and Boise Creek areas. The origin of large numbers of wintering birds in lower Wolf Creek is unclear but some of the sage-grouse are likely using the U.S. Highway 40 corridor.

  The Crooked Wash watershed area of Management Zone 10 is administratively split between the BLM White River and the Little Snake Field Offices to the north and is composed of a high percentage of private lands. Although upland sagebrush conditions are superficially adequate for nesting in the White River Field Office, upper portions of the basin are likely preferred by sage-grouse. Late season brood use has been noted, although brood habitat conditions are considered suboptimal in portions of the basin in the White River Field Office. Although a number of channels in the area support persistent flow, riparian expression is extremely limited. Concentrated winter use in the Crooked Wash area is assumed to represent the majority of the sage-grouse occupancy. The small summer population in Black's Gulch seems to be a fragment of the Crooked Wash area. This area also has supported concentrated winter use in the past.

Mammals

Alternative WYCO-B crosses the Wolf Creek black-footed ferret reintroduction management area (MV-10a). The alternative route is adjacent to an existing high-voltage 345kV transmission line and U.S. Highway 40 that run through the reintroduction management area. Reintroduced ferrets in the Wolf Creek Management Area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012).

White-tailed prairie dog potential colonies would be crossed by Alternative WYCO-B in Colorado. Concentrations of potential habitat would be crossed in northern Moffat County, near the Little Snake River, and north of the Moffat/Rio Blanco County border in Colorado, and particularly along U.S. Highway 40 in the Elk Springs area (MV-10a). Colonies near the Moffat/Rio Blanco County border have been affected by previous development of highways and high-voltage transmission lines.

Map 3-4

Greater Sage-grouse Management Zones Crossed in Colorado

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Greater Sage-grouse[1]

- Greater Sage-grouse Priority Area for Conservation
- Greater Sage-grouse Habitat[2]

Colorado Greater Sage-grouse Management Zone[3]

- Zone 3
- Zone 4
- Zone 5
- Zone 6
- Zone 8
- Zone 9
- Zone 10
- Management Zones not crossed by the Project

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Sage-grouse Priority Areas for Conservation, BLM 2013;
Greater Sage-grouse Habitat Colorado, CPW 2012;
Colorado Greater Sage-grouse Management Zones, BLM 2012;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
[1]Greater Sage-grouse habitat is shown only within the Project area boundary.
[2]Greater Sage-grouse habitat is composed of Sage-grouse Linkages, Colorado Priority Habitat, and Colorado General Habitat.
[3]Only management zones crossed by Project alternative routes are identified in this map.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

0 5 10 20 30
Miles

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Alternative WYCO-B crosses potential pygmy rabbit habitat that occurs in Colorado north of the Yampa River (MV-10a). Pygmy rabbit potential habitats crossed by Alternative WYCO-B in Colorado have been predominantly unaffected by previous anthropogenic development.

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative WYCO-B in Colorado and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of the selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Colorado under Alternative WYCO-B would be similar to the other WYCO alternative routes (Table 3-109; MV-10a, MV-11a, and MV-12a).

Residual impact levels listed in Table 3-109 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Colorado, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Wolf Creek reintroduction management area) as well as sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Moderate impacts would be primarily from impacts on potential pygmy rabbit habitat. Low impacts would be a result of impacts on sage-grouse general habitats and potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative WYCO-B in Colorado is located within 1 mile of known raptor nests (Table 3-107). Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of selective mitigation measures are described in Section 3.2.8.4.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-B in Colorado, and despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-110). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994) and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete. All of the WYCO alternative routes would result in a similar amount modification of potential mountain plover habitat in Colorado (Table 3-110).

Special Status Upland Game Birds

Some of the impacts on sage-grouse associated with Alternative WYCO-B in Colorado occur outside of existing utility corridors and in areas not substantially altered by previous anthropogenic development activities. In these areas, Alternative WYCO-B avoids priority sage-grouse habitat and sage-grouse leks

to the extent feasible. The estimated area of sage-grouse habitats affected by Alternative WYCO-B in Colorado is presented in Table 3-107.

From where the alternative route joins the U.S. Highway 40 corridor to the end of the alternative route, Alternative WYCO-B is primarily located in a designated utility corridor and adjacent to linear disturbances, including U.S. Highway 40 and an existing high-voltage transmission line that have degraded the quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043).

The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative WYCO-B during the past 5 years and the percentage of the Colorado statewide sage-grouse average male lek counts that this represents, are presented in Table 3-108.

Mammals

Black footed-ferret occurrences have not been recorded since a 2008 and 2009 plague affected the Wolf Creek ferret population, ferrets have not been located in the last 4 years, and reintroductions are not currently taking place (Ausmus 2012). If ferrets are not present in the Wolf Creek reintroduction management area, ferrets would not be affected by Alternative WYCO-B. However, if black-footed ferret reintroductions are resumed in the future, Alternative WYCO-B could result in effects described in Section 3.2.8.4.

Potentially suitable white-tailed prairie dog colonies and pygmy rabbit habitat are present along the majority of the WYCO alternative routes throughout Colorado. If present in the right-of-way, injury of white-tailed prairie dogs and pygmy rabbits could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog potential colonies and pygmy rabbit habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. However, much of the white-tailed prairie dog potential colonies and pygmy rabbit habitats between the Wyoming/Colorado state line and U.S. Highway 40 have not been affected by previous human development. The magnitude of effects of Alternative WYCO-B on white-tailed prairie dog potential colonies could be less where the alternative route would be adjacent to the existing human development and infrastructure.

Alternative WYCO-C

Affected Environment (Wyoming)

In many areas, Alternative WYCO-C in Wyoming follows the same alignment as Alternative WYCO-B between the Aeolus Substation and Wamsutter in Wyoming. This alternative route follows an existing pipeline corridor approximately 5 miles west of Alternative WYCO-B between Wamsutter and the Wyoming/Colorado state line. The dominant vegetation communities, special status wildlife species, and habitats present and likely to be affected by Alternative WYCO-C are the same as those for Alternative WYCO-B described at the beginning of Section 3.2.8.5.

Birds

Special Status Raptors and Migratory Birds

The numbers of known bald eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative WYCO-C in Wyoming are presented in Table 3-107.

Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

If Alternative WYCO-C is selected, a construction buffer could be required in areas around active raptor nests closed to construction activities year-round by a CSU stipulation in the BLM Rawlins Field Office RMP requiring a year-round 825-foot spatial buffer for active raptor nests (1,200 feet for ferruginous hawk nests). However, exceptions to the BLM-determined buffer distances can be granted depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. Proposed projects that could adversely affect raptors in the BLM Rawlins Field Office boundaries are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b).

Mountain plover potential habitat occurs throughout the majority of the length of Alternative WYCO-C in Wyoming (MV-11a).

Special Status Upland Game Birds

In Wyoming, Alternative WYCO-C crosses sage-grouse Priority Areas for Conservation, core areas and habitats within 4 miles of leks both inside and outside core areas (Table 3-106 and MV-12a). Where crossing greater sage-grouse Priority Areas for Conservation and core areas habitats, this alternative route would be located in a transmission line corridor designated by Wyoming Executive Order 2011-5 or parallel to an existing high-voltage transmission line. Alternative WYCO-C crosses the same sage-grouse population areas in Wyoming as Alternative WYCO-B. The extent of sage-grouse habitat crossed by Alternative WYCO-C is presented in Table 3-106. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-108.

Mammals

Alternative WYCO-C in Wyoming would follow the same geographic path through the Shirley Basin black-footed ferret reintroduction management area as Alternative WYCO-B (MV-10a) and crosses the same extent of the reintroduction management area in Wyoming (Table 3-105).

White-tailed prairie dog potential colonies would be crossed by Alternative WYCO-C in Wyoming. Concentrations of potential colonies are crossed where Alternative WYCO-C would continue south of Wamsutter approaching the Barrel Springs area. Alternative WYCO-C would run south from Wamsutter parallel to an existing pipeline corridor to the Wyoming/Colorado state line. White-tailed prairie dog potential colonies also occur in the southeast corner of Sweetwater County, Wyoming, where this alternative route crosses shrub/sage-steppe and sagebrush communities unaffected by existing human development southwest of Flat Top Mountain at the Wyoming/Colorado border (MV-10a).

Alternative WYCO-C crosses pygmy rabbit potential habitat along the majority of the alternative route in Wyoming in areas of existing energy and transportation development from the Aeolus Substation to Wamsutter and parallel to an existing pipeline corridor to the Wyoming/Colorado state line (MV-10a).

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative WYCO-C in Wyoming and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Colorado under Alternative WYCO-C would be similar to the other WYCO alternative routes (Table 3-109; MV-10a, MV-11a, and MV-12a).

Residual impact levels listed in Table 3-109 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Wyoming, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Shirley Basin reintroduction management area) as well as sage-grouse core areas and habitats within 4 miles of leks located in core areas. Moderate impacts would be primarily from impacts on potential pygmy rabbit habitat and sage-grouse habitat within 4 miles of leks located outside of core areas. Low impacts would be a result of impacts on sage-grouse general habitats and transmission line corridors and potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any active nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-C in Wyoming is located within 1 mile of known raptor nests (Table 3-107). Similar to Alternative WYCO-B, exceptions to a CSU stipulation in the BLM Rawlins Field Office RMP which prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests (1,200 feet for ferruginous hawks) may be granted by BLM for Alternative WYCO-C. If exceptions to CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas. These additional mitigation measures and monitoring would be the same as those described for Alternative WYCO-B. After mitigation, impacts associated with the Project are described in Section 3.2.8.4 and would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-C in Wyoming, and despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-110). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994) and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative WYCO-C in Wyoming would occur in transmission corridors designated by Wyoming Executive Order 2011-5, in designated BLM-utility corridors, or in areas where this alternative route parallels an existing high-voltage transmission line or other linear disturbances that have degraded the existing quality of sage-grouse habitats (e.g., I-80). Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure also would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated disturbance of sage-grouse habitats affected by Alternative WYCO-C in Wyoming is presented in Table 3-106.

Alternative WYCO-C parallels an existing underground pipeline corridor from the I-80 to the Wyoming/Colorado state line. The alternative route is outside of designated core areas in this area but crosses within 4 miles of sage-grouse leks. The methods used to establish core area boundaries in

Wyoming considered sage-grouse lek attendance and leks in core areas constitute a large percentage of the statewide sage-grouse population in Wyoming (Doherty et al. 2011). The leks influenced by this alternative route generally have low sage-grouse attendance and presumably have relatively lower importance for maintaining statewide sage-grouse populations than leks with higher attendance and leks located with a core area. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative WYCO-C during the past 5 years, and percentage of the average Wyoming statewide sage-grouse male lek counts that this represents, are presented in Table 3-112.

Mammals

Alternative WYCO-C crosses the southwestern edge of the Shirley Basin black-footed ferret management area (MV-10a). Habitats crossed in the management area are rugged terrain and only support low densities of prairie dog towns at this time, which are an essential component of black-footed ferret habitat. Due to the disperse nature of prairie dog towns, the area in the Shirley Basin black-footed ferret management area potentially affected by Alternative WYCO-C is unlikely to support black-footed ferret.

Potentially suitable white-tailed prairie dog colonies and pygmy rabbit habitat are present along the majority of Alternative WYCO-C in Wyoming. If present in the right-of-way, injury of white-tailed prairie dogs and pygmy rabbits could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog potential colonies and pygmy rabbit habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4.

The magnitude of effects of Alternative WYCO-C on white-tailed prairie dog potential colonies and pygmy rabbit habitat could be less, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Affected Environment (Colorado)

The affected environment for Alternative WYCO-C in Colorado is the same as Alternative WYCO-B (Tables 3-105 and 3-106) as the two alternative routes follow the same alignment.

Environmental Consequences (Colorado)

The environmental consequences for Alternative WYCO-C in Colorado would be the same as Alternative WYCO-B (Tables 3-105 and 3-106) as the two alternative routes follow the same alignment.

Alternative WYCO-D

Affected Environment (Wyoming)

Alternative WYCO-D runs east of Hanna adjacent to an existing transmission line and existing wind energy development. East of Hanna, the alternative route follow the same alignment as Alternatives WYCO-B, WYCO-C, and WYCO-F to Wamsutter. Alternative WYCO-D is located farther east than the other WYCO alternative routes and would parallel Wyoming Highway 789 to Baggs through existing gas and oil development areas and riparian habitat in Baggs. The dominant vegetation types and special status wildlife and their habitats present and likely to be affected by this alternative route are the same as those described for Alternative WYCO-B (Tables 3-105 and 3-106).

Birds

Special Status Raptors and Migratory Birds

The numbers of known bald eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative WYCO-D in Wyoming are presented in Table 3-107. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

If Alternative WYCO-D is selected, a construction buffer could be required in areas around active raptor nests closed to construction activities year-round by a CSU stipulation in the BLM Rawlins Field Office RMP requiring a year-round 825-foot spatial buffer for active raptor nests (1,200 feet for ferruginous hawk nests). However, exceptions to the BLM-determined buffer distances can be granted depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. Proposed projects that could adversely affect raptors in the BLM Rawlins Field Office boundaries are evaluated on a case by case basis by BLM resource specialists (BLM 2008b).

Potential mountain plover habitat occurs throughout the majority of the length of Alternative WYCO-D in Wyoming with the exception of the portion of Alternative WYCO-D that heads south at Wamsutter and the area just north of Baggs (MV-11a).

Special Status Upland Game Birds

In Wyoming, Alternative WYCO-D crosses sage-grouse Priority Areas for Conservation, core areas and habitats within 4 miles of leks both inside and outside core areas (Table 3-106, MV-12a). Unlike Alternatives WYCO-B and WYCO-C, Alternative WYCO-D is not located in a utility corridor designated in Wyoming Executive Order 2011-5 where it crosses the Hanna core area; however, the alternative route would be parallel to an existing high-voltage transmission line in this area. Additionally, between the I-80 corridor and the Wyoming/Colorado state line, Alternative WYCO-D crosses in proximity to a sage-grouse core area and is located in sage-grouse habitats within 4 miles of leks located in core areas. Alternative WYCO-D crosses the same sage-grouse population areas in Wyoming as Alternative WYCO-B. The extent of sage-grouse habitat crossed by Alternative WYCO-D is presented in Table 3-106. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-108.

Mammals

Alternative WYCO-D in Wyoming crosses the western portion of the Shirley Basin black-footed ferret reintroduction management area (MV-10a). Habitats in this area currently support low densities of white-tailed prairie dogs, and it is unlikely that black-footed ferrets occupy this part of the reintroduction management area.

White-tailed prairie dog potential colonies would be crossed by Alternative WYCO-D in Wyoming. Concentrations of potential colonies are crossed just south of Creston where Alternative WYCO-D would travel south, along Coal Gulch area where this alternative route approaches the Mexican Flats area at the Peach Orchard Flat area where Alternative WYCO-B runs parallel to Wyoming Highway 789 through fields of existing gas and oil development and at the Wyoming/Colorado state line west of Baggs (MV-10a). Habitats along Coal Gulch and along Wyoming Highway 789 have been affected by previous oil and gas development; however, potential habitats in southwestern Carbon County have been largely unaffected by previous anthropogenic development.

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative WYCO-D in Wyoming and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Wyoming under Alternative WYCO-D would be similar to the other WYCO alternative routes (Table 3-109; MV-10a, MV-11a, and MV-12a). Residual impact levels listed in Table 3-109 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Wyoming, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Shirley Basin reintroduction management area), as well as sage-grouse core areas and habitats within 4 miles of leks located in core areas. Moderate impacts would be primarily from impacts on potential pygmy rabbit habitat and sage-grouse habitat within 4 miles of leks located outside of core areas or priority habitat. Low impacts would be a result of impacts on sage-grouse general habitats in transmission line corridors and potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-D in Wyoming is located within 1 mile of known raptor nests (Table 3-107). Similar to Alternative WYCO-B, exceptions to a CSU stipulation in the BLM Rawlins Field Office RMP which prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests (1,200 feet for ferruginous hawks) may be granted by BLM for Alternative WYCO-D. If exceptions to CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas. These additional mitigation measures and monitoring would be the same as those described for Alternative WYCO-B. After mitigation, impacts associated with the Project are described in Section 3.2.8.4 and would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-D in Wyoming, and despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-110). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative WYCO-D in Wyoming would occur in transmission corridors designated by Wyoming Executive Order 2011-5, in designated BLM-utility corridors, or in areas where this alternative route parallels an existing high-voltage transmission line or other linear disturbances that have degraded the existing quality of sage-grouse habitats (e.g., I-80).

Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure also would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected by Alternative WYCO-D in Wyoming is presented in Table 3-106.

As Alternative WYCO-D crosses south from the I-80 corridor to the Wyoming/Colorado state line, it parallels Wyoming Highway 789 and is located in a BLM-designated utility corridor. The alternative route is in proximity to the Greater South Pass sage-grouse core area and within 4 miles of sage-grouse leks in this core area. Alternative WYCO-D is located within 4 miles of the largest sage-grouse leks (e.g., leks attended by more male sage-grouse) of any of the alternative routes in Wyoming except Alternative WYCO-F. Thus, this alternative route potentially would affect adversely leks having a larger importance for maintaining statewide sage-grouse populations than leks with lesser attendance (Table 3-112). The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative WYCO-D during the past 5 years, and percentage of the average Wyoming statewide sage-grouse male lek counts that this represents, are presented in Table 3-112.

Mammals

Alternative WYCO-D crosses the southwestern edge of the Shirley Basin black-footed ferret management area (MV-10a). Habitats crossed in the management area only support low densities of prairie dog towns at this time, which are an essential component of black-footed ferret habitat. Due to the disperse nature of prairie dog towns, the area in the Shirley Basin black-footed ferret management area potentially affected by Alternative WYCO-D is unlikely to support black-footed ferret.

Potentially suitable white-tailed prairie dog colonies and pygmy rabbit habitat are present along the majority of Alternative WYCO-D in Wyoming. If present in the right-of-way, injury of white-tailed prairie dogs and pygmy rabbits could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog potential colonies and pygmy rabbit habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4.

The magnitude of effects of Alternative WYCO-D on white-tailed prairie dog potential colonies and pygmy rabbit habitat could be less, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Affected Environment (Colorado)

Alternative WYCO-D in Colorado follows a different geographical route than all other WYCO alternative routes heading south along Colorado State Highway 13 to Craig, then west along U.S. Highway 40 and parallel to an existing transmission line before converging with all other WYCO alternative routes south of Maybell. The total mileage of Alternative WYCO-D in Colorado would be twice that of all other WYCO alternative routes. Dominant vegetation communities are similar to those described for Alternative WYCO-B but also include agricultural land.

In Moffat County, Alternative WYCO-D is located south of U.S. Highway 40 and colocated with an existing 345kV transmission line through the Tuttle Ranch Conservation Easement. Tuttle Ranch Conservation Easement is recognized by CPW as containing extensive areas of high quality nesting and brood-rearing habitat. Although the density of sage-grouse on the Tuttle Ranch Conservation Easement property is relatively low compared to other portions of the Northwest Colorado population, the area provides connectivity between key areas of priority habitat from the Axial Basin to the Blue Mountain area (east to west). CPW also recognizes the Tuttle Ranch Conservation Easement property as containing

some of the highest densities of white-tailed prairie dog colonies anywhere in northwestern Colorado and a potential preferred location for the future release of black-footed ferrets (CPW 2013).

Birds

Special Status Raptors and Migratory Birds

The numbers of known bald eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative WYCO-D in Colorado are presented in Table 3-107. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

If Alternative WYCO-D in Colorado is selected, a construction buffer could be required in areas around active raptor nests closed to construction activities year-round by a CSU stipulation in the BLM Little Snake and White River RMPs that require year-round spatial buffers for active raptor nests. However, exceptions to the BLM-determined buffer distances can be granted by the BLM field office manager depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. If an exception or modification is granted, the Applicant may be required to monitor the site for up to 5 years post construction.

Potential yellow-billed cuckoo habitat is crossed in Colorado at intersections of Alternative WYCO-D with the Little Snake River at the Wyoming/Colorado state line and south of the intersection with U.S. Highway 40 east of Craig, along the Yampa River. Alternative WYCO-D crosses proposed critical habitat for yellow-billed cuckoo that includes a 20-mile-long segment of the Yampa River from near the town of Craig in Moffat County to near the town of Hayden in Routt County, Colorado. This site has regularly been occupied by western yellow-billed cuckoos during the breeding season and is near the current northern limit of the current breeding range of the species (79 FR 48547).

Potential mountain plover habitat is crossed by Alternative WYCO-D as potential habitat occurs throughout the majority of the length of each of the alternative routes in Colorado (MV-11a).

Potential Mexican spotted owl habitat is crossed by Alternative WYCO-D in the Juniper Mountain area located just south of U.S. Highway 40 approximately 4 miles east of Maybell near the Yampa River. However, owls are not known to occupy the potential habitat at this time.

Special Status Upland Game Birds

In Colorado, Alternative WYCO-D crosses sage-grouse Priority Areas for Conservation, priority habitats, general habitats, and habitats within 4 miles of leks both inside and outside of priority habitats (Table 3-106, MV-12a). Some areas of priority habitats include designated brood-rearing and winter habitats. The alternative route parallels existing linear disturbances, including Colorado State Highways 13 and 40 and an existing high-voltage transmission line (MV-12a). The extent of sage-grouse habitats crossed by Alternative WYCO-D is presented in Table 3-106. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-108.

Colorado Sage-grouse Populations Crossed by Alternative WYCO-D

Northwest Colorado

In addition to crossing the U.S. Highway 40 corridor, Crooked Wash, and Sagebrush Draw areas in Management Zones 9 and 10 (refer to the descriptions of these areas under Alternative WYCO-B, Affected Environment), Alternative WYCO-D also crosses Management Zones 5, 6, and 8 (Map 3-4).

Sage-grouse habitat conditions and habitat use in the management zones have been summarized below (BLM 2013a):

- **Management Zone 5.** The entire landscape surrounding the Fourmile Creek area is considered a greater sage-grouse production area, although the quality of greater sage-grouse brood-rearing habitat has been reduced by heavy historic grazing, especially in mesic areas at the higher elevations. The large expanses of sagebrush steppe intermixed with wet meadows provide important greater sage-grouse nesting and brood-rearing habitats along Timberlake Creek. Fourteen greater sage-grouse leks have been identified and brood-rearing habitats have been documented.
- **Management Zone 6.** Sagebrush grasslands and sagebrush mixed shrub habitat types in the Williams Fork area have the potential to support greater sage-grouse in this landscape. There are no identified greater sage-grouse leks or critical habitat, such as nesting or winter, located in the Williams Fork watershed.

  The Lay Creek watershed area provides breeding, nesting, brood-rearing and wintering habitat throughout the year. Lay Creek is an important production area for greater sage-grouse in Colorado. There are seven active greater sage-grouse leks in this watershed with two additional active leks within 1 mile of the watershed boundary. Some portions of the watershed are capable of providing all four habitat requirements in the same area.
- **Management Zone 8.** Greater sage-grouse habitat types in the Axial Basin landscape include strutting grounds, brood-rearing habitat, and winter range. In this landscape, 30 leks have been documented: 11 (37 percent) are active; 6 (20 percent) are inactive (no activity the last 5 years), 11 (37 percent) are historic (no activity the last 6 years or longer), and 2 (7 percent) are unknown.

Alternative WYCO-D in Colorado also crosses Columbian sharp-tailed grouse winter habitat and habitats within 4 miles of leks (Table 3-107).

Mammals

Alternative WYCO-D crosses the Wolf Creek black-footed ferret reintroduction management area (MV-10a). The alternative route is adjacent to an existing transmission line and U.S. Highway 40 that run through the reintroduction management area. Reintroduced ferrets in the Wolf Creek management area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012).

White-tailed prairie dog potential colonies would be crossed by Alternative WYCO-D in Colorado. Concentrations of potential colonies are crossed southeast of Baggs along the Wyoming Highway 789 corridor to the west of Elkhead Mountain, along the U.S. Highway 40 disturbance corridor including where this alternative route continues west at Craig, and near Maybell south to the Moffat/Rio Blanco County border in Colorado (MV-10a)

Alternative WYCO-D crosses potential pygmy rabbit habitat in Colorado north of the Yampa River (MV-10a). Pygmy rabbit potential habitats crossed by Alternative WYCO-D in Colorado have been predominantly unaffected by previous anthropogenic development.

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative WYCO-D in Colorado and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of

impacts on special status wildlife and their potential habitats in Colorado under Alternative WYCO-D would be greater than other WYCO alternative routes (Table 3-109; MV-10a, MV-11a, and MV-12a).

Residual impact levels listed in Table 3-109 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Colorado, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Wolf Creek reintroduction management area) as well as sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Moderate impacts would be primarily from impacts on potential pygmy rabbit habitat and sage-grouse habitat within 4 miles of leks located outside of priority habitat. Low impacts would be a result of impacts on sage-grouse general habitats in transmission line corridors and potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative WYCO-D in Colorado is located within 1 mile of known raptor nests (Table 3-107). Additional raptor nests are likely to be located within 1 mile of Alternative WYCO-D in Colorado. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of selective mitigation measures are described in Section 3.2.8.4.

Alternative WYCO-D is the only alternative of the WYCO alternative routes that crosses potential yellow-billed cuckoo habitat or yellow-billed cuckoo proposed critical habitat in Colorado (Table 3-110). Despite the implementation of temporal and spatial avoidance selective mitigation measures, some loss of riparian vegetation could occur in potentially suitable yellow-billed cuckoo habitat along the Little Snake River and yellow-billed cuckoo proposed critical habitat along the Yampa River in Moffat County. Loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the Little Snake River (if occupied) and along the Yampa River in Moffat County.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-D in northern Colorado, and despite the implementation of temporal and spatial avoidance selective mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-110). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994) and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete. Mexican spotted owls are not known to occupy the potential habitat crossed by Alternative WYCO-D in the Juniper Mountain area, though no formal surveys have been completed. If Mexican spotted owls are detected during preconstruction surveys, selective mitigation measures for seasonal and spatial avoidance would be implemented to reduce potential effects. However, some vegetation structure in potential Mexican spotted owl habitat could be lost as a result of clearing of trees for safe operation of the transmission line. Alternative WYCO-D is the only alternative of the WYCO alternative routes that would affect potential Mexican spotted owl habitat in Colorado.

Special Status Upland Game Birds

The estimated area of Columbian sharp-tailed grouse winter habitat affected, as well as the estimated area of habitat affected within 4 miles of leks in Colorado by Alternative WYCO-D, is presented in Table 3-107.

Some of the impacts on sage-grouse associated with Alternative WYCO-D in Colorado occur inside existing designated utility corridors and in areas altered by previous anthropogenic development activities, including construction of highways and high-voltage transmission lines that have degraded the existing quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure also would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected by Alternative WYCO-D in Wyoming is presented in Table 3-108.

However, despite being located in habitats that have been previously affected by anthropogenic activities, Alternative WYCO-D is located within 2, 4, and 11 miles of substantially more sage-grouse leks than all of the other alternative routes in Colorado (Table 3-108). Additionally, the average number of male sage-grouse counted on the leks within 4 miles of Alternative WYCO-D during the past 5 years is substantially larger than the average number of male sage-grouse counted on leks within 4 miles of all other alternative routes in Colorado (Table 3-112). The number of male sage-grouse counted on leks within 4 miles of Alternative WYCO-D suggests habitats that could be affected by this alternative route are more important for maintaining the statewide sage-grouse population than habitats affected by other WYCO alternative routes in Colorado.

Mammals

Black footed-ferret occurrences have not been recorded since a 2008 and 2009 plague affected the Wolf Creek ferret population, ferrets have not been located in the last 4 years, and reintroductions are not currently taking place (Ausmus 2012). However, if black-footed ferret reintroductions are resumed in the future, Alternative WYCO-D could result in effects described in Section 3.2.8.4.

Potentially suitable white-tailed prairie dog colonies and pygmy rabbit habitat are present along Alternative WYCO-D in Colorado. If present in the right-of-way, injury of white-tailed prairie dogs and pygmy rabbits could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog potential colonies and pygmy rabbit habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4.

The magnitude of effects of Alternative WYCO-D on white-tailed prairie dog potential colonies and pygmy rabbit habitat could be less, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.
Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F in Wyoming follows the same alignment as Alternative WYCO-B between the Aeolus Substation and Wamsutter in Wyoming. Between Wamsutter and the Wyoming/Colorado state line, the alternative route crosses shrub/shrub-steppe and sagebrush habitats, existing roads, and energy development east of Flat Top Mountain. The dominant vegetation communities, special status wildlife species, and habitats present and likely to be affected by Alternative WYCO-F are the same as those for Alternative WYCO-B described at the beginning of Section 3.2.8.5. The extent of potential habitat for special status wildlife species that would be crossed by each WYCO alternative route is presented in Tables 3-105 and 3-106.

Birds

Special Status Raptors and Migratory Birds

If Alternative WYCO-F in Wyoming is selected, a construction buffer could be required in areas around active raptor nests closed to construction activities year-round by a CSU stipulation in the BLM Rawlins Field Office RMP requiring a year-round 825-foot spatial buffer for active raptor nests (1,200 feet for ferruginous hawk nests). However, exceptions to the BLM-determined buffer distances can be granted depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. Proposed projects that could adversely affect raptors in the BLM Rawlins Field Office boundaries are evaluated on a case by case basis by BLM resource specialists (BLM 2008b).

Potential mountain plover habitat occurs throughout the majority of the length of Alternative WYCO-F in Wyoming (MV-11a).

Special Status Upland Game Birds

In Wyoming, Alternative WYCO-F in Wyoming crosses sage-grouse Priority Areas for Conservation, core areas and habitats within 4 miles of leks both inside and outside core areas (Table 3-106, MV-12a). Where crossing greater sage-grouse Priority Areas for Conservation and core areas, this alternative route would be located in a transmission line corridor designated by Wyoming Executive Order 2011-5 or parallel to an existing high-voltage transmission line. Alternative WYCO-F crosses the same sage-grouse population areas in Wyoming as Alternative WYCO-B. The extent of sage-grouse habitat crossed by Alternative WYCO-F is presented in Table 3-106. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-108.

Mammals

Alternative WYCO-F in Wyoming would follow the same geographic path through the Shirley Basin black-footed ferret reintroduction management area as Alternative WYCO-B (MV-10a); therefore, the two alternative routes crosses the same extent of the reintroduction management area in Wyoming (Table 3-105).

White-tailed prairie dog potential colonies would be crossed by Alternative WYCO-F in Wyoming. Concentrations of potential colonies occur along Coal Gulch where Alternative WYCO-F continues south of Wamsutter approaching the Mexican Flats area. Alternative WYCO-F runs parallel to Wamsutter Road through fields of existing oil exploration (well pads/oil fields). White-tailed prairie dog potential colonies also occur in the southwest corner of Carbon County, Wyoming, where this alternative route crosses relatively undisturbed shrub/sage-steppe and sagebrush communities along the southeast of Flat Top Mountain (MV-10a).

Pygmy rabbit potential habitat occurs along the majority of Alternative WYCO-F in areas of existing energy and transportation development from the Aeolus Substation to Wamsutter, as well as areas of pristine habitat east of Flat Top Mountain in Wyoming (MV-10a).

Environmental Consequences (Wyoming)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative WYCO-F in Wyoming and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of

impacts on special status wildlife and their potential habitats in Wyoming under Alternative WYCO-F would be similar to the other WYCO alternative routes (Table 3-109; MV-10a, MV-11a, and MV-12a).

Residual impact levels listed in Table 3-109 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Wyoming, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Shirley Basin reintroduction management area) as well as sage-grouse core areas and habitats within 4 miles of leks located in core areas. Moderate affects would be primarily from impacts on potential pygmy rabbit habitat and sage-grouse habitat within 4 miles of leks located outside of core areas. Low impacts would be a result of impacts on sage-grouse general habitats in transmission line corridors and potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-F in Wyoming is located within 1 mile of known raptor nests (Table 3-107). Similar to Alternative WYCO-B, exceptions to a CSU stipulation in the BLM Rawlins Field Office RMP which prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests (1,200 feet for ferruginous hawks) may be granted by BLM for Alternative WYCO-F. If exceptions to CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas. These additional mitigation measures and monitoring would be the same as those described for Alternative WYCO-B. After mitigation, impacts associated with the Project are described in Section 3.2.8.4 and would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative WYCO-F in Wyoming, and despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-110). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and would be likely to continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative WYCO-F in Wyoming would occur in transmission corridors designated by Wyoming Executive Order 2011-5, in areas where other linear disturbances have degraded the existing quality of sage-grouse habitats (e.g., I-80), and in areas where disperse oil and gas development is occurring. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure also would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected by Alternative WYCO-F in Wyoming is presented in Table 3-106.

Alternative WYCO-F is located within 4 miles of the sage-grouse leks attended by more male grouse than other alternative routes in Wyoming. Thus, this alternative route could presumably influence leks having larger importance for maintaining statewide sage-grouse populations than leks with lesser attendance.

Mammals

Alternative WYCO-F crosses the southwestern edge of the Shirley Basin black-footed ferret management area (MV-10a). Habitats crossed in the management area are rugged terrain and, at this time, support low densities of prairie dog towns that are an essential component of black-footed ferret habitat. Due to the disperse nature of prairie dog towns, the area in the Shirley Basin black-footed ferret management area potentially affected by Alternative WYCO-F is unlikely to support black-footed ferret.

Potentially suitable white-tailed prairie dog colonies and pygmy rabbit habitat are present along the majority of Alternative WYCO-F in Wyoming. If present in the right-of-way, injury of white-tailed prairie dogs and pygmy rabbits could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. White-tailed prairie dog potential colonies and pygmy rabbit habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4.

The magnitude of effects of Alternative WYCO-F on white-tailed prairie dog potential colonies and pygmy rabbit habitat could be less, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Affected Environment (Colorado)

The affected environment for Alternative WYCO-F in Colorado is the same as Alternative WYCO-B) as the two alternative routes follow the same alignment through the state. Slight differences occur in the number of miles of mountain plover, pygmy rabbit, and white-tailed prairie dog potential habitat as well as habitat within 4 miles of sage-grouse leks located in general and priority habitats crossed by Alternative WYCO-F in Colorado (Table 3-106).

Environmental Consequences (Colorado)

The environmental consequences for Alternative WYCO-F in Colorado would be the same as Alternative WYCO-B (Tables 3-105 and 3-109) as the two alternative routes follow the same alignment.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The COUT BAX alternative routes are located in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. Vegetation communities crossed by COUT BAX alternative routes in Colorado and eastern Utah are dominated by grasslands, shrub/shrub-steppe, big sagebrush, pinyon-juniper, barren/sparsely vegetated, developed/disturbed. In central Utah vegetation types crossed are dominated by pinyon-juniper, big sagebrush, agriculture, montane forest, aspen, and mountain shrub. Areas disturbed by previous human activities are concentrated near the communities of Rangely and Mack in Colorado and Green River, Cisco, Huntington, Fountain Green, Fairview, and Mona in Utah (MV-10b, MV-11b, and MV-12b).

All of the COUT BAX alternative routes begin along U.S. Highway 40 in Colorado and end at the Clover Substation near Mona, Utah. The alternative routes all follow the same geographic path south along the Colorado/Utah border crossing, Baxter Pass, and generally follow I-70 west to Green River, Utah. From Green River, the alternative routes follow various paths across the San Rafael Swell, Manti-La Sal National Forest, and Sanpete Valley before terminating at the Clover Substation. A detailed description of

the vegetation communities crossed by the COUT BAX alternative routes and their existing condition is included in Section 3.2.5.

Special status wildlife species known to occur or which may occur in the vegetation communities crossed by the COUT BAX alternative routes include the black-footed ferret, sage-grouse, Mexican spotted owl, white-tailed prairie dog, yellow-billed cuckoo, southwestern willow flycatcher, mountain plover, and other species (including but not limited to burrowing owl and kit fox) described in Appendix J, Section J.6. The COUT BAX alternative routes cross designated sage-grouse general habitats in western Colorado as well as designated Priority Areas for Conservation, occupied, brood-rearing, and winter sage-grouse habitats in Carbon, Emery, and Sanpete counties of Utah. Sage-grouse habitats crossed by the COUT BAX alternative routes in Utah include habitats used by the Horn Mountain sage-grouse population and designated sage-grouse habitats that do not currently support a known sage-grouse population. The Horn Mountain sage-grouse population is located in the Emery sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a) and the Parker Mountain-Emery Sage-grouse Management Area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

All of the COUT BAX alternative routes cross the southwest corner of the Wolf Creek black-footed ferret reintroduction management area in Colorado. Reintroduced ferrets in the Wolf Creek management area are believed to have been lost to a plague event in 2008 and 2009 and ferrets have not been reintroduced since (Ausmus 2012). Mexican spotted owls are uncommon in western Colorado and are not known to occupy potential habitat crossed by the COUT BAX alternative routes along Whiskey and Salt Creek canyons in Garfield County, Colorado. Incidental reports of Mexican spotted owls have been reported from the San Rafael Swell in the vicinity of the Wedge (Wright 2012), and the type of incised canyon habitat occupied by spotted owls is present in the Project area in the San Rafael Swell (FWS 2011d). However, no formal surveys have been completed.

White-tailed prairie dogs are locally common in western Colorado and eastern Utah. Plague management, the treatment of the white-tailed prairie dog as a pest species, and habitat loss have limited the species distribution and population size. Yellow-billed cuckoos may occur in the limited riparian habitats supported by major rivers and perennial and intermittent streams throughout the Project area. Southwestern willow flycatchers may occur in the limited riparian habitats supported by major rivers and perennial and intermittent streams in Grand and Emery counties, Utah. Mountain plovers are known to use disturbed, grassland, and shrubland habitats in Colorado (Knopf and Miller 1994), though the COUT BAX alternative routes are on the periphery of the species' breeding range and the mountain plovers are scarce in those areas (Dinsmore 2003).

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B in Colorado is entirely in the Colorado Plateaus Ecoregion, which predominantly contains big sagebrush, shrub/shrub-steppe, and pinyon-juniper vegetation communities (Section 3.2.5). Smaller areas of alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities also occur along this alternative route in Colorado (Section 3.2.5). Special status wildlife species and habitats present and likely to be affected by each of the COUT-BAX alternative routes are described above.

The extent of potential habitat for special status wildlife species crossed by each COUT BAX alternative route is presented in Tables 3-113 and 3-114.

TABLE 3-113
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Special Status Mammals (miles crossed)			Special Status Birds (miles crossed)				
					Potential Habitat			Yellow-billed Cuckoo	
		Black-footed Ferret Management Areas	White-tailed Prairie Dog Potential Colony	Pygmy Rabbit Potential Habitat	Mountain Plover	Mexican Spotted Owl	Southwestern Willow Flycatcher	Potential Habitat	Proposed Critical Habitat
COUT BAX-B	279.9	1.8	10.8	0.0	1.2	19.5	0.1	0.7	0.0
Colorado	*87.0*	*1.8*	*1.5*	*0.0*	*1.2*	*19.1*	*0.0*	*0.1*	*0.0*
Utah	*192.9*	*0.0*	*9.3*	*0.0*	*0.0*	*0.4*	*0.1*	*0.6*	*0.0*
COUT BAX-C	290.4	1.8	11.9	0.0	1.2	22.9	0.6	1.2	0.0
Colorado	*87.0*	*1.8*	*1.5*	*0.0*	*1.2*	*19.1*	*0.0*	*0.1*	*0.0*
Utah	*203.4*	*0.0*	*10.4*	*0.0*	*0.0*	*3.8*	*0.6*	*1.1*	*0.0*
COUT BAX-E	292.2	1.8	9.2	0.0	1.2	19.1	0.8	1.5	0.0
Colorado	*87.0*	*1.8*	*1.5*	*0.0*	*1.2*	*19.1*	*0.0*	*0.1*	*0.0*
Utah	*205.2*	*0.0*	*7.7*	*0.0*	*0.0*	*0.0*	*0.8*	*1.4*	*0.0*

NOTES:
[1]The miles crossed for the special status mammals and birds columns will not add to the total miles column due to overlapping habitats.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

TABLE 3-114
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Core Areas or Priority Habitat	General Habitat and Transmission Line Corridors Designated in Wyoming Executive Order 2011-5	Priority Areas for Conservation	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat	Habitat within 4 Miles of Leks Located Outside Core Areas or Priority Habitat	Areas within 4 miles of Leks Outside of Sage-grouse Habitat	Brood Habitat	Winter Habitat
COUT BAX-B	279.9	10.3	15.0	5.0	0.0	0.0	0.0	6.3	8.5
Colorado	*87.0*	*0.0*	*15.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.1*
Utah	*192.9*	*10.3*	*0.0*	*5.0*	*0.0*	*0.0*	*0.0*	*6.3*	*4.4*
COUT BAX-C	290.4	10.3	15.0	5.0	0.0	0.0	0.0	6.3	8.5
Colorado	*87.0*	*0.0*	*15.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.1*
Utah	*203.4*	*10.3*	*0.0*	*5.0*	*0.0*	*0.0*	*0.0*	*6.3*	*4.4*

TABLE 3-114
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

COUT BAX-E	292.2	19.8	15.0	30.1	0.0	0.0	0.0	3.2	4.1
Colorado	*87.0*	*0.0*	*15.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.1*
Utah	*205.2*	*19.8*	*0.0*	*30.1*	*0.0*	*0.0*	*0.0*	*3.2*	*0.0*

NOTES:
[1]The miles crossed for the special status mammals and birds columns will not add to the total miles column due to overlapping habitats.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT BAX-B in Colorado are presented in Table 3-115. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Potential yellow-billed cuckoo habitat along the White River in northwest Rio Blanco County south of Hatch Flats is crossed by Alternative COUT BAX-B (MV-11b).

Potential mountain plover habitat is crossed by Alternative COUT BAX-B in Rio Blanco County before the alternative route crosses over Coal Ridge in the Hatch Flats area and crosses upland habitats along the White River (MV-11b).

Potential Mexican spotted owl habitat is crossed by Alternative COUT BAX-B where the alternative route follows Whiskey Creek south in Rio Blanco to Garfield County and crosses over Baxter Pass following County Road 201 south toward Mesa County (MV-11b).

TABLE 3-115
ALTERNATIVE ROUTE COMPARISON FOR ADDITIONAL SPECIAL STATUS WILDLIFE INVENTORY
FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route[1]	Columbian Sharp-Tailed Grouse		Bald Eagle		Northern Goshawk			Peregrine Falcon		Golden Eagle	Ferruginous Hawk	Swainson's Hawk
	Number of Known Leks within 4 Miles of Centerline	Acres of Winter Habitat	Number of Known Nests within 1 Mile of Centerline	Number of Known Winter Roost Sites Crossed	Number of Known Nests within 0.5 Mile of Centerline	Acres of Post-fledging Areas	Number of Known Post-fledging areas within 0.5 Mile of Centerline	Number of Known Nests within 1 Mile of Centerline	Acres of nesting Areas	Number of Known Nests within 0.5 Mile of Centerline	Number of Known Nests within 1 Mile of Centerline	Number of Nests within 0.25 Mile
COUT BAX-B	*0*	0	0	0	2	0	0	0	0	4	17	5
Colorado	*0*	*0*	0	0	*0*	0	0	0	0	*0*	*0*	*0*
Utah	0	*0*	0	0	*2*	0	0	0	0	*4*	*17*	*5*
COUT BAX-C	0	0	0	0	2	0	0	0	0	4	17	5
Colorado	0	*0*	0	0	*0*	0	0	0	0	*0*	*0*	0
Utah	0	*0*	0	0	*2*	0	0	0	0	*4*	*17*	*5*
COUT BAX-E	0	0	0	0	0	0	0	0	0	11	17	5
Colorado	0	*0*	0	0	0	0	0	0	0	*0*	*0*	0
Utah	0	*0*	0	0	0	0	0	0	0	*11*	*17*	*5*

NOTES:
[1]Comprehensive raptor nest survey data are not currently available for all alternative routes but preconstruction surveys will be conducted along the selected alternative route and seasonal and spatial restrictions on construction and maintenance (Selective Mitigation Measure 12) would be applied to all known nests.
This table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Zeros reported in this table do not represent absence data and dashes (-) appear where data were not available. The specific data sources represented in this table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Special Status Upland Game Birds

In Colorado, Alternative COUT BAX-B crosses sage-grouse general habitats but does not cross priority habitats or habitats within 4 miles of leks (Table 3-114, MV-12b). Sage-grouse winter habitat is crossed north of Rangely. Where crossing general sage-grouse habitat south of the White River, this alternative route primarily parallels existing disturbances, including high traffic unpaved roads and existing oil and gas development in areas. North of the White River, sage-grouse general habitats crossed by the alternative route, have been affected by few previous anthropogenic developments (MV-12b). The extent of sage-grouse habitats crossed by Alternative COUT BAX-B is presented in Table 3-114. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-116.

TABLE 3-116
SUMMARY OF SAGE-GROUSE LEK DISTANCES TO ALTERNATIVE ROUTE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

	Number of Sage-grouse Leks		
Alternative Route	**Within 2 Miles**	**Within 4 Miles**	**Within 11 Miles**
COUT BAX-B	0	0	1
Colorado	0	0	1
Utah	0	0	0
COUT BAX-C	0	0	1
Colorado	0	0	1
Utah	0	0	0
COUT BAX-E	0	0	1
Colorado	0	0	1
Utah	0	0	0

NOTES:
Lek analysis incudes only leks in contiguous sage-grouse habitat crossed by each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

Mammals

Alternative COUT BAX-B in Colorado crosses the Wolf Creek black-footed ferret reintroduction management area through sagebrush, grassland, and pinyon-juniper habitats along an existing transmission line and U.S. Highway 40 from Elk Springs toward Massadona (MV-10b) to the same extent as Alternatives COUT BAX-C and COUT BAX-E. Reintroduced ferrets in the Wolf Creek management area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012).

White-tailed prairie dog potential colonies occur along Alternative COUT BAX-B in Colorado in the vicinity of U.S. Highway 40 and south of the Book Cliffs along I-70 (MV-10b).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT BAX-B in Colorado and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Colorado under Alternative COUT BAX-B would be the same as other COUT BAX alternative routes (Table 3-117; MV-10a, MV-11a, and

MV-12a). Residual impact levels listed in Table 3-117 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Colorado, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Wolf Creek reintroduction management area). Moderate impacts would be primarily from impacts on potential Mexican spotted owl habitat. Low impacts would be a result of impacts on sage-grouse general habitats in transmission line corridors.

TABLE 3-117
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE RESOURCES RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Residual Impacts[1, 2] (miles crossed)			
		Nonidentifiable[3]	Low	Moderate	High
COUT BAX-B	279.9	224.9	13.1	29.8	12.1
Colorado	*87.0*	*52.6*	*13.1*	*19.5*	*1.8*
Utah	*192.9*	*172.3*	*0.0*	*10.3*	*10.3*
COUT BAX-C	290.4	230.6	13.1	34.6	12.1
Colorado	*87.0*	*52.6*	*13.1*	*19.5*	*1.8*
Utah	*203.4*	*178.0*	*0.0*	*15.1*	*10.3*
COUT BAX-E	292.2	229.0	13.1	29.0	21.6
Colorado	*87.0*	*52.6*	*13.1*	*19.5*	*1.8*
Utah	*205.2*	*176.4*	*0.0*	*9.5*	*19.8*

NOTES:
[1]Where multiple special status wildlife resources is crossed, the resource with the highest impact-level- assignment was reported.
[2]Includes impacts on black-footed ferret, white-tailed prairie dog, pygmy rabbit, mountain plover, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, and greater sage-grouse and associated special status habitats.
[3]Miles are along the reference centerlines where none of the modeled habitats listed in the previous note occur.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Raptor nest locations within 1 mile of Alternative COUT BAX-B in Colorado are not currently known(Table 3-115), but raptor nests are likely to be located during field surveys. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.8.4.

Some loss of riparian vegetation along the White River and the Hatch Flats area in Rio Blanco County that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. If yellow-billed cuckoos use riparian habitats along the White River and the Hatch Flats area, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories in Rio Blanco County. Despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur as the alternative route crosses over Coal Ridge, in the Hatch Flats area and in potentially suitable habitat in the general vicinity of the White River in Rio Blanco County (Table 3-118). Mountain plovers often breed near areas disturbed by construction

and other human activities (Knopf and Miller 1994), and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete. Mexican spotted owls are not known to occupy the potential habitat crossed in the Baxter Pass area along Whiskey and West Salt creeks in Garfield County, though no formal surveys have been completed. If Mexican spotted owls are detected during preconstruction surveys, mitigation measures, including seasonal and spatial avoidance, would be implemented to reduce potential effects. However, some vegetation structure in potential Mexican spotted owl habitat could be lost as a result of the clearing of trees for safe operations of the transmission line.

TABLE 3-118
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE ESTIMATED HABITAT DISTURBANCE (IN ACRES) FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

	Special Status Mammals			Special Status Birds				
				Potential Habitat			Yellow-billed Cuckoo	
Alternative Route	Black-footed Ferret Management Areas	White-tailed Prairie Dog Potential Colony	Pygmy Rabbit Potential Habitat	Mountain Plover	Mexican Spotted Owl	Southwestern Willow Flycatcher	Potential Habitat	Proposed Critical Habitat
COUT BAX-B	30	181	0	20	327	2	12	0
Colorado	*30*	*25*	*0*	*20*	*320*	*0*	*2*	*0*
Utah	*0*	*156*	*0*	*0*	*7*	*2*	*10*	*0*
COUT BAX-C	30	198	0	20	382	10	20	0
Colorado	*30*	*25*	*0*	*20*	*318*	*0*	*2*	*0*
Utah	*0*	*173*	*0*	*0*	*63*	*10*	*18*	*0*
COUT BAX-E	30	152	0	20	315	13	25	0
Colorado	*30*	*25*	*0*	*20*	*315*	*0*	*2*	*0*
Utah	*0*	*127*	*0*	*0*	*0*	*13*	*23*	*0*

NOTES: The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT BAX-B in Colorado would occur in mapped general habitat and would not occur within 4 miles of known leks. Additionally, sage-grouse habitats affected south of the White River have been previously affected by noise, human presence, and vehicle use associated with high traffic unpaved roads and oil and gas development in the area. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated disturbance of sage-grouse habitats in Colorado by Alternative COUT BAX-B are presented in Table 3-119.

TABLE 3-119
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE ESTIMATED HABITAT DISTURBANCE (IN ACRES) FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Core Areas or Priority Habitat	General Habitat and Transmission Line Corridors Designated in Wyoming Executive Order 2011-5	Priority Areas for Conservation	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat	Habitat within 4 Miles of Leks Located Outside Core Areas or Priority Habitat	Areas within 4 miles of Leks Outside of Sage-grouse Habitat	Brood Habitat	Winter Habitat
COUT BAX-B	173	252	84	0	0	0	106	143
Colorado	*0*	*252*	*0*	*0*	*0*	*0*	*0*	*69*
Utah	*173*	*0*	*84*	*0*	*0*	*0*	*106*	*74*
COUT BAX-C	172	250	83	0	0	0	105	141
Colorado	*0*	*250*	*0*	*0*	*0*	*0*	*0*	*68*
Utah	*172*	*0*	*83*	*0*	*0*	*0*	*105*	*73*
COUT BAX-E	327	248	497	0	0	0	53	68
Colorado	*0*	*248*	*0*	*0*	*0*	*0*	*0*	*68*
Utah	*327*	*0*	*497*	*0*	*0*	*0*	*53*	*0*

NOTES: The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Alternative COUT BAX-B does not affect priority sage-grouse habitats or sage-grouse habitats within 4 miles of known leks, which are presumably the most important areas for maintaining statewide sage-grouse populations in Colorado. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT BAX-B during the past 5 years and the percentage of the average Colorado statewide sage-grouse male lek counts that this represents are presented in Table 3-120.

TABLE 3-120
SUMMARY OF 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS WITHIN 4 MILES OF REFERENCE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	5-Year Average Sage-grouse Lek Counts[1]		
	Statewide Sum	Sum within 4 miles	Percentages of Leks within 4 Miles
COUT BAX-B			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*0*	*0*
COUT BAX-C			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*0*	*0*
COUT BAX-E			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*0*	*0*

NOTES:
[1]Not all leks have been counted each year during the past 5 years and lek counts may have been conducted using different methodologies in different states. For leks without data for the past 5 consecutive years, an average of the number of counts available during the period was used. The counts are state specific and do not sum for each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Mammals

Black footed-ferret occurrences have not been recorded since a 2008 and 2009 plague affected the Wolf Creek ferret population, ferrets have not been located in the last 4 years, and reintroductions are not currently taking place (Ausmus 2012). However, if black-footed ferret reintroductions are resumed in the future, Alternative COUT BAX-B could result in effects described in Section 3.2.8.4. Alternative COUT BAX-B would affect the same extent of the Wolf Creek black footed ferret management area as Alternatives COUT BAX-C and COUT BAX-E in Colorado (Table 3-118)

If present in the right-of-way, injury of white-tailed prairie dogs could occur during construction and maintenance of the Project. Loss and modification of their habitats would be likely to occur. Alternative COUT BAX-B would affect the same extent of potential white-tailed prairie dog colonies as Alternatives COUT BAX-C and COUT BAX-E in Colorado (Table 3-118).

Affected Environment (Utah)

Alternative COUT BAX-B in Utah occurs in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. The dominant vegetation types crossed by Alternative COUT BAX-B include shrub/shrub-steppe vegetation communities, and large areas of barren/sparsely vegetated, big sagebrush, and pinyon-juniper vegetation communities (Section 3.2.5). Lesser amounts of agriculture, alpine, aspen, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities also occur (Section 3.2.5). Special status wildlife species and habitats present and likely to be affected by Alternative COUT BAX-B are described at the beginning of this section for the COUT BAX alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT BAX alternative route is presented in Tables 3-113 and 3-114.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative COUT BAX-B in Utah are presented in Table 3-115. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Potential yellow-billed cuckoo habitat is crossed by Alternative COUT BAX-B in Utah where the alternative route follows an existing 345kV transmission line in the Calf Mesa, Hadden Flat, Wilberg Flat areas as well as in the Hop Creek area of the Uinta National Forest in Juab County (MV-11b). A yellow-billed cuckoo was detected in 2012 at the Huntington Game Farm WMA near Huntington Creek adjacent to the alternative route (Hanson 2013).

Potential Mexican spotted owl habitat is crossed by Alternative COUT BAX-B in Utah where it follows an existing 345kV transmission line south of Dry Mesa (MV-11b). Incidental reports of Mexican spotted owl vocalizations have been reported in the vicinity of The Wedge, though no formal surveys have been completed (Wright 2012).

Potential southwestern willow flycatcher habitat is crossed by Alternative COUT BAX-B in Utah where the alternative route follows an existing 345kV transmission line in the Green River, Calf Mesa, Hadden Flat, and Wilberg Flat areas (MV-11b).

Special Status Upland Game Birds

In Utah, Alternative COUT BAX-B crosses sage-grouse occupied habitat, and designated Priority Areas for Conservation on the Manti-La Sal National Forest, which supports the Horn Mountain sage-grouse population; and occupied habitat in the Sanpete Valley that does not currently support a known sage-grouse population (Map 3-5). Some areas of occupied habitat include designated brood-rearing and winter habitats. Alternative COUT BAX-B does not cross habitats located within 4 miles of known leks in Utah (Table 3-114, MV-12b). In all areas where sage-grouse habitats are crossed in Utah, Alternative COUT BAX-B would be parallel to an existing 345kV wood H-frame transmission line (MV-12b). The extent of sage-grouse habitats crossed by Alternative COUT BAX-B is presented in Table 3-121. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-122.

The specific extent of sage-grouse habitat occupied by the Horn Mountain population crossed by Alternative COUT BAX-B is presented in Table 3-121. The number of sage-grouse leks within 2, 4, and 11 miles of the alternative route in the Horn Mountain population area is presented in Table 3-122.

TABLE 3-121
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE HABITAT INVENTORY BY UTAH POPULATIONS CROSSED BY THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route by the Horn Mountain Population	Sage-grouse Habitat Types (miles crossed)	
	Core Areas or Priority Habitat[1]	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat
COUT BAX-B	6.3	0.0
COUT BAX-C	6.3	0.0
COUT BAX-E	0.0	0.0

NOTES:
[1]For the purpose of this analysis, greater sage-grouse occupied habitat in Utah (Utah Division of Wildlife Resources 2011d) was considered to be synonymous with priority habitat.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Sage-grouse Population Areas Crossed by Alternative COUT BAX-B

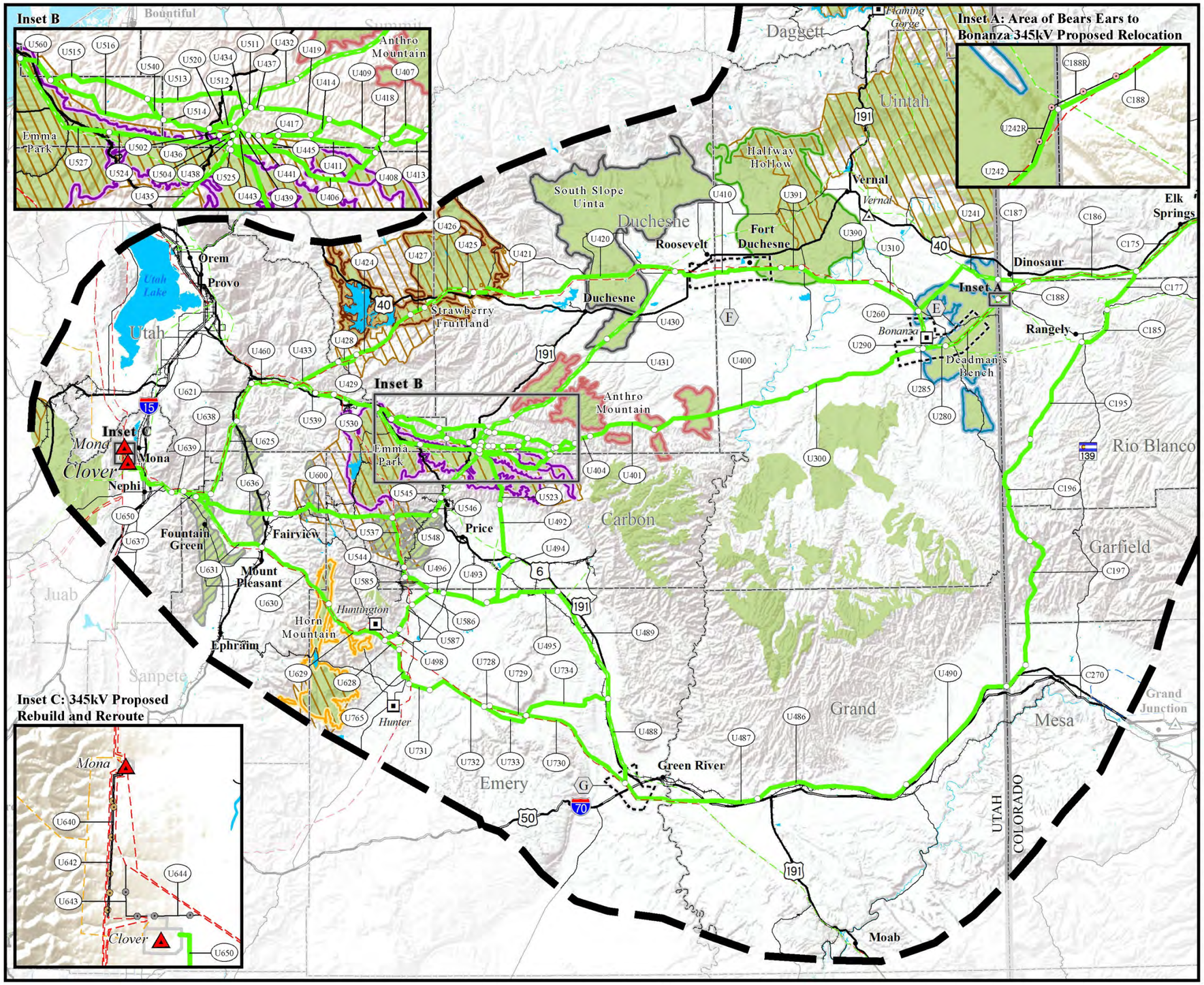
Horn Mountain

The number of males counted on known leks associated with the Horn Mountain sage-grouse population is estimated to range between 1 to 18 birds based on males counted on 2 leks (UDWR 2013) over the past 10 years. The Horn Mountain sage-grouse population occurs in the central portion of the Wasatch Plateau (Map 3-5). The population is in the Southern Great Basin: Management Zone 3 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006), the greater Emery sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a), and the Parker Mountain-Emery sage-grouse management area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013). The Horn Mountain population is limited to small, high elevation sagebrush habitats (totaling 16, 817 acres) bordered by large canyons, cliffs, and mountains (Perkins 2010). The Horn Mountain sage-grouse are considered to be one-stage migratory, moving 10 kilometers or more between late-summer and wintering habitat (Perkins 2010). Two leks and wintering habitats are located on the southern end of the habitat area occupied by the Horn Mountain population (BLM 2013b).

Due to the small habitat areas, geographic isolation, small population size, and low genetic diversity; the Horn Mountain population is more susceptible to random events and lacks general resiliency (BLM 2013b). Therefore, small impacts may have proportionately larger or amplified impacts on this sage-grouse population and the population is considered to be at-risk (FWS 2013a).

Mammals

Potential white-tailed prairie dog colonies are crossed by Alternative COUT BAX-B in Utah where the alternative route follows I-70 southwest into Grand County through existing gas and oil fields toward Cisco as well as in the Buckhorn Flat area in an existing transmission line corridor before crossing into USFS-administered land into East Mountain (MV-11b).



Map 3-5

Greater Sage-grouse Populations Crossed in Utah

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Greater Sage-grouse[1]

- Greater Sage-grouse Priority Area for Conservation
- Greater Sage-grouse Occupied Habitat

Utah Greater Sage-grouse Populations[2]

- Anthro Mountain
- Deadman's Bench
- Emma Park
- Halfway Hollow
- Horn Mountain
- South Slope Uinta
- Strawberry Fruitland
- Occupied Habitat crossed by the Project not associated with specific population

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Sage-grouse Priority Areas for Conservation, BLM 2013;
Greater Sage-grouse Occupied Habitat Utah, UDWR 2011;
Greater Sage-grouse Population Boundaries Utah, BLM 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
[1]Greater Sage-grouse habitat is shown only within the Project area boundary.
[2]Only populations crossed by Project alternative routes are identified in this map.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
• Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

0 5 10 20 30
Miles

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TABLE 3-122
SUMMARY OF THE NUMBER OF LEKS AND 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS IN UTAH POPULATIONS CROSSED WITHIN 2, 4, AND 11 MILES OF REFERENCE CENTERLINES FOR THE COLORADO TO UTAH U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Sage-grouse Population Total Leks		Sage-grouse Leks within 2 Miles of the Alternative Route			Sage-grouse Leks within 4 Miles of the Alternative Route			Sage-grouse Leks within 11 Miles of the Alternative Route		
	Number of Leks	Sum of 5-Year Average Lek Counts	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count
Horn Mountain											
COUT BAX-B	2	9	0	0	0	0	0	0	0	0	0
COUT BAX-C	2	9	0	0	0	0	0	0	0	0	0
COUT BAX-E	2	9	0	0	0	0	0	0	0	0	0
Emma Park											
COUT BAX-E	14	150	0	0	0	0	0	0	0	0	0

NOTES:
Lek analysis incudes only leks in contiguous sage-grouse habitat crossed by each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT BAX-B in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT BAX-B would be similar to Alternative COUT BAX-C (Table 3-117; MV-10a, MV-11a, and MV-12a). Residual impact levels listed in Table 3-117 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Utah, high residual impacts on special status wildlife resources would be due to impacts on sage-grouse priority habitats. Moderate impacts would be primarily from impacts on potential white-tailed prairie dog colonies and potential Mexican spotted owl habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT BAX-B in Utah is located within 1 mile of known raptor nests (Table 3-115). Additional raptor nests are likely to be located within 1 mile of Alternative COUT BAX-B. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Some loss of riparian vegetation along the Green River, Cottonwood Spring, Huntington Creek, Wilberg Flat, and Hop Creek areas that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. A yellow-billed cuckoo was detected in 2012 at the Huntington Game Farm WMA near Huntington Creek adjacent to the alternative route (Hanson 2013). If yellow-billed cuckoos use riparian habitats affected by Alternative COUT BAX-B, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along Cottonwood Spring, Huntington Creek, the Green River, Wilberg Flat, and Hop Creek areas in Emery County. Potential habitat for Mexican spotted owl is crossed by Alternative COUT BAX-B north of Buckhorn Wash. Incidental reports of Mexican spotted owl vocalizations have been reported in the vicinity of The Wedge, though no formal surveys have been completed (Wright 2012). If Mexican spotted owls are detected during preconstruction surveys, mitigation measures, including seasonal and spatial avoidance, would be implemented to reduce potential effects. However, some vegetation structure in potential Mexican spotted owl habitat could be lost as a result of the clearing of trees for safe operation of the transmission line. Despite the implementation of temporal and spatial avoidance mitigation measures, some loss of riparian vegetation along Cottonwood Spring, Huntington Creek, and Wilberg Flat areas that may provide suitable habitat for southwestern willow flycatcher could occur. Loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the amount of effective southwestern willow flycatcher territories along Cottonwood Spring, Huntington Creek, and Wilberg Flat areas in Emery County.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT BAX-B in Utah would occur in mapped occupied habitat and would not occur within 4 miles of known leks. Additionally, sage-grouse habitats affected in Utah have been previously affected by construction of high-voltage transmission lines. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected statewide by Alternative COUT BAX-B is presented in Table 3-119 and the extent of habitat affected in each Utah population crossed is presented in Table 3-123.

TABLE 3-123
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE HABITAT INVENTORY BY UTAH POPULATIONS CROSSED BY THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route by the Horn Mountain Population	Sage-grouse Habitat Types (acres affected)	
	Core Areas or Priority Habitat[1]	Habitat within 4 Miles of Leks Located in Core Areas or priority Habitat
COUT BAX-B	106	0
COUT BAX-C	105	0
COUT BAX-E	0	0

NOTES:
[1]For the purpose of this analysis, greater sage-grouse occupied habitat in Utah (Utah Division of Wildlife Resources 2013a) was considered to be synonymous with priority habitat.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Alternative COUT BAX-B does not affect priority sage-grouse habitats or sage-grouse habitats within 4 miles of known leks used by the Horn Mountain sage-grouse population. Habitats used by the Horn Mountain population that would be affected are in a sage-grouse management area identified by the State of Utah to protect, maintain, improve, and enhance sage-grouse populations and habitats (State of Utah). The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT BAX-B during the past 5 years and the percentage of the average Utah statewide sage-grouse male lek counts that this represents is presented in Table 3-120. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT BAX-B in each affected population during the past 5 years and the percentage of the average population wide sage-grouse male lek counts that this represents is presented in Table 3-122.

Mammals

Potentially suitable white-tailed prairie dog potential colonies are present along the length of all the COUT BAX alternative routes throughout Utah from Utah/Colorado border to the Manti-La Sal National Forest and injury of white-tailed prairie dogs and loss and modification of their habitats are likely to occur. White-tailed prairie dog potential colonies adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT BAX-B on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-B would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards,

guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT BAX-B would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT BAX-B would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

The affected environment (Tables 3-113 and 3-114) and environmental consequences (Table 3-117) for Alternative COUT BAX-C in Colorado are the same as Alternative COUT BAX-B as the two alternative routes follow the same alignment though the Rio Blanco, Garfield, and Mesa counties.

Affected Environment (Utah)

Alternative COUT BAX-C in Utah occurs in the Colorado Plateaus, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. The dominant vegetation types crossed by Alternative COUT BAX-C include shrub/shrub-steppe vegetation communities and large areas of barren/sparsely vegetated, big sagebrush, and pinyon-juniper vegetation communities also occur (Section 3.2.5). Lesser amounts of agriculture, alpine, aspen, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities are dispersed throughout this alternative route (Section 3.2.5). Special status wildlife species and habitats present and likely to be affected by Alternative COUT BAX-C are described under Environmental Setting for the COUT BAX alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT BAX alternative route is presented in Tables 3-118 and 3-119.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests located within 1 mile of Alternative COUT BAX-C in Utah are presented in Table 3-115. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Potential yellow-billed cuckoo habitat is crossed by Alternative COUT BAX-C in Utah where the alternative route follows U.S. Highway 6 and an existing 138kV transmission line corridor north toward Woodside (MV-11b). Alternative COUT BAX-C also affects potential yellow-billed cuckoo habitat at the Black Hills and Wilberg Flat areas along the existing power lines before crossing into USFS lands. A yellow-billed cuckoo was detected in 2012 at the Huntington Game Farm WMA near Huntington Creek adjacent to the alternative route (Hanson 2013).

Potential Mexican spotted owl habitat is crossed by Alternative COUT BAX-C in Utah at the Dry Mesa and Big Flat areas along County Road 401 before merging with the 345kV transmission line corridor at the Buckhorn Flat area (MV-11b). Incidental reports of Mexican spotted owl vocalizations have been reported in the vicinity of The Wedge, though no formal surveys have been completed (Wright 2012).

Potential southwestern willow flycatcher habitat is crossed by Alternative COUT BAX-C in Utah where the alternative route follows U.S. Highway 6 and an existing 138kV transmission line corridor north toward Woodside (MV-11b). Alternative COUT BAX-C also affects southwestern willow flycatcher habitat at the Black Hills and Wilberg Flat areas along the existing power lines before crossing into USFS-administered land.

Special Status Upland Game Birds

Sage-grouse habitats crossed by Alternative COUT BAX-C in Utah would be the same as Alternative COUT BAX-B (Table 3-114) as the two alternative routes follow the same alignment through sage-grouse habitat.

The sage-grouse population areas crossed by Alternative COUT BAX-C are the same as those described for Alternative COUT BAX-B.

Mammals

Potential white-tailed prairie dog colonies are crossed by Alternative COUT BAX-C in Utah where the alternative route follows I-70 southwest into Grand County through existing gas and oil fields toward Cisco as well as in the area northwest of Calf Canyon and the Buckhorn Flat area in an existing transmission line corridor before crossing into USFS land into East Mountain (MV-10b).

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT BAX-C in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT BAX-C would be similar to Alternative COUT BAX-B (Table 3-117; MV-10a, MV-11a, and MV-12a). The resources contributing to the high, moderate, and low impacts are the same for Alternative COUT BAX-C as Alternative COUT BAX-B.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT BAX-C in Utah is located within 1 mile of known raptor nests (Table 3-115). Additional raptor nests are likely to be located within 1 mile of Alternative COUT BAX-C. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Some loss of riparian vegetation along the Saleratus Wash in the Green River area, Huntington Creek, and Wilberg Flat areas that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. If yellow-billed cuckoos use riparian habitats affected by Alternative COUT BAX-C, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the Green River, Huntington Creek, and the Wilberg Flat. Potential habitat for Mexican

spotted owl is crossed by Alternative COUT BAX-C north of Buckhorn Wash. Incidental reports of Mexican spotted owl vocalizations have been reported in the vicinity of The Wedge, though no formal surveys have been completed (Wright 2012). If Mexican spotted owls are detected during preconstruction surveys, mitigation measures, including seasonal and spatial avoidance, would be implemented to reduce potential effects. However, some vegetation structure in potential Mexican spotted owl habitat could be lost as a result of the clearing of trees for safe operation of the transmission line.

Despite the implementation of temporal and spatial avoidance mitigation measures, some loss of riparian vegetation along Saleratus Wash in the Green River area, Huntington Creek, and Wilberg Flat areas that may provide suitable habitat for southwestern willow flycatcher could occur. Loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the amount of effective southwestern willow flycatcher territories along Saleratus Wash in the Green River area, Huntington Creek, Wilberg Flat areas in Emery County.

Special Status Upland Game Birds

The effects of Alternative COUT BAX-C on sage-grouse in Utah would be the same as Alternative COUT BAX-B (Tables 3-114, 3-116, and 3-119) as the two alternative routes follow the same alignment through sage-grouse habitat in Utah.

Mammals

Alternative COUT BAX-C crosses more potential white-tailed prairie dog potential colonies than Alternative COUT BAX-B and COUT BAX-E in Utah. Potentially suitable white-tailed prairie dog potential colonies are present along the length of all the COUT BAX alternative routes throughout Utah from Utah/Colorado border to the Manti-La Sal National Forest and injury of white-tailed prairie dogs and loss and modification of their habitats are likely to occur. White-tailed prairie dog potential colonies adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT BAX-C on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-C would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT BAX-C would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT BAX-C would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

The affected environment (Tables 3-113 and 3-114) and environmental consequences Table 3-117) for Alternative COUT BAX-E in Colorado are the same as Alternative COUT BAX-B as the two alternative routes follow the same alignment though the Rio Blanco, Garfield, and Mesa counties.

Affected Environment (Utah)

Alternative COUT BAX-E in Utah occurs in the Colorado Plateaus, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. The vegetation communities crossed by Alternative COUT BAX-E include shrub/shrub-steppe and large areas of barren/sparsely vegetated, big sagebrush, and pinyon-juniper (Section 3.2.5). Lesser amounts of agriculture, alpine, aspen, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities are dispersed throughout this alternative route (Section 3.2.5). Special status wildlife species and habitats present and likely to be affected by Alternative COUT BAX-E are described in the Environmental Setting for the COUT BAX alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT BAX alternative route is presented in Tables 3-118 and 3-119.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT BAX-E, in Utah are presented in Table 3-115. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Potential yellow-billed cuckoo habitat is crossed by Alternative COUT BAX-E in Utah where the alternative route follows U.S. Highway 6 along an existing 138kV transmission line corridor at the Gunnison Valley area, at the Lower Price River intersection in the Woodside area, at the intersection of the Price River tributaries along the Carbon/Emery County border south of Clark Valley, and in the Rocky Ridge area north of the Manti-La Sal National Forest boundary at intersection with Salt Creek along Utah State Route 132 and an existing transmission line corridor (MV-11b). A yellow-billed cuckoo was detected in 2012 at the Huntington Game Farm WMA near Huntington Creek adjacent to the alternative route (Hanson 2013).

Potential southwestern willow flycatcher habitat is crossed by Alternative COUT BAX-E in Utah where the alternative route follows U.S. Highway 6 north along an existing 138kV transmission line corridor at the Green Valley area, Gunnison Valley area, at the Lower Price River intersection in the Woodside area, and at the intersections of the Price River tributaries along the Carbon/Emery County border south of Clark Valley (MV-11b).

Special Status Upland Game Birds

In Utah, Alternative COUT BAX-E crosses sage-grouse occupied habitat and designated Priority Areas for Conservation (Table 3-114, MV-12b). Some areas of occupied habitat include designated brood-rearing habitats. Occupied habitats are crossed west of Price where the alternative route parallels an existing high-voltage transmission line and some of these habitats have been affected by previous oil and gas development. Occupied habitats are crossed in the vicinity of Utah State Route 264, at the Slick Hills Hollow area on the Manti-La Sal National Forest. Finally, occupied habitats are crossed in the Sanpete Valley north west of Fairview in an area that has been converted to agricultural development. Alternative COUT BAX-E does not cross habitats located within 4 miles of known leks in Utah (Table 3-114, MV-

12b). The extent of sage-grouse habitats crossed by Alternative COUT BAX-E is presented in Table 3-119. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-116.

Mammals

Potential white-tailed prairie dog colonies are crossed by Alternative COUT BAX-E in Utah where the alternative route follows I-70 southwest into Grand County through existing gas and oil fields toward Cisco (MV-10b). Alternative COUT BAX-E crosses potential white-tailed prairie dog colonies where the alternative travels north toward Cedar south of Woodside and just south of the Carbon/Emery County border north of Cedar City.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT BAX-E in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT BAX-E would be greater than other COUT BAX alternative routes (Table 3-117; MV-10b, MV-11b, and MV-12b). The resources contributing to high, moderate, and low impacts are the same for Alternative COUT BAX-E as COUT BAX-B and COUT BAX-C.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT BAX-E in Utah is located within 1 mile of known raptor nests (Table 3-115). Additional raptor nests are likely to be located within 1 mile of Alternative COUT BAX-E. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Some loss of riparian vegetation along Saleratus Wash in the Green River area, Lower Price River, Cottonwood Creek, and Price River tributaries along the Carbon/Emery County border that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. A yellow-billed cuckoo was detected in 2012 at the Huntington Game Farm WMA near Huntington Creek adjacent to the alternative route (Hanson 2013). If yellow-billed cuckoos use riparian habitats affected by Alternative COUT BAX-E, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along Saleratus Wash in the Green River area, the Price River, and Cottonwood Creek in Carbon and Emery counties. Despite the implementation of temporal and spatial avoidance mitigation measures, some loss of riparian vegetation along Saleratus Wash, the Green River, the Lower Price River and tributaries to the Price River along the Carbon/Emery County border that may provide suitable habitat for southwestern willow flycatcher could occur. Loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the amount of effective southwestern willow flycatcher territories along Saleratus Wash, the Green River, the Price River, and Cottonwood Creek in Carbon and Emery counties.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT BAX-E in Utah would occur in mapped general habitat and would not occur within 4 miles of known leks. Additionally, sage-grouse habitats crossed have previously been affected by construction of high-voltage transmission lines, oil and gas development, state highways, and agricultural development. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected by Alternative COUT BAX-E in Utah is presented in Table 3-119.

Mammals

Potentially suitable white-tailed prairie dog potential colonies are present along the length of the alternative route from the Utah/Colorado border to the Manti-La Sal National Forest, disturbance to white-tailed prairie dogs and associated colonies could occur. White-tailed prairie dog habitats adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT BAX-E on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-E would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT BAX-E would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT BAX-E would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b)

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

Environmental Setting

The COUT alternative routes are located in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. Vegetation communities crossed by the COUT alternative routes in Colorado and eastern Utah's Uinta Basin are dominated by shrub/shrub-steppe, big sagebrush, barren, invasive, and pinyon-juniper habitats; in central Utah habitat types crossed are dominated by pinyon-juniper, big sagebrush, agriculture, montane forest, aspen, and mountain shrub. Agricultural areas and areas disturbed by previous human activities are concentrated near the cities of Roosevelt, Vernal, Helper, Price, Wellington, and Nephi (Section 3.2.5.4).

All of the COUT alternative routes begin along U.S. Highway 40 in Colorado and end at the Clover Substation near Mona, Utah. The alternative routes cross the Uinta Basin using one of two paths before following various paths across the Ashley, Uinta, and/or Manti-La Sal National Forests and the Sanpete Valley, terminating at the Clover Substation. A detailed description of the vegetation communities crossed by the COUT alternative routes and their existing condition is included in Environmental Setting in Section 3.2.5 for the COUT alternative routes.

Special status wildlife species known to occur or may occur in the potentially suitable habitats crossed by the COUT alternative routes include black-footed ferret, sage-grouse, Mexican spotted owl, white-tailed prairie dog, yellow-billed cuckoo, mountain plover, and other species (including but not limited to burrowing owl) described in Appendix J, Section J.6. The COUT alternative routes cross designated sage-grouse general habitats and winter habitats in western Colorado, as well as designated Priority Areas for Conservation, occupied, brood-rearing, and winter sage-grouse habitats in Utah. Habitats within 4 miles of sage-grouse leks, and localized areas of relatively higher population densities (e.g., Emma Park) are crossed in Utah (Doherty et al. 2010). Sage-grouse habitats crossed by the COUT alternative routes in Utah include habitats used by the Emma Park, Anthro Mountain, Strawberry/Fruitland, South Slope Uinta, Horn Mountain, Halfway Hollow, and Deadman's Bench sage-grouse populations. UDWR-designated sage-grouse habitats that do not currently support a known population also are crossed. Sage-grouse populations and habitats crossed in Utah are in the Carbon, Strawberry Valley, Uintah, and Emery sage-grouse management areas identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a) and the Parker Mountain-Emery, Carbon, Strawberry, and Uintah Sage-grouse Management Areas identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

All of the COUT alternative routes cross the southwest corner of the Wolf Creek black-footed ferret reintroduction management area in Colorado and either the Coyote Basin or Snake John Reef reintroduction management areas in Utah. Reintroduced ferrets in the Wolf Creek management area are believed to have been lost to a plague event in 2008 and 2009 and ferrets have not been reintroduced since (Ausmus 2012). Black-footed ferret reintroductions are ongoing in the Snake John Reef and Coyote Basin reintroduction management areas in Utah, and ferrets are likely to occur in these areas. Mexican spotted owl potential habitat occurs in the Argyle Canyon area and is crossed by some of the COUT alternative routes. BLM has conducted surveys for Mexican spotted owls in the Argyle Canyon area, and the Coal Creek area south of the roan Cliffs in Carbon County and no owls have been detected (McDonald and Emmett 2012; Wright 2012). However, surveys that have been performed did not encompass all of the potential Mexican spotted owl habitats crossed. White-tailed prairie dogs are locally common in northwestern Colorado and eastern Utah; though plague, management as a pest species, and habitat loss has limited the species distribution and population size. Yellow-billed cuckoos may occur in the limited riparian habitats supported by major rivers and perennial and intermittent streams throughout the Project area. Alternative routes COUT-A and COUT-B cross proposed critical habitat for yellow-billed cuckoo that includes a 38-mile-long segment of the Green River in the vicinity of Ouray in Uintah County, Utah, and a 9-mile-long segment of the Lake Fork River, west of the town of Roosevelt in Duchesne County, Utah. Mountain plovers are known to use disturbed, grassland, and shrubland habitats in Colorado and Utah (Bosworth 2003; Knopf and Miller 1994), though the COUT alternative routes are on the periphery of the species' breeding range and the mountain plovers are scarce in these areas (Dinsmore 2003). The breeding population of mountain plovers in Utah is very small and may have been extirpated (Bosworth 2003).

Alternative COUT-A

Affected Environment (Colorado)

Alternative COUT-A in Colorado is entirely in the Colorado Plateau Ecoregion, which is predominantly big sagebrush communities (Section 3.2.5). Smaller areas of barren/sparsely vegetated, invasive, pinyon-juniper, and shrub-steppe vegetation communities also occur along this alternative route in Colorado. Special status wildlife species and habitats present and likely to be affected by this alternative route are described in Environmental Setting for the COUT alternative routes.

The extent of potential habitat for each special status wildlife species crossed by each COUT alternative route is presented in Tables 3-124 to 3-125.

TABLE 3-124
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Special Status Mammals (miles crossed)			Special Status Birds (miles crossed)				
					Potential Habitat			Yellow-billed Cuckoo	
		Black-footed Ferret Management Areas	White-tailed Prairie Dog Potential Colony	Pygmy Rabbit Potential Habitat	Mountain Plover	Mexican Spotted Owl	Southwestern Willow Flycatcher	Potential Habitat	Proposed Critical Habitat
COUT-A	207.9	5.4	17.8	0.0	17.9	0.0	0.0	3.0	0.5
Colorado	*24.3*	*1.2*	*10.7*	*0.0*	*5.7*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*4.2*	*7.1*	*0.0*	*12.2*	*0.0*	*0.0*	*3.0*	*0.5*
COUT-B	218.2	5.4	18.9	0.0	20.8	4.7	0.0	3.0	1.1
Colorado	*24.3*	*1.2*	*10.7*	*0.0*	*5.7*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*4.2*	*8.2*	*0.0*	*15.1*	*4.7*	*0.0*	*3.0*	*1.1*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	8.7	16.2	0.0	31.7	10.4	0.0	0.5	0.0
Colorado	*25.0*	*1.2*	*9.3*	*0.0*	*4.2*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*7.5*	*6.9*	*0.0*	*27.0*	*10.4*	*0.0*	*0.5*	*0.0*
COUT-H	200.6	8.7	17.3	0.0	31.7	9.8	0.0	0.6	0.0
Colorado	*25.0*	*1.2*	*9.3*	*0.0*	*4.7*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*7.5*	*8.0*	*0.0*	*27.0*	*9.8*	*0.0*	*0.6*	*0.0*
COUT-I	240.2	8.7	20.5	0.0	31.7	13.5	0.0	0.3	0.0
Colorado	*25.0*	*1.2*	*9.3*	*0.0*	*4.7*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*7.5*	*11.2*	*0.0*	*27.0*	*13.5*	*0.0*	*0.3*	*0.0*

NOTES:
[1]The miles crossed for the special status mammals and birds columns will not add to the total miles column due to overlapping habitats.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

TABLE 3-125
ALTERNATIVE ROUTE COMPARISON FOR GREATER-SAGE-GROUSE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles[1]	Core Areas or Priority Habitat	General Habitat and Transmission Line Corridors Designated in Wyoming Executive Order 2011-5	Priority Areas for Conservation	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat	Habitat within 4 Miles of Leks Located Outside Core Areas or Priority Habitat	Areas within 4 miles of Leks Outside of Sage-grouse Habitat	Brood Habitat	Winter Habitat
COUT-A	207.9	50.6	21.9	34.4	29.9	0.0	3.4	50.6	47.1
Colorado	*24.3*	*0.0*	*21.9*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*9.6*
Utah	*183.6*	*50.6*	*0.0*	*34.4*	*29.9*	*0.0*	*3.4*	*50.6*	*37.5*
COUT-B	218.2	53.1	21.9	23.8	24.2	0.0	12.8	44.6	55.0
Colorado	*24.3*	*0.0*	*21.9*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*9.6*
Utah	*193.9*	*53.1*	*0.0*	*23.8*	*24.2*	*0.0*	*12.8*	*44.6*	*45.4*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	23.1	22.6	12.9	3.0	0.0	22.2	22.7	32.7
Colorado	*25.0*	*0.0*	*22.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*7.6*
Utah	*183.2*	*23.1*	*0.0*	*12.9*	*3.0*	*0.0*	*22.2*	*22.7*	*23.1*
COUT-H	200.6	41.8	22.6	38.4	7.7	0.0	12.7	26.7	33.5
Colorado	*25.0*	*0.0*	*22.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*9.6*
Utah	*175.6*	*41.8*	*0.0*	*38.4*	*7.7*	*0.0*	*12.7*	*26.7*	*23.9*
COUT-I	240.2	38.4	22.6	25.8	9.3	0.0	11.8	31.4	39.5
Colorado	*25.0*	*0.0*	*22.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*9.6*
Utah	*215.2*	*38.4*	*0.0*	*25.8*	*9.3*	*0.0*	*11.8*	*31.4*	*29.9*

NOTES:
[1]The miles crossed for the special status mammals and birds columns will not add to the total miles column due to overlapping habitats.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-A in Colorado are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

TABLE 3-126
ALTERNATIVE ROUTE COMPARISON FOR ADDITIONAL SPECIAL STATUS WILDLIFE INVENTORY
FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

	Columbian Sharp-tailed Grouse		Bald Eagle		Northern Goshawk			Peregrine Falcon		Golden Eagle	Ferruginous Hawk	Swainson's Hawk
Alternative Route[1]	Number of Known Leks within 4 Miles of Centerline	Acres of Winter Habitat	Number of Known Nests within 1 Mile of Centerline	Number of Known Winter Roost Sites Crossed	Number of Known Nests within 0.5 Mile of Centerline	Acres of Post-fledging Areas	Number of Known Post-fledging areas within 0.5 Mile of Centerline	Number of Known Nests within 1 Mile of Centerline	Acres of Nesting Areas	Number of Known Nests within 0.5 Mile of Centerline	Number of Known Nests within 1 Mile of Centerline	Number of Nests within 0.25 Mile
COUT-A	0	0	0	2	0	0	1	*0*	*0*	10	53	7
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*2*	*0*	*0*	*1*	*0*	*0*	*10*	*53*	*7*
COUT-B	0	0	0	2	0	21	*0*	*0*	*0*	9	53	7
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*2*	*0*	*21*	*0*	*0*	*0*	*9*	*53*	*7*
COUT-C (Agency and Applicant Preferred Alternative)	0	0	0	*0*	0	*0*	*0*	*0*	*0*	15	15	4
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*15*	*15*	*4*
COUT-H	0	0	0	*0*	0	*0*	*0*	*0*	*0*	28	15	10
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*28*	*15*	*10*
COUT-I	0	0	0	*0*	2	*0*	*0*	*0*	*0*	30	17	10
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*0*	*30*	*17*	*10*

NOTES:
[1]Comprehensive raptor nest survey data are not currently available for all alternative routes but preconstruction surveys will be conducted along the selected alternative route and seasonal and spatial restrictions on construction and maintenance (Selective Mitigation Measure 12) would be applied to all known nests.
This table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Zeros reported in this table do not represent absence data and dashes (-) appear where data were not available. The specific data sources represented in this table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

If selected, Alternative COUT-A in Colorado could require construction in buffer areas around active raptor nests closed to construction activities year-round by a CSU stipulation in the BLM White River Field Office RMP that requires year-round spatial buffers for active raptor nests. However, exceptions to the BLM-determined buffer distances can be granted by the BLM field office manager depending on species, nest activity, natural topographic barriers, and construction line-of-sight distances. If an exception or modification is granted, the Applicant may be required to monitor the site for up to 5 years post construction.

Potential mountain plover habitat occurs throughout the majority of the length of Alternative COUT-A from Massadona to Myton Bench area in Duchesne County (MV-11b). Mountain plovers are not known to use the majority of the potential habitat crossed.

Special Status Upland Game Birds

In Colorado, Alternative COUT-A crosses sage-grouse general habitats, but does not cross Priority Areas for Conservation, priority habitats, or habitats within 4 miles of leks (Table 3-125, MV-12b). Sage-grouse winter habitat is crossed north of Rangely. The alternative route parallels an existing high-voltage transmission lines and a paved highway (MV-12b). The extent of sage-grouse habitats crossed by Alternative COUT-A is presented in Table 3-125. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-127.

TABLE 3-127
SUMMARY OF SAGE-GROUSE LEK DISTANCES TO ALTERNATIVE ROUTE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Number of Sage-grouse Leks		
	Within 2 Miles	**Within 4 Miles**	**Within 11 Miles**
COUT-A	4	10	22
Colorado	*0*	*0*	*7*
Utah	*4*	*10*	*15*
COUT-B	6	9	29
Colorado	*0*	*0*	*7*
Utah	*6*	*9*	*22*
COUT-C (Agency and Applicant Preferred Alternative)	0	0	12
Colorado	*0*	*0*	*7*
Utah	*0*	*0*	*5*
COUT-H	5	8	21
Colorado	*0*	*0*	*7*
Utah	*5*	*8*	*14*
COUT-I	5	6	21
Colorado	*0*	*0*	*7*
Utah	*5*	*6*	*14*

NOTE:
Lek analysis includes only leks in contiguous sage-grouse habitat crossed by each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Colorado Sage-grouse Populations Crossed by Alternative COUT-A

Northwest Colorado

Alternative COUT-A in Colorado crosses sage-grouse habitat in Management Zones 9 and 10 (Map 3-4). Descriptions of sage-grouse habitats crossed in Management Zone 9 (Sagebrush Draw, the U.S. Highway 40 corridor, and Indian Valley) and Management Zone 10 (Crooked Wash and the U.S. Highway 40 corridor) are provided above for Alternative WYCO-B.

Mammals

Alternative COUT-A in Colorado affects the Wolf Creek black-footed ferret reintroduction management area through sagebrush, grassland, and pinyon-juniper habitats following an existing transmission line and U.S. Highway 40 from Elk Springs toward Massadona (MV-10b). Reintroduced ferrets in the Wolf Creek management area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012).

Alternative COUT-A crosses potential white-tailed prairie dog colonies from Massadona to the Colorado/Utah border along the existing U.S. Highway 40 disturbance corridor (MV-10b).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-A in Colorado and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Colorado under Alternative COUT-A would be similar to the other COUT alternative routes (Table 3-128; MV-10b, MV-11b, and MV-12b).

Residual impact levels listed in Table 3-128 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Colorado, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Wolf Creek reintroduction management area). Moderate impacts would be on potential white-tailed prairie dog colonies. Low impacts would be on potential mountain plover habitat and sage-grouse general habitat.

TABLE 3-128
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE RESOURCES RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Residual Impacts[1, 2] (miles crossed)			
		Nonidentifiable[3]	Low	Moderate	High
COUT-A	207.9	117.3	18.0	16.6	56.0
Colorado	*24.3*	*2.1*	*11.5*	*9.5*	*1.2*
Utah	*183.6*	*115.2*	*6.5*	*7.1*	*54.8*
COUT-B	218.2	119.9	19.8	20.0	58.5
Colorado	*24.3*	*2.1*	*11.5*	*9.5*	*1.2*
Utah	*193.9*	*117.8*	*8.3*	*10.5*	*57.3*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	132.0	31.1	20.8	24.3
Colorado	*25.0*	*2.1*	*13.6*	*8.1*	*1.2*
Utah	*183.2*	*129.9*	*17.5*	*12.7*	*23.1*
COUT-H	200.6	106.4	31.1	20.1	43.0
Colorado	*25.0*	*2.1*	*13.6*	*8.1*	*1.2*
Utah	*175.6*	*104.3*	*17.5*	*12.0*	*41.8*
COUT-I	240.2	142.5	31.1	27.0	39.6
Colorado	*25.0*	*2.1*	*13.6*	*8.1*	*1.2*
Utah	*215.2*	*140.4*	*17.5*	*18.9*	*38.4*

NOTES:
[1]Where multiple special status wildlife resources are crossed, the resource with the highest impact-level assignment was reported.
[2]Includes impacts on black-footed ferret, white-tailed prairie dog, pygmy rabbit, mountain plover, Mexican spotted owl, southwestern willow flycatcher, yellow-billed cuckoo, and greater sage-grouse and associated special status habitats.
[3]Miles are along the reference centerlines where none of the modeled habitats listed in the previous note occur.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Raptor nest locations are not currently known within 1 mile of Alternative COUT A in Colorado (Table 3-126), but raptor nests are likely to be located during field surveys. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-A in Colorado from Massadona to the Colorado/Utah border; however, mountain plovers are not known to currently use these habitats (Table 3-129). Despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur if plovers are present in the habitats affected. Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and would be likely to continue to use habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

TABLE 3-129
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL STATUS WILDLIFE
ESTIMATED HABITAT DISTURBANCE (IN ACRES) FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

	Special Status Mammals			Special Status Birds				
				Potential Habitat			Yellow-billed Cuckoo	
Alternative Route	**Black-footed Ferret Management Areas**	**White-tailed Prairie Dog Potential Colony**	**Pygmy Rabbit Potential Habitat**	**Mountain Plover**	**Mexican Spotted Owl**	**Southwestern Willow Flycatcher**	**Potential Habitat**	**Proposed Critical Habitat**
COUT-A	96	316	0	318	0	0	53	9
Colorado	*21*	*190*	*0*	*101*	*0*	*0*	*0*	*0*
Utah	*75*	*126*	*0*	*217*	*0*	*0*	*53*	*9*
COUT-B	94	327	0	360	81	0	52	19
Colorado	*21*	*185*	*0*	*99*	*0*	*0*	*0*	*0*
Utah	*73*	*142*	*0*	*262*	*81*	*0*	*52*	*19*
COUT-C (Agency and Applicant Preferred Alternative)	162	302	0	591	194	0	9	0
Colorado	*22*	*173*	*0*	*88*	*0*	*0*	*0*	*0*
Utah	*140*	*129*	*0*	*503*	*194*	*0*	*9*	*0*
COUT-H	157	313	0	574	177	0	11	0
Colorado	*22*	*168*	*0*	*85*	*0*	*0*	*0*	*0*
Utah	*136*	*145*	*0*	*489*	*177*	*0*	*11*	*0*
COUT-I	155	365	0	565	241	0	5	0
Colorado	*21*	*166*	*0*	*84*	*0*	*0*	*0*	*0*
Utah	*134*	*200*	*0*	*481*	*241*	*0*	*5*	*0*

NOTES:
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT-A in Colorado would occur in mapped general habitat and would not occur within 4 miles of known leks. Additionally, sage-grouse habitats affected by the alternative route have been previously affected by noise, human presence, and vehicle use associated with the existing transmission line and highways. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats that would be affected by Alternative COUT-A is presented in Table 3-130.

TABLE 3-130
ALTERNATIVE ROUTE COMPARISON FOR GREATER-SAGE-GROUSE ESTIMATED HABITAT DISTURBANCE (IN ACRES) FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Core Areas or Priority Habitat	General Habitat and Transmission Line Corridors Designated in Wyoming Executive Order 2011-5	Priority Areas for Conservation	Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat	Habitat within 4 Miles of Leks Located Outside Core Areas or Priority Habitat	Areas within 4 miles of Leks Outside of Sage-grouse Habitat	Brood Habitat	Winter Habitat
COUT-A	898	389	610	531	0	60	898	836
Colorado	*0*	*389*	*0*	*0*	*0*	*0*	0	*170*
Utah	*898*	*0*	*610*	*531*	*0*	*60*	*898*	*665*
COUT-B	920	380	412	419	0	222	773	953
Colorado	*0*	*380*	*0*	*0*	*0*	*0*	0	*166*
Utah	*920*	*0*	*412*	*419*	*0*	*222*	*773*	*787*
COUT-C (Agency and Applicant Preferred Alternative)	430	421	240	56	0	414	423	609
Colorado	*0*	*421*	*0*	*0*	*0*	*0*	0	*179*
Utah	*430*	*0*	*240*	*56*	*0*	*414*	*423*	*430*
COUT-H	756	409	695	139	0	230	483	606
Colorado	*0*	*409*	*0*	*0*	*0*	*0*	0	*174*
Utah	*756*	*0*	*695*	*139*	*0*	*230*	*483*	*432*
COUT-I	684	403	460	166	0	210	559	703
Colorado	*0*	*403*	*0*	*0*	*0*	*0*	0	*171*
Utah	*684*	*0*	*460*	*166*	*0*	*210*	*559*	*533*

NOTE: The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources represented in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Mammals

Black footed-ferret occurrences have not been recorded since a 2008 and 2009 plague affected the Wolf Creek ferret population, ferrets have not been located in the last 4 years, and reintroductions are not currently taking place (Ausmus 2012). However, if black-footed ferret reintroductions are resumed in the future, Alternative COUT-A could result in effects described in Section 3.2.8.4.

Potentially suitable white-tailed prairie dog colonies are present along the length of Alternative COUT-A in Colorado from Massadona to the Colorado/Utah border, disturbance to white-tailed prairie dogs and associated habitats could occur. White-tailed prairie dog potential colonies adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT-A on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Affected Environment (Utah)

Alternative COUT-A in Utah occurs in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions and cross predominantly agriculture, big sagebrush, mountain shrub, pinyon-juniper, and shrub-steppe communities (Section 3.2.5). Smaller areas of alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, water, and wetland vegetation communities also occur along this alternative route in Utah. Special status wildlife species and habitats present and likely to be affected by Alternative COUT-A are described in Environmental Setting for the COUT alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT alternative route is presented in Table 3-124.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-A in Utah are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Alternative COUT-A crosses yellow-billed cuckoo potential habitat that occurs along intersections of the Green River, Lake Fork River, Duchesne River tributaries, and Starvation Reservoir tributaries in the U.S. Highway 40 and transmission line corridor (Table 3-129 and MV-11b). Alternative COUT-A also crosses yellow-billed cuckoo proposed critical habitat that occurs along intersections of the Green River in the vicinity of Ouray in Uintah County and the Lake Fork River west of the town of Roosevelt in Duchesne County (Table 3-124 and MV-11b). Proposed critical habitat along the Green River consists of a 38-mile-long segment of the Green River that has consistently had Western yellow-billed cuckoos during the breeding season and provides a movement corridor for western yellow-billed cuckoos moving farther north (79 FR 48547). Proposed critical habitat along the Lake Fork River is a 9-mile-long continuous segment that has been consistently occupied by Western yellow-billed cuckoos during the breeding season and provides migratory stopover habitat for Western yellow-billed cuckoos moving farther north (79 FR 48547).

Potential mountain plover habitat occurs throughout the majority of the length of Alternative COUT-A in Utah from the west side of Raven Ridge along the Utah/Colorado border to the northwest of Starvation Reservoir (Table 3-129 and MV-11b).

Special Status Upland Game Birds

In Utah, Alternative COUT-A crosses sage-grouse occupied habitat south of U.S. Highway 40 near the Colorado/Utah border, southwest of Vernal, northeast of Duchesne, and east of Strawberry Reservoir in the vicinity of Fruitland. Some areas of occupied habitat include designated brood-rearing and winter habitats. Habitats used by four different sage-grouse populations (Strawberry/Fruitland, South Slope Uinta, Halfway Hollow, and Deadman's Bench), designated Priority Areas for Conservation, and areas within 4 miles of known leks in all of the populations are crossed (Map 3-5). This alternative parallels an existing 345kV steel-lattice transmission line for the majority of the distance where sage-grouse habitat is crossed in Utah, including all areas within 4 miles of known leks. The extent of sage-grouse habitats crossed by Alternative COUT-A is presented in Table 3-125. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-127. The specific extent of sage-grouse habitat occupied by the Strawberry/Fruitland, South Slope Uinta, Halfway Hollow, and Deadman's Bench populations crossed by Alternative COUT-A in Utah is presented in Table 3-134. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route in habitat occupied by the 4 populations are presented in Table 3-131.

TABLE 3-131
ALTERNATIVE ROUTE COMPARISON FOR SAGE-GROUSE HABITAT INVENTORY BY UTAH POPULATIONS CROSSED BY THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Sage-grouse Habitat Type (miles crossed)													
	Core Areas or Priority Habitat[1]							Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat						
	Anthro Mountain	Deadman's Bench	Emma Park	Halfway Hollow	Horn Mountain	South Slope Uinta	Strawberry/Fruitland	Anthro Mountain	Deadman's Bench	Emma Park	Halfway Hollow	Horn Mountain	South Slope Uinta	Strawberry/Fruitland
COUT-A	0.0	9.9	0.0	12.7	0.0	8.9	19.1	0.0	2.4	0.0	4.2	0.0	7.6	15.7
COUT-B	0.0	9.9	21.4	12.7	0.0	9.1	0.0	0.0	2.4	17.6	4.2	0.0	0.0	0.0
COUT-C (Agency and Applicant Preferred Alternative)	4.4	16.0	2.7	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
COUT-H	4.4	16.0	6.1	0.0	0.0	0.0	0.0	0.0	3.0	4.7	0.0	0.0	0.0	0.0
COUT-I	4.4	16.0	7.7	0.0	6.3	0.0	0.0	0.0	3.0	6.3	0.0	0.0	0.0	0.0

NOTES:
[1]For the purpose of this analysis, greater sage-grouse occupied habitat in Utah (Utah Division of Wildlife Resources 2012d) was considered to be synonymous with priority habitat.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Sage-grouse Population Areas Crossed by Alternative COUT-A

South Slope

The South Slope Uinta sage-grouse population is a small to medium-sized sage-grouse population limited to a moderately sized habitat area that has incurred anthropogenic and natural fragmentation (BLM 2013b). The population is estimated to range between 56 and 340 sage-grouse (14 to 85 males counted on 13 leks) based lek count over the last 6 years (BLM 2013b). The UDWR-designated sage-grouse habitat occupied by the South Slope population occurs in the northeastern portion of Utah in Duchesne County. The population is in the Southern Great Basin: Management Zone 2 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and Uintah sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). The population is not included in any sage-grouse management area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

The 270,000-acre UDWR-designated sage-grouse habitat area occupied by the South Slope Uinta population is located on the northwestern portion of the Uinta Basin (Map 3-5). Elevation in occupied habitat ranges from 8,000 feet in the north in the foothills of the Uinta Mountains to 5,600 feet in the south near the Duchesne River. The southern half of the UDWR-designated sage-grouse habitat occupied by the South Slope population (primarily private lands) is fragmented and degraded habitat due to pinyon-juniper encroachment and anthropogenic activities including oil and gas development. The majority of birds in the South Slope Uinta sage-grouse population are found in the northern half of the designated habitat area on higher elevation tribal lands where little site-specific data are available.

Oil developments occur in an east to west band across the center of the South Slope Uinta UDWR-designated habitat area. Currently 30 percent (82,560 acres) of the designated occupied habitat has development that exceeds one well per square mile (BLM 2013b). In addition, habitats across the center of the South Slope Uinta area have been affected by a series of roads, transmission lines, agriculture, and housing developments. Three leks in the southern portion of the South Slope habitat area have been vacant for over 10 years but recent winter use by sage-grouse has been documented in the area (BLM 2013b). Pinyon-juniper encroachment is occurring in upper elevations of the designated sage-grouse habitat occupied by the South Slope population.

Little is known about sage-grouse movements, important seasonal habitat areas, and factors that could be limiting to the South Slope Uinta sage-grouse population due to lack of recent studies and telemetry data. Sage-grouse appear to be congregating on less disturbed, high elevation tribal lands, avoiding the lower two thirds of the UDWR-designated habitat that has been affected by various natural and anthropogenic disturbances. Sage-grouse were documented to have abandoned the Blue Bench lek after the construction of the 345kV steel-lattice Bonanza to Mona transmission line in the vicinity of the lek in the 1980s (Ellis 1985). Alternative COUT-A is parallel to the existing 345kV steel-lattice Bonanza to Mona transmission line where it crosses habitats occupied by the South Slope Uinta sage-grouse population.

The South Slope Uinta sage-grouse population is part of the larger Utah Northeast Central population identified by Garton et al. (2011), who conducted population modeling that suggested the larger population is stable. Population-specific lek counts (UDWR 2013) for the South Slope Uinta also suggest a stable population (BLM 2013c). In concert with all population segments making up the Uinta population, the FWS consider the management area low risk (FWS 2013a).

Halfway Hollow

The Halfway Hollow sage-grouse population is a small to medium-sized sage-grouse population in a moderately sized habitat area surrounded by an increasingly developed landscape (BLM 2013c). The population is estimated to range between 120 and 332 sage-grouse (30 to 83 males counted on 10 leks), based on lek counts over the last 10 years (UDWR 2012d). The designated habitat occupied by the Halfway Hollow sage-grouse population occurs in northeastern Utah in northwest Uintah County. The population is in the Southern Great Basin: Management Zone 2 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and Uintah sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). The population is partially included in the Uintah Sage-grouse Management Area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a), but habitats crossed by the Project are not in the Uintah Sage-grouse Management Area.

The 263,000-acre UDWR-designated sage-grouse habitat occupied by the Halfway Hollow population is located on the northeastern portion of the Uinta Basin. Elevation in occupied habitat ranges from 8,500 feet in the north in the foothills of the Uinta Mountains to 5,000 feet in the south near the Duchesne River (Map 3-5). The Halfway Hollow area is comprised of Wyoming sagebrush at low elevations with particularly prevalent pinyon-juniper encroachment at mid-elevations and mountain sagebrush at upper elevations. Contiguous habitat in the Halfway Hallow area ranges in condition from degraded understory vegetation with some cheatgrass at lower elevations to increasing understory diversity at mid-elevations to intact and diverse understory vegetation at upper elevations. Recently, limited telemetry monitoring has been initiated on sage-grouse in the Little Mountain area. Radio-equipped sage-grouse have remained in the upper elevation areas to date (BLM 2013c).

UDWR-designated sage-grouse habitat occupied by this population is somewhat contiguous with other medium to large sage-grouse populations (i.e., Diamond Mountain) in the region The Halfway Hollow population is likely to be more resilient to threats due to its proximity and potential connectivity with the

adjacent populations. Factors impacting the Halfway Hallow sage-grouse population dynamics are not well understood, though energy development and other anthropogenic impacts could be primary factors adversely influencing this sage-grouse population.

Anthropogenic habitat disturbance in habitat associated with the Halfway Hollow population has increased at a relatively slow rate, though future interest in the area is growing. The western half of the Halfway Hollow population's habitat area is dominated by agricultural fields and rural human developments. Roads, transmission lines, oil development (290 wells), and proposed oil sands development are located primarily in the southern half of the designated sage-grouse habitat area associated with the Halfway Hollow population. Oil development has been occurring at low levels with varying densities. Approximately, 14 percent of the designated sage-grouse habitat area has one well per section and 18 percent of the habitat area exceeds one well per section (BLM 2013c). On the eastern half of the area, on SITLA land, the nation's first oil sands mining operation is proposed with the potential for greater than 200 new exploratory wells (BLM 2013c).

In addition to the effects of anthropogenic development, pinyon-juniper encroachment is widespread in designated habitats in the Halfway Hollow sage-grouse population. Conservation efforts are currently focused on reclaiming sagebrush areas to improve sage-grouse habitat by removing pinyon-juniper.

The Halfway Hollow sage-grouse population is part of the larger Wyoming Basin population identified by Garton et al. (2011), who conducted population modeling that suggested the larger population is in decline. The greater Wyoming Basin population is thought to be in decline based on population modeling and lek counts, which are consistent with a downward population trend (Garton et al. 2011). The Halfway Hollow population is considered part of the Uintah sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report*, which is considered to be at low risk (FWS 2013a).

Deadman's Bench

The Deadman's Bench sage-grouse population contains two leks occupied by fewer than 10 birds each since 1989 (UDWR 2012b). The estimated population size ranges between 0 and 28 sage-grouse (0 and 7 males) based on 10 years of lek counts. The low lek occupancy suggests individual birds travel between the Deadman's Bench area and other designated sage-grouse habitats; as such a small population is not likely to persist for more than 20 years without some immigration/emigration between other populations. The UDWR-designated sage-grouse habitat associated with the Deadman's Bench population occurs in the northeastern portion of Utah in eastern Uintah County (Map 3-5). The population is in the Wyoming Basin: Management Zone 2 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and Uintah sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). The population is not included in any sage-grouse management area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

The habitat occupied by the Deadman's Bench sage-grouse population encompasses 134,650 acres of dry, low elevation habitat (5,400 to 5,700 feet). Wyoming big sagebrush and understory vegetation cover including diverse forbs are present in habitats occupied by the population. Non-native weeds, including cheatgrass, are abundant and pose management concerns. The Wyoming big sagebrush canopy provides adequate sage-grouse winter habitat, though the degraded understory does not provide good nesting and brood-rearing habitat.

Limited telemetry monitoring indicates some sage-grouse equipped with radio transmitters at leks in the Deadman's Bench population stayed in the area year-round. Other radio-equipped grouse moved north of Deadman's Bench into Snake John Reef and Thunder Ranch (10 to 13 miles north of U.S. Highway 40).

During recent sagebrush removal projects, wintering sage-grouse have been observed, but the origin of these individuals is unknown (BLM 2013c).

Grazing is the primary historical anthropogenic use of habitats associated with the Deadman's Bench sage-grouse population. More recently, natural gas development has occurred throughout 60 percent of the designated sage-grouse habitat area (80,000 acres). Development currently exceeds one well per section on 45 percent of the UDWR-designated sage-grouse habitat (BLM 2013c). Other disturbances include a 345kV steel-lattice transmission line through Coyote Basin, other lower voltage transmission lines, and pipeline corridors.

The UDWR-designated sage-grouse habitat associated with the Deadman's Bench population is arid with anthropogenic disturbances and degraded habitat. These factors likely decrease the resiliency of the habitat and the associated sage-grouse population. Other factors driving sage-grouse population dynamics in this population are not well understood.

The Deadman's Bench sage-grouse population is part of the larger Wyoming Basin population identified by Garton et al. (2011), who conducted population modeling that suggested the larger population is in decline. It is difficult to evaluate a population trend in the Deadman's Bench population using lek count information available from UDWR as sage-grouse habitat extends into Colorado and lek counts fluctuate to a degree suggestive of grouse movements outside the known sage-grouse habitat area (BLM 2013c).

Strawberry/Fruitland

The Strawberry/Fruitland sage-grouse population is a small population in an area with a long history of anthropogenic effects. The Strawberry/Fruitland population is estimated to range between 135 to 630 sage-grouse (34 to 158 males counted on 6 leks), based on lek counts over the last 10 years (UDWR 2012b). Habitat associated with the Strawberry/Fruitland sage-grouse population occurs in Wasatch and Duchesne counties of central Utah. The population is in the Southern Great Basin: Management Zone 3 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and Strawberry Valley sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). The population is included in the Strawberry Sage-grouse Management Area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

The habitat associated with the Strawberry/Fruitland sage-grouse population encompasses 180,000 acres in Strawberry Valley and the Fruitland area. Elevation in occupied habitat ranges between 6,500 and 10,000 feet. Strawberry Valley is a high elevation valley and the Fruitland area is located on the northwestern edge of Uinta Basin (Map 3-5). Sage-grouse habitats associated with the Strawberry/Fruitland population have been adversely affected by past anthropogenic activities including grazing, agriculture, reservoir development, recreation, and development of highways and transmission lines.

U.S. Highway 40 was a known source of sage-grouse mortality as early as 1937 (Griner 1939). Strawberry Reservoir was completed in 1922 and expanded in 1974, inundating more than 17,000 acres of sage-grouse habitat (Strawberry Valley Adaptive Resource Management Local Working Group [SVARM] 2006). Recreational activities associated with the reservoir including, fishing, boating, hiking, camping, biking, OHV use, and snowmobile use have increased in the area. Large expanses of sagebrush were removed with herbicides and smooth brome was planted to facilitate livestock grazing. Livestock grazing activities have decreased over the years and have been largely absent from sage-grouse habitat in the Strawberry area since the early 1990s.

The vegetation in upper elevation habitat occupied by the Strawberry/Fruitland sage-grouse population is composed primarily of mountain big sagebrush and grasses with patches of silver sagebrush in areas that retain more moisture. Localized areas are dominated by smooth brome and lack the sagebrush cover typically selected by sage-grouse; however, forb diversity and abundance is such that sage-grouse do occur in the area (Bunnell 2000). Lower elevation habitats in the vicinity of Fruitland are largely dominated by Wyoming big sagebrush with intact understories. Invasive plants including cheatgrass and knapweeds are present (BLM 2013c). Some sage-grouse in the Strawberry/Fruitland population are one-stage migratory moving from breeding and nesting habitats in the Fruitland area to summering habitats in the Strawberry area and then back to the Fruitland area during winter months. Other individual sage-grouse are non-migratory and stay in the Fruitland area year-round (BLM 2013c).

The Strawberry/Fruitland sage-grouse population was estimated to range between 3,000 to 4,000 sage-grouse in the 1930s (Griner 1939). The population declined throughout the twentieth century with an estimated population of 600 sage-grouse in 1970 and 150 to 200 grouse in 1999. These declines represent a 95 percent decrease in the Strawberry/Fruitland sage-grouse population over 60 years (Bunnell 2000). Loss of sage-grouse habitat in Strawberry Valley resulting from reservoir expansion, conversion of rangeland to agriculture use, sagebrush removal, road and residential construction, and observed abnormally high predation of grouse by red fox and ravens have been identified as the primary issues driving the decline of the Strawberry Valley sage-grouse population. Presence of red fox and elevated raven presence are presumed to be the result of historical changes to human land use in the habitats associated with the Strawberry/Fruitland sage-grouse population.

In an effort to augment the Strawberry/Fruitland sage-grouse population, 336 females from other populations in the state have been translocated to the Strawberry/Fruitland population since 2003. Increased lek counts and expanded habitat use have been observed since the beginning of reintroduction efforts (Baxter et al. 2013). Targeted predator control also has been conducted between 2000 and 2010 in an effort to increase sage-grouse annual survival and reproductive success (BLM 2013b).

The Strawberry/Fruitland sage-grouse population is part of the Northeast Interior Utah population identified by Garton et al. (2011). Population modeling suggests a 47 percent decline from 1970/1974 to 2000/2007 with an increasing trend from 1995 to 2007 (Garton et al. 2011). The Strawberry/Fruitland population is considered part of the Strawberry Valley sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report*, which is considered to be at risk with a stable population and a high potential for growth (FWS 2013a).

Mammals

Alternative COUT-A crosses the Snake John Reef black-footed ferret reintroduction management area south of Dinosaur National Monument near the Colorado/Utah border. This alternative route parallels an existing transmission line and follows the U.S. Highway 40 corridor in Utah before heading south toward Glen Bench area.

Known white-tailed prairie dog colonies are crossed by Alternative COUT-A in the Uinta Basin. Colonies with high population densities occur in the Snake John Reef area, south of Ashley Valley, and east of Roosevelt. Implementation of either Alternative COUT-A would likely require construction in areas identified in the BLM Vernal RMP as closed to ground-disturbing activities and construction of permanent aboveground facilities within 660 feet of prairie dog colonies. Exception, modification, and waiver criteria for these restrictions are included in the BLM Vernal RMP. The area where the BLM Vernal Field Office RMP restricts activities in white-tailed prairie dog colonies is in the Snake John Reef white-tailed prairie dog sub-complex, which is part of the larger Coyote Basin Complex.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-A in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT-A are presented in Table 3-128 and displayed on MV-10b, MV-11b, and MV-12b. Residual impact levels listed in Table 3-128 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Utah, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Snake John Reef reintroduction management area) and sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Moderate impacts would be on potential white-tailed prairie dog colonies. Low impacts would be on potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT-A in Utah is located within 1 mile of known raptor nests (Table 3-126). Additional raptor nests are likely to be located within 1 mile of Alternative COUT-A. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Despite the implementation of temporal and spatial avoidance mitigation measures, some loss of riparian vegetation could occur in potentially suitable habitat for yellow-billed cuckoos along the Green River, Lake Fork River, Duchesne River tributaries, Starvation Reservoir tributaries and yellow-billed cuckoo proposed critical habitat along the Green River and Lake Fork River. Loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the Green River, Lake Fork River, and the Duchesne River and Starvation Reservoir tributaries (if occupied) in Duchesne and Uintah counties. Primary constituent elements for yellow-billed cuckoos include riparian woodlands, adequate prey base, and dynamic riverine processes (79 FR 48547). Removal of trees to meet safe conductor clearance requirements in yellow-billed cuckoo proposed critical habitat could reduce the extent or quality of the riparian woodlands primary constituent element. Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-A in Utah, from the west side of Raven Ridge to northwest of Starvation Reservoir. Despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-129). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994) and would be likely to continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT-A in Utah would occur in areas where the alternative route parallel an existing high-voltage transmission line (345kV steel-lattice structure) that has degraded the existing quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected statewide by Alternative COUT-A is presented in Table 3-130 and the extent of habitat affected in each Utah population crossed in presented in Table 3-132.

TABLE 3-132
ALTERNATIVE ROUTE COMPARISON
SAGE-GROUSE HABITAT INVENTORY BY UTAH POPULATIONS CROSSED BY THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Sage-grouse Habitat Type (acres affected)													
	Core Areas or Priority Habitat[1]							Habitat within 4 Miles of Leks Located in Core Areas or Priority Habitat						
	Anthro Mountain	Deadman's Bench	Emma Park	Halfway Hollow	Horn Mountain	South Slope Uinta	Strawberry/Fruitland	Anthro Mountain	Deadman's Bench	Emma Park	Halfway Hollow	Horn Mountain	South Slope Uinta	Strawberry/Fruitland
COUT-A	0	176	0	225	0	158	339	0	43	0	75	0	135	279
COUT-B	0	172	371	220	0	158	0	0	42	305	73	0	0	0
COUT-C (Agency and Applicant Preferred Alternative)	82	298	50	0	0	0	0	0	56	0	0	0	0	0
COUT-H	80	290	110	0	0	0	0	0	54	85	0	0	0	0
COUT-I	78	285	137	0	112	0	0	0	53	112	0	0	0	0

NOTES:
[1]For the purpose of this analysis, greater sage-grouse occupied habitat in Utah (Utah Division of Wildlife Resources 2011d) was considered to be synonymous with priority habitat.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Zeros reported in the table do not represent absence data. The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.
Acres in the table are rounded and, therefore, columns may not sum exactly.

Alternative COUT-A crosses sage-grouse habitat used by the Strawberry/Fruitland, South Slope Uinta, Halfway Hollow, and Deadman's Bench populations within 4 miles of active leks. Areas within 4 miles of leks are presumably the most important area for maintaining individual and statewide sage-grouse populations in Utah. Habitats affected by this alternative route used by the Strawberry/Fruitland sage-grouse population are in a sage-grouse management area identified by the State of Utah to protect, maintain, improve, and enhance sage-grouse populations and habitats (State of Utah 2013a). This alternative route would occur within 4 miles of leks attended by all the male sage-grouse in the Strawberry/Fruitland population; therefore, this alternative route could result in effects on this population that may increase the need for intensive management to ensure its long-term persistence. On a statewide basis, leks within 4 miles of Alternative COUT-A have low sage-grouse attendance compared to other leks in the state; thus, the affected leks presumably have lower importance for maintaining statewide

sage-grouse populations than leks with greater attendance. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-A over the past 5 years and the percentage of the average statewide sage-grouse male lek counts that this represents are presented in Table 3-133. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-A in each affected population during the past 5 years and the percentage of the average population wide sage-grouse male lek counts that this represents is presented in Table 3-134.

TABLE 3-133
SUMMARY OF 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS WITHIN 4 MILES OF REFERENCE ROUTE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

	5-Year Average Sage-grouse Lek Counts[1]		
Alternative Route	**Statewide Sum**	**Sum within 4 miles**	**Percentage of Leks within 4 miles**
COUT-A			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*38*	*1*
COUT-B			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*103*	*3*
COUT-C (Agency and Applicant Preferred Alternative)			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*0*	*0*
COUT-H			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*68*	*2*
COUT-I			
Colorado	*3,392*	*0*	*0*
Utah	*3,427*	*50*	*1*

NOTES:
[1]Not all leks have been counted each year during the past 5 years and lek counts may have been conducted using different methodologies in different states. For leks without data for the past 5 consecutive years, an average of the number of counts available during the period was used. The counts are state specific and do not sum for each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Zeros reported in the table do not represent absence data. The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

TABLE 3-134
SUMMARY OF THE NUMBER OF LEKS AND 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS IN UTAH POPULATIONS CROSSED WITHIN 2, 4, AND 11 MILES OF REFERENCE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Sage-grouse Population Total Leks		Sage-grouse Leks within 2 Miles of the Alternative Route			Sage-grouse Leks within 4 Miles of the Alternative Route			Sage-grouse Leks within 11 Miles of the Alternative Route		
	Number of Leks	Sum of 5-Year Average Lek Counts Number of Leks	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count
South Slope Uinta Population											
COUT-A	4	0	1	0	0	2	0	0	3	0	0
COUT-B	4	0	0	0	0	0	0	0	2	0	0
COUT-C (Agency and Applicant Preferred Alternative)	4	0	0	0	0	0	0	0	0	0	0
COUT-H	4	0	0	0	0	0	0	0	0	0	0
COUT-I	4	0	0	0	0	0	0	0	0	0	0
Halfway Hollow Population											
COUT-A	8	37	0	0	0	1	0	0	3	1	0
COUT-B	8	37	0	0	0	1	0	0	3	1	0
COUT-C (Agency and Applicant Preferred Alternative)	8	37	0	0	0	1	0	0	3	0	0
COUT-H	8	37	0	0	0	1	0	0	3	0	0
COUT-I	8	37	0	0	0	0	0	0	0	0	0
Deadman's Bench Population											
COUT-A	1	2	0	0	0	1	2	100	1	2	100

TABLE 3-134
SUMMARY OF THE NUMBER OF LEKS AND 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS IN UTAH POPULATIONS CROSSED WITHIN 2, 4, AND 11 MILES OF REFERENCE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Sage-grouse Population Total Leks		Sage-grouse Leks within 2 Miles of the Alternative Route			Sage-grouse Leks within 4 Miles of the Alternative Route			Sage-grouse Leks within 11 Miles of the Alternative Route		
	Number of Leks	Sum of 5-Year Average Lek Counts Number of Leks	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count
COUT-B	1	2	0	0	0	1	2	100	1	2	100
COUT-C (Agency and Applicant Preferred Alternative)	1	2	0	0	0	1	0	0	1	2	100
COUT-H	1	2	0	0	0	0	0	0	1	2	100
COUT-I	1	2	0	0	0	0	0	0	1	2	100
Strawberry/Fruitland Population											
COUT-A	9	97	3	36	37	6	37	38	8	91	94
COUT-B	9	97	0	0	0	0	0	0	0	0	0
COUT-C (Agency and Applicant Preferred Alternative)	9	97	0	0	0	0	0	0	0	0	0
COUT-H	9	97	0	0	0	0	0	0	0	0	0
COUT-I	9	97	0	0	0	0	0	0	0	0	0
Emma Park Population											
COUT-A	14	150	0	0	0	0	0	0	0	0	0
COUT-B	14	150	6	66	44	7	101	67	14	150	100

TABLE 3-134
SUMMARY OF THE NUMBER OF LEKS AND 5-YEAR AVERAGE SAGE-GROUSE LEK COUNTS AT LEKS IN UTAH POPULATIONS CROSSED WITHIN 2, 4, AND 11 MILES OF REFERENCE CENTERLINES FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Sage-grouse Population Total Leks		Sage-grouse Leks within 2 Miles of the Alternative Route			Sage-grouse Leks within 4 Miles of the Alternative Route			Sage-grouse Leks within 11 Miles of the Alternative Route		
	Number of Leks	Sum of 5-Year Average Lek Counts Number of Leks	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count	Number of Leks	Sum of 5-Year Average Lek Counts	Percent of Population-wide 5-Year Average Lek Count
COUT-C (Agency and Applicant Preferred Alternative)	14	150	0	0	0	0	0	0	4	56	37
COUT-H	14	150	5	44	29	8	68	45	10	94	62
COUT-I	14	150	5	50	33	6	50	33	10	94	62
Anthro Mountain Population											
COUT-A	5	19	0	0	0	0	0	0	0	0	0
COUT-B	5	19	0	0	0	0	0	0	0	0	0
COUT-C (Agency and Applicant Preferred Alternative)	5	19	0	0	0	0	0	0	0	0	0
COUT-H	5	19	0	0	0	0	0	0	0	0	0
COUT-I	5	19	0	0	0	0	0	0	0	0	0
Horn Mountain Population											
COUT-I	2	9	0	0	0	0	0	0	0	0	0

NOTES:
Lek analysis incudes only leks in contiguous sage-grouse habitat crossed by each alternative route.
The table is based on the best available special status wildlife resource data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area. Zeros reported in the table do not represent absence data). The specific data sources of the inventories reported in the table are listed for each special status wildlife resource in Table 3-97.

Mammals

Black-footed ferret reintroductions are ongoing in the Snake John Reef reintroduction management area. Ferrets, suitable habitats (prairie dog towns), and available prey (prairie dogs) could be adversely affected by this alternative route. Habitats adjacent to the existing transmission line in the Snake John Reef black-footed ferret reintroduction management area have likely already incurred the adverse effects of transmission line presence. These effects could include increased predation on black-footed ferrets and small mammal prey base, including but not limited to white-tailed prairie dogs, from raptors that use the transmission line structures as hunting perches. Where Alternative COUT-A parallels an the existing transmission line, the effects of the alternative route on ferrets and ferret habitat and prey could be reduced, relative to areas where existing tower structures are absent.

White-tailed prairie dog potential colonies adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT-A on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Implementation of Alternative COUT-A likely would result in impacts on individuals in prairie dog colonies in the Snake John Reef white-tailed prairie dog sub-complex due to the high density of prairie dog occupancy in this area. Selection of Alternative COUT-A would require the BLM to grant an exception, modification, or waiver to management stipulations identified in the BLM Vernal Field Office RMP prohibiting surface disturbance or construction of permanent aboveground structures within 660 feet of prairie dog colonies in the Snake John Reef white-tailed prairie dog sub-complex. Implementation of Design Features 3, 26, 27, 28, and 30 would reduce the level of potential effects on white-tailed prairie dogs in this area.

If exceptions to CSU stipulations identified in the BLM Vernal Field Office RMP were granted, BLM would require additional mitigation measures to reduce potential effects on white-tailed prairie dogs in the Snake John Reef sub-complex. Mitigation could include micro-siting the transmission line to avoid areas of high prairie dog densities or colocating the transmission line with existing transmission lines in prairie dogs colonies to the extent practicable (Selective Mitigation Measures 2 and 7), altering transmission line structure type and installing perch deterrents to reduce raptor predation on prairie dogs (Selective Mitigation Measures 6 and 14), or other measures implemented in accordance with agency requirements. A qualitative discussion of the potential residual effects on white-tailed prairie dogs that could occur even with application of mitigation measures are described in Section 3.2.8.4.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-A would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-A would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-A would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

The affected environment (Tables 3-124 to 3-125) and environmental consequences (Table 3-128) for Alternative COUT-B in Colorado would be the same as Alternative COUT-A as they follow the same alignment.

Affected Environment (Utah)

Alternative COUT-B in Utah is in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions, which predominantly contain big sagebrush, mountain shrub, pinyon-juniper, and shrub-steppe communities (Section 3.2.5). Smaller areas of agriculture, alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also occur along this alternative route in Utah. Special status wildlife species and habitats present and likely to be affected by Alternative COUT-B are described in Environmental Setting for the COUT alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT alternative route is presented in Tables 3-124 to 3-125.

Slight differences occur in the number of miles of Mexican spotted owl, black-footed ferret, white-tailed prairie dog and yellow-billed cuckoo potential habitat between Alternative COUT-B in Utah (Table 3-124). In Utah, Alternative COUT-B crosses the greatest amount of white-tailed prairie dog and yellow-billed cuckoo potential habitat, as well as sage-grouse priority habitat and habitats within 4 miles of leks located in priority habitat. In the Emma Park area Alternative COUT-B crosses the greatest amount of white-tailed prairie dog potential habitat, as well as substantial amounts of sage-grouse priority habitat and habitats within 4 miles of leks located in priority habitats.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-B in Utah are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Alternative COUT-B crosses yellow-billed cuckoo potential habitat that occurs along intersections of the Green River, Lake Fork River, Duchesne River tributaries, and Starvation Reservoir tributaries in the U.S. Highway 40 and transmission line corridor (Table 3-124 and MV-11b). Alternative COUT-B also crosses yellow-billed cuckoo proposed critical habitat along intersections of the Green River in the vicinity of Ouray in Uintah County and the Lake Fork River west of the town of Roosevelt in Duchesne County (Table 3-124 and MV-11b). Proposed critical habitat along the Green River consists of a 38-mile-long segment of the Green River that has consistently had Western yellow-billed cuckoos during the breeding season and provides a movement corridor for Western yellow-billed cuckoos moving farther north (79 FR 48547). Proposed critical habitat along the Lake Fork River is a 9-mile-long continuous segment that has been consistently occupied by Western yellow-billed cuckoos during the breeding season and provides migratory stopover habitat for Western yellow-billed cuckoos moving farther north (79 FR 48547).Potential Mountain plover habitat occurs throughout the majority of the length of Alternative COUT-B in Utah from the Utah/Colorado border to the Starvation Reservoir area (MV-11b).

Potential Mexican spotted owl habitat is crossed by Alternative COUT-B where the alternative route parallels Highway 191 and an existing transmission line corridor in Duchesne County at Argyle Ridge near the Ashley National Forest (MV-11b).

Special Status Upland Game Birds

In Utah, Alternative COUT-B crosses sage-grouse occupied habitats supporting the Deadman's Bench, South Slope Uinta, Halfway Hollow, Anthro Mountain, and Emma Park sage-grouse populations, as well as Priority Areas for Conservation (Map 3-5). Some areas of occupied habitat include designated brood-rearing and winter habitats. Five different mapped habitat areas are crossed, and areas within 4 miles of known leks are crossed in three of the habitat areas. This alternative route parallels an existing 345kV steel lattice transmission line for approximately half of the distance where sage-grouse habitat is crossed in Utah and crosses within 4 miles of known leks in areas where it would not be parallel to an existing transmission line. The extent of sage-grouse habitats crossed by Alternative COUT-B is presented in Table 3-125 and the extent of each population crossed is present in Table 3-132. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-127, the number of leks and the average number of male sage-grouse that have been counted on those leks over the past 5 years in the populations crossed and the percentage of the average population-wide sage-grouse male lek counts that this represents are presented in Table 3-134.

Sage-grouse Population Areas Crossed by Alternative COUT-B

South Slope, Halfway Hollow, and Deadman's Bench

Refer to the descriptions of the sage-grouse habitats associated with the South Slope, Halfway Hollow, and Deadman's Bench populations under Alternative COUT-A (Map 3-5).

Anthro Mountain

Areas occupied by the Anthro Mountain sage-grouse population include a collection of small and disconnected patches of sage-grouse habitat. The population is estimated at approximately 150 sage-grouse (range 16 to 176 individuals, 4 to 44 males counted on 5 leks) based on lek counts over the last 10 years (UDWR 2012b). Designated sage-grouse habitat associated with the Anthro Mountain population occurs in the southwestern portion of the Uinta Basin in southern Duchesne County. The population is in the Southern Great Basin: Management Zone 3 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and Carbon sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). The population is not included in any sage-grouse management area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

Habitats used by the Anthro Mountain sage-grouse population have been affected by past and ongoing livestock grazing and energy development. Livestock grazing intensity in the area has declined compared to historic use. However, a number of vegetation treatments, including sagebrush removal, have been conducted in the past to facilitate forage production for livestock. Energy development is common in habitats used by the Anthro Mountain sage-grouse population and well densities exceeding one well per section occur on 28 percent of the habitat (BLM 2013b). Energy development is continuing in the area; habitats in the eastern portion of the Anthro Mountain area (Sand Wash, Big Wash, Wrinkles, and Cowboy Bench areas) are anticipated to incur 1,300 new wells in the future. Additionally, new development (400 wells) will occur on the northern portion of the UDWR-designated sage-grouse habitat occupied by the Anthro Mountain population. Both developments will increase the fragmentation and disturbance associated with human activity and access. Exploratory drilling will be conducted on the southern portion of the Anthro Mountain.

The habitats used by the Anthro Mountain sage-grouse are located on a northeast sloping plateau bounded by Argyle Ridge to the south and the Duchesne River to the north (Map 3-5). There are a total of 107,300 acres of UDWR-designated sage-grouse habitat in the Anthro Mountain area, which is naturally fragmented by a series of drainages (BLM 2013c). Upper elevation habitats (9,000 feet) used by the

population are characterized by abundant and diverse shrublands including mountain big sagebrush with intact understory vegetation. Shrub habitats are interspersed with pockets of aspen and Douglas-fir stands and pinyon-juniper vegetation types occur in deep drainages. The upper elevation habitat is small and disconnected from other sage-grouse habitat areas. Pinyon-juniper dominates the landscape at mid-elevations. Mid-elevation habitats do not represent suitable sage-grouse habitat in this area. Lower elevation areas (5,600 feet) are dominated by sagebrush and represent habitats used by the Anthro Mountain sage-grouse population. Shrubs in these lower elevation areas are predominantly Wyoming big sagebrush with some black sagebrush. Pinyon-juniper encroachment is occurring in some areas, and invasive plants including cheatgrass occur. Understory vegetation is less diverse and robust compared to higher elevation habitats.

Despite natural and anthropogenic fragmentation of habitat, telemetry data suggest sage-grouse are moving large distances to unconnected seasonal habitats including movements off the plateau. These seasonal movements include documented sage-grouse movements ranging between 14 and 33 miles to the Emma Park, West Tavaputs, Fruitland, and Blue Bench areas (BLM 2013c). While many sage-grouse movement patterns have been documented, seasonal migrations and seasonal habitat use are not well understood.

In response to observed population declines, 60 hens were translocated to the Anthro Mountain population between 2009 and 2010. Bird survival was documented to be low in 2009 and 2010 with an increase in 2010 and 2011. Overall population dynamics are still not well understood (BLM 2013c).

The Anthro Mountain sage-grouse population is part of the larger Northeast Interior Utah population identified by Garton et al. (2011), who conducted population modeling that suggests a 47 percent decline in the larger population from 1970 to 1974 and 2000 to 2007 with an increasing trend from 1995 to 2007. Population-specific lek counts for this area suggest a declining population (BLM 2013c).

Emma Park

The Emma Park population is a medium-sized sage-grouse population located on a relatively small habitat area naturally bounded by topography including mountains and steep canyons. The population is estimated to range between 400 and 1,000 sage-grouse (68 to 223 males counted on 11 leks) based on lek counts over the past 10 years (UDWR 2012d). The Emma Park UDWR-designated sage-grouse habitat occurs in Utah, Duchesne, Wasatch, and Carbon counties of central Utah (Map 3-5). Habitats supporting this sage-grouse population are in the Southern Great Basin: Management Zone 3 identified in the *Greater Sage-grouse Comprehensive Conservation Strategy* (Stiver et al. 2006) and Carbon sage-grouse management area identified in the *Greater Sage-grouse Conservation Objectives Final Report* (FWS 2013a). The population is included in the Carbon Sage-grouse Management Area identified in the *Conservation Plan for Greater Sage-grouse in Utah* (State of Utah 2013a).

The UDWR-designated habitat occupied by the Emma Park population encompasses 300,000 acres of sage-grouse habitat. All known active leks occur on a 166,000-acre sloping plateau bisected by a number of drainages. Sage-grouse that occupy this area have been observed to display non-migratory behaviors. Elevations on the plateau range from 7,000 to 8,500 feet with higher elevations in the south. Habitats on the plateau are affected by precipitation, topographic constraints, and isolated anthropogenic disturbances. The Soldier Summit area, located immediately south of U.S. Highway 6 across from the convenience store/fuel stop at Soldier Summit, is included in the Carbon Sage-Grouse Management Area; but following further review of the Conservation Plan for Greater Sage-grouse in Utah, UDWR has determined that existing development activities (i.e., a highway, a network of dirt roads, and subdivided lots) have reduced the value of these habitats for sage-grouse. On-going radio telemetry studies conducted by state biologists currently suggest that sage-grouse do not use this area at this time (Clark 2015).

The majority of habitat on the plateau is dominated by mountain big sagebrush. Black sagebrush occurs in isolated areas on shallow, rocky slopes and basin big sagebrush occurs along the major drainages (Crompton and Mitchell 2005). Upper elevations have mixed stands of aspen and Douglas-fir interspersed with mountain shrub communities. Limiting factors for sage-grouse that occupy the plateau are not well understood, but precipitation and limited habitat quantity and quality could be driving the sage-grouse population dynamics.

Coal resources occur underneath sage-grouse habitats occupied by the Emma Park sage-grouse population and the population has been directly and indirectly affected by various anthropogenic disturbances. Historic coal mines are present across much of the plateau. Past mining activities may have affected the permeability of soils, decreasing their ability to retain moisture and potentially adversely affecting habitat suitability for sage-grouse. Coalbed methane development is currently occurring in localized areas, including areas in proximity to active leks. Noise emitted by an operational coalbed methane pumpjack was documented to displace strutting male sage-grouse (Crompton and Mitchell 2005). Coalbed methane development has contributed to other anthropogenic activities, including highway and transmission line development that have fragmented and degraded the quality of habitat used by the Emma Park population. Sage-grouse mortality and eagle observations were positively correlated to proximity to these existing disturbances. Additionally, habitats occupied by the Emma Park population have historically and continue to be utilized for cattle grazing. Grazing by sheep has not occurred since the 1980s (Crompton and Mitchell 2005).

Four other discrete designated sage-grouse habitat areas were historically considered part of the Emma Park sage-grouse population. These areas are south and southwest of the larger plateau occupied by the Emma Park population. Three small, historically occupied sage-grouse habitat areas totaling 79,500 acres occur west of Scofield Reservoir. Sage-grouse presence has not been recently documented in these areas. Additionally, 53,000 acres of habitat have been designated as sage-grouse habitat by UDWR on the Gordon Creek plateau west of Price. The eastern half of the Gordon Creek area has been affected by the development of 325 natural gas wells, although use of this area is considered incidental (Reese 2015). Sage-grouse presence has not been recently confirmed in the area (BLM 2013c). These four historic sage-grouse habitat areas do not support the existing Emma Park sage-grouse population and were considered separately for the purpose of the analysis of potential effects on this population.

The Emma Park sage-grouse population is part of the Northeast Interior Utah population identified by Garton et al. (2011). Population modeling suggests a 47 percent decline from 1970 to 1974 and 2000 to 2007 with an increasing trend from 1995 to 2007 (Garton et al. 2011). The Emma Park population is considered to be at-risk, but stable, despite fluctuations in lek attendance over the past 10 years (FWS 2013a).

Mammals

Alternative COUT-B in Utah crosses the same black-footed ferret habitat as Alternative COUT-A (Table 3-124) as they follow the same alignment through the Snake John Reef Reintroduction Management Area.

Alternative COUT-B in Utah would affect similar extents of white-tailed prairie dog potential habitat as Alternative COUT-A (Table 3-124) as they follow similar alignments. Similar to Alternative COUT-A, Alternative COUT-B would likely require construction in areas in the BLM Vernal Field Office closed to ground-disturbing activities and construction of permanent aboveground facilities within 660 feet of prairie dog colonies. Exception, modification, and waiver criteria for these restrictions are included in the BLM Vernal RMP. The area where the BLM Vernal Field Office RMP restricts activities in white-tailed prairie dog colonies is in the Snake John Reef white-tailed prairie dog sub-complex, which is part of the larger Coyote Basin Complex.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-B in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT-B are presented in Table 3-128 and displayed on MV-10b, MV-11b, and MV-12b. The resources contributing to the high, moderate, and low impacts are the same for Alternative COUT-B as Alternative COUT-A; however, Alternative COUT-B also crosses potential Mexican spotted owl habitat, which contributes to the moderate impacts of this alternative route in Utah. Alternative COUT-B would have more high residual impacts compared to most other COUT alternative routes and similar moderate residual impacts compared to other COUT routes in Utah (Table 3-128).

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any active nests that could be affected by construction of the Project. Alternative COUT-B in Utah is located within 1 mile of known raptor nests (Table 3-126). Additional raptor nests are likely to be located within 1 mile of Alternative COUT-B. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Despite the implementation of temporal and spatial avoidance mitigation measures, some loss of riparian vegetation could occur in potentially suitable habitat for yellow-billed cuckoos along the Green River, Lake Fork River, Duchesne River tributaries, and Starvation Reservoir tributaries and yellow-billed cuckoo proposed critical habitat along the Green River and Lake Fork River. Loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the Green River, Lake Fork River, and the Duchesne River and Starvation Reservoir tributaries (if occupied) in Duchesne and Uintah counties. Primary constituent elements for yellow-billed cuckoos include riparian woodlands, adequate prey base, and dynamic riverine processes (79 FR 48547). Removal of trees to meet safe conductor clearance requirements in yellow-billed cuckoo proposed critical habitat could reduce the extent or quality of the riparian woodlands primary constituent element.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-B in Utah from the Utah/Colorado border to the Starvation Reservoir area; and despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-129). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994) and would be likely to continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Mexican spotted owl potential habitat is crossed by Alternative COUT-B in the Argyle Ridge area and considered fair habitat, though no formal surveys have been completed (McDonald and Emmett 2012). If Mexican spotted owls are detected during preconstruction surveys, mitigation measures, including seasonal and spatial avoidance would be implemented to reduce potential effects. However, some

vegetation structure in potential Mexican spotted owl habitat could be lost as a result of the clearing of trees for safe operation of the transmission line.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT-B in Utah would occur in areas where the alternative route parallels an existing high-voltage transmission line (345kV steel-lattice structure) that has degraded the existing quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). However, Alternative COUT-B also would affect sage-grouse habitats that have not experienced the adverse effects of anthropogenic development. The estimated area of sage-grouse habitats affected statewide by Alternative COUT-B is presented in Table 3-130 and the extent of habitat affected in each Utah population crossed in presented in Table 3-132.

Alternative COUT-B crosses sage-grouse habitat used by the Halfway Hollow, Deadman's Bench, and Emma Park populations within 4 miles of active leks. Areas within 4 miles of leks are presumably the most important areas for maintaining individual and statewide sage-grouse populations in Utah. Habitats affected by this alternative route and used by the Emma Park sage-grouse populations are in a sage-grouse management area identified by the State of Utah to protect, maintain, improve, and enhance sage-grouse populations and habitats (State of Utah 2013a). This alternative route would occur within 4 miles of leks attended by the majority of male sage-grouse in the Emma Park sage-grouse population. On a statewide basis, leks within 4 miles of Alternative COUT-B have greater attendance by sage-grouse compared to leks within 4 miles of Alternative COUT-A and presumably have higher importance for maintaining statewide sage-grouse populations than leks within 4 miles of Alternative COUT-A. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-B during the past 5 years and the percentage of the average Utah statewide sage-grouse male lek counts that this represents are presented in Table 3-133. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-B in each affected population during the past 5 years and the percentage of the average population wide sage-grouse male lek counts that this represents is presented in Table 3-134.

Mammals

The types of potential effects of Alternative COUT-B in Utah on black-footed ferret in Utah would be the same as Alternative COUT-A (Table 3-124) as the two alternative routes follow the same alignment through the Snake John Reef reintroduction management area.

The effects of Alternative COUT-B on white-tailed prairie dog potential colonies in Utah would be similar to Alternative COUT-A (Table 3-124) as the two alternative routes follow similar geographic paths through white-tailed prairie dog potential colonies.

Implementation of Alternative COUT-B likely would result in impacts on individuals in prairie dog colonies in the Snake John Reef white-tailed prairie dog sub-complex due to the high density of prairie dog occupancy in this area. Selection of Alternative COUT-B would require the BLM to grant an exception, modification, or waiver to management stipulations identified in the BLM Vernal Field Office RMP prohibiting surface disturbance or construction of permanent aboveground structures within 660 feet of prairie dog colonies in the Snake John Reef white-tailed prairie dog sub-complex. Implementation of Design Features 3, 26, 27, 28, and 30 would reduce the level of potential effects on white-tailed prairie dogs in this area.

If exceptions to CSU stipulations identified in the BLM Vernal Field Office RMP were granted, BLM would require additional mitigation measures to reduce potential effects on white-tailed prairie dogs in the Snake John Reef sub-complex. Mitigation could include micro-siting the transmission line to avoid areas of high prairie dog densities or colocating the transmission line with existing transmission lines in prairie dogs colonies to the extent practicable (Selective Mitigation Measures 2 and 7), altering transmission line structure type and installing perch deterrents to reduce raptor predation on prairie dogs (Selective Mitigation Measures 6 and 14), or other measures implemented in accordance with agency requirements. A qualitative discussion of the potential residual effects on white-tailed prairie dogs that could occur even with application of mitigation measures are described in Section 3.2.8.4.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-B would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-B would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-B would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-C in Colorado is entirely in the Colorado Plateau Ecoregion, which predominantly contains big sagebrush communities (Section 3.2.5). Smaller areas of barren/sparsely vegetated, developed/disturbed, invasive, pinyon-juniper, and shrub steppe vegetation communities are crossed by this alternative route in Colorado. Special status wildlife species and habitats present and likely to be affected by this alternative route are described in Environmental Setting for the COUT alternative routes. The extent of potential habitat for special status wildlife species crossed by Alternative COUT-C is presented in Tables 3-124 to 3-125.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-C in Colorado are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Alternative COUT-C in Colorado crosses mountain plover potential habitat just east of the Utah/Colorado border in Rio Blanco County and to the northwest of oil and gas development in the Coal Oil Basin and parallel to an existing transmission line corridor (MV-11b). Mountain plovers are not currently known to occupy potential habitat in these areas.

Special Status Upland Game Birds

In Colorado, Alternative COUT-C in Colorado crosses sage-grouse general habitats but do not cross priority habitats or habitats within 4 miles of leks (Table 3-124 and MV-12b). The alternative route parallels an existing high-voltage transmission lines and a paved highway (MV-12b). The extent of sage-grouse habitats crossed by Alternative COUT-C is presented in Table 3-125. The numbers of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-127.

Mammals

Alternative COUT-C in Colorado crosses through sagebrush, grassland, and pinyon-juniper habitats in the Wolf Creek black-footed ferret reintroduction management area. Alternative COUT-C would follow an existing transmission line and U.S. Highway 40 in the black-footed ferret reintroduction management area (Table 3-124). Reintroduced ferrets in the Wolf Creek management area were likely lost to a plague event in 2008 and 2009 (Ausmus 2012).

White-tailed prairie dog colonies are crossed by Alternative COUT-C along U.S. Highway 40 in Colorado. Alternative COUT-C parallels an existing 345kV transmission line with steel lattice towers in this area (MV-10b).

Environmental Consequences (Colorado)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-C in Colorado and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Colorado under Alternative COUT-C would be similar to other COUT alternative routes (Table 3-128; MV-10b, MV-11b, and MV-12b). The resources contributing to the different amounts of high, moderate, and low impacts are the same for Alternative COUT-C as Alternatives COUT-A and COUT-B.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT-C in Colorado is located within 1 mile of known raptor nests (Table 3-126). Additional raptor nests are likely to be located within 1 mile of Alternative COUT-C. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-C in Colorado from Massadona to the Colorado/Utah border; however, mountain plovers are not known to currently use these habitats. Despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur if plovers are present in the habitats affected (Table 3-129). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and would be likely to continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Special Status Upland Game Birds

Much of the impacts on sage-grouse associated with Alternative COUT-C in Colorado would occur in mapped general habitat and would not occur within 4 miles of known leks. Additionally, sage-grouse habitats affected by the alternative route have been affected previously by noise, human presence, and vehicle use associated with the existing transmission line. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats that would be affected by Alternative COUT-C is presented in Table 3-130.

Mammals

Black-footed ferret occurrences have not been recorded since a 2008 and 2009 plague affected the Wolf Creek ferret population, ferrets have not been located in the last 4 years, and reintroductions are not currently taking place (Ausmus 2012). However, if black-footed ferret reintroductions are resumed in the future, Alternative COUT-C could result in effects described in Section 3.2.8.4.

Potentially suitable white-tailed prairie dog potential colonies are present along the length of the alternative route from Massadona to the Colorado/Utah border and disturbance to white-tailed prairie dogs and associated habitats is likely to occur. White-tailed prairie dog potential colonies adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT-C on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Affected Environment (Utah)

Alternative COUT-C in Utah occurs in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions, which predominantly contain big sagebrush, mountain shrub, pinyon-juniper, and shrub-steppe communities (Section 3.2.5). Smaller areas of agriculture, alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also occur along this alternative route in Utah. Special status wildlife species and habitats present and likely to be affected by Alternative COUT-C are described in the Environmental Setting for the COUT alternative routes. The extent of potential habitat for special status wildlife species crossed by Alternative COUT-C is presented in Tables 3-124 to 3-125.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-C in Utah are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Alternative COUT-C crosses yellow-billed cuckoo potential habitat that occurs along intersections of the White River and its tributaries south of Glen Bench and Eightmile Flat in Uintah County through riparian areas primarily undisturbed by existing human development (MV-11b).

Mountain plover potential habitat occurs throughout the majority of the length of Alternative COUT-C in Utah from the Utah/Colorado border to the Starvation Reservoir area (MV-11b).

Mexican spotted owl potential habitat is crossed by Alternative COUT-C at intersections with the Duchesne/Carbon County border in the Argyle Ridge area south of the Bad Land Cliffs (MV-11b).

Special Status Upland Game Birds

In Utah, Alternative COUT-C crosses sage-grouse occupied habitat that support the Deadman's Bench, Anthro Mountain, and Emma Park populations (Map 3-5, MV-12b). Local residents have reported anecdotal sightings of sage-grouse in the Argyle Canyon area. UDWR has not mapped sage-grouse habitat in Argyle Canyon, and sage-grouse are not known to occur in Argyle Canyon. Argyle Canyon is primarily forested and does not support habitat typically used by sage-grouse. UDWR designated habitat for blue grouse is present in Argyle Canyon. Grouse observed by residents in Argyle Canyon are likely blue grouse and not sage-grouse.

A total of four different mapped habitat areas, Priority Areas for Conservation, and areas within 4 miles of known leks are crossed (MV-12b). This alternative route is colocated with an existing 345kV steel-lattice transmission line through the Deadman's Bench population and colocated with lower voltage transmission lines through the Emma Park population. The extent of sage-grouse habitats crossed by Alternative COUT-C is presented in Table 3-125; the extent of each population crossed is presented in Table 3-132. The number of sage-grouse leks within 2, 4, and 11 miles of the alternative route statewide are presented in Table 3-127. The number of leks and the average number of male sage-grouse that have been counted on those leks over the past 5 years in the populations crossed and the percentage of the average population-wide sage-grouse male lek counts that this represents are presented in Table 3-134.

Sage-grouse Population Areas Crossed by Alternative COUT-C

Emma Park and Anthro Mountain

Refer to the Alternative COUT-B section for descriptions of sage-grouse habitats associated with the Emma Park and Anthro Mountain sage-grouse populations.

Deadman's Bench

Refer to the Alternative COUT-A section for a description of sage-grouse habitat associated with the Deadman's Bench population.

Mammals

Alternative COUT-C in Utah crosses the Coyote Basin black-footed ferret reintroduction management area between the Colorado/Utah border and Bonanza. Alternative COUT-C parallels an existing 345kV transmission line with steel-lattice structures in this area (MV-10b).

Known white-tailed prairie dog colonies are crossed by Alternative COUT-C in Coyote Basin between the Colorado/Utah border and Bonanza. Alternative COUT-C parallels an existing 345kV transmission line with steel lattice structures in this area (MV-10b). Alternative COUT-C would likely require construction in areas in the BLM Vernal Field Office closed to ground-disturbing activities and construction of permanent aboveground facilities within 660 feet of prairie dog colonies. Exception, modification, and waiver criteria for these restrictions are included in the BLM Vernal RMP. The area where the BLM Vernal Field Office RMP restricts activities in white-tailed prairie dog colonies is in the Coyote Basin white-tailed prairie dog sub-complex, which is part of the larger Coyote Basin Complex.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-C in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT-C are presented in Table 3-128 and displayed on MV-10b, MV-11b, and MV-12b. Residual impact levels listed in Table 3-128 are based on the special status wildlife resource crossed that has the highest impact level assignment. The anticipated residual impact levels for each special status wildlife resource are presented in Table 3-104.

In Utah, high residual impacts on special status wildlife resources would be due to impacts on black-footed ferret habitat in reintroduction management areas (i.e., the Coyote Basin) and sage-grouse priority habitats and habitats within 4 miles of leks located in priority habitats. Moderate impacts would be on potential white-tailed prairie dog colonies and potential Mexican spotted owl habitat. Low impacts would be on potential mountain plover habitat.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT-C in Utah is located within 1 mile of known raptor nests (Table 3-126). Additional raptor nests are likely to be located within 1 mile of Alternative COUT-C. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Some loss of riparian vegetation along the White River and its tributaries in Uintah County that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. If yellow-billed cuckoos use riparian habitats affected by Alternative COUT-C, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the White River and its tributaries in Uintah County. Potential mountain plover habitat is relatively abundant in areas crossed by Alternative COUT-C from the Utah/Colorado border to the West Tavaputs Plateau and despite the implementation of temporal and spatial avoidance mitigation measures, some disturbance to mountain plovers and their habitats could occur (Table 3-129). Mountain plovers often breed near areas disturbed by construction and other human activities (Knopf and Miller 1994), and would be likely to continue to utilize habitats affected by the transmission line, including access roads, tower work areas, and adjacent areas once construction is complete.

Mexican spotted owls are not known to occupy the potential habitat crossed in the Argyle Ridge area south of the Bad Land Cliffs, though no formal surveys have been completed (Beagley 2012). If Mexican spotted owls are detected during preconstruction surveys, mitigation measures, including seasonal and spatial avoidance, would be implemented to reduce potential effects. However, some vegetation structure in potential Mexican spotted owl habitat could be lost as a result of the clearing of trees for safe operation of the transmission line.

Special Status Upland Game Birds

Some of the impacts on sage-grouse associated with Alternative COUT-C in Utah would occur in areas where the alternative route parallels an existing high-voltage transmission line (345kV steel-lattice structure) that has degraded the existing quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). However, Alternative COUT-C also would affect sage-grouse habitats that have not experienced the adverse effects of anthropogenic development. The estimated area of sage-grouse habitats affected statewide by Alternative COUT-C is presented in Table 3-125 and the extent of habitat affected in each Utah population crossed in presented in Table 3-132.

Alternative COUT-C crosses within 4 miles of active leks used by the Emma Park population, but the area crossed within 4 miles of active leks is not located in occupied sage-grouse habitat. The area crossed within 4 miles of active leks is north of the Emma Park population, primarily on a plateau above sage-grouse habitat. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-C during the past 5 years and the percentage of the average Utah statewide sage-grouse male lek counts that this represents are presented in Table 3-133. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-C in each affected population during the past 5 years and the percentage of the average population wide sage-grouse male lek counts that this represents is presented in Table 3-134.

Mammals

Black-footed ferret reintroductions are ongoing in the Coyote Basin reintroduction management area. Ferrets, suitable habitats (prairie dog towns), and available prey (prairie dogs) could be adversely affected by this alternative route.

Habitats adjacent to the existing 345kV steel-lattice transmission line in the Coyote Basin ferret reintroduction management area have likely already incurred the adverse effects of transmission line presence, including decreased prey base and increased predation from raptors resulting from introduction of perches onto the landscape. Where Alternative COUT-C parallels an the existing transmission line, the effects of the alternative route on ferrets and ferret habitat and prey could be reduced relative to areas where tower structures are absent, as these resources have already been affected by the existing transmission line.

White-tailed prairie dog potential colonies adjacent to existing human development and linear infrastructure are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT-C on white-tailed prairie dog potential colonies could be reduced, relative to areas where development structures are absent, in areas where the alternative route would be adjacent to the existing human development and infrastructure.

Implementation of Alternative COUT-C likely would result in impacts on individuals in prairie dog colonies in the Coyote Basin white-tailed prairie dog sub-complex due to the high density of prairie dog occupancy in this area. Selection of Alternative COUT-C would require the BLM to grant an exception, modification, or waiver to management stipulations identified in the BLM Vernal Field Office RMP prohibiting surface disturbance or construction of permanent aboveground structures within 660 feet of prairie dog colonies in the Coyote Basin white-tailed prairie dog sub-complex. Implementation of Design Features 3, 26, 27, 28, and 30 would reduce the level of potential effects on white-tailed prairie dogs in this area.

If exceptions to CSU stipulations identified in the BLM Vernal Field Office RMP were granted, BLM would require additional mitigation measures to reduce potential effects on white-tailed prairie dogs in the Coyote Basin sub-complex. Mitigation could include micro-siting the transmission line to avoid areas of high prairie dog densities or colocating the transmission line with existing transmission lines in prairie dogs colonies to the extent practicable (Selective Mitigation Measures 2 and 7), altering transmission line structure type and installing perch deterrents to reduce raptor predation on prairie dogs (Selective Mitigation Measures 6 and 14), or other measures implemented in accordance with agency requirements. A qualitative discussion of the potential residual effects on white-tailed prairie dogs that could occur even with application of mitigation measures are described in Section 3.2.8.4.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-C would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-C would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-C would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The 345kV Bears Ears to Bonanza transmission line components that would be relocated cross sage-grouse occupied habitat, sage-grouse general habitat, and white-tailed prairie dog potential colonies.

Based on the impact assessment criteria used for the EIS, impacts from relocating the transmission line components on big-game habitats would be low or high. High impacts would be due to impacts on sage-grouse occupied habitat and low impacts would be due to impacts on sage-grouse general habitat. The types of impacts associated with relocating the transmission line would be similar to the effects of construction of the 500kV transmission line. The types of potential effects that may occur are described in Section 3.2.8.4.

Alternative COUT-H

Affected Environment and Environmental Consequences (Colorado)

The affected environment (Tables 3-124 and 3-125) and environmental consequences (Table 3-128) for Alternative COUT-H in Colorado would be the same as Alternative COUT-C, as the two alternative routes follow the same geographical alignment.

Affected Environment (Utah)

Alternative COUT-H in Utah occurs in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions, which predominantly contain aspen, big sagebrush, mountain shrub, pinyon-juniper, and shrub-steppe communities (Section 3.2.5). Smaller areas of agriculture, alpine, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also occur along this alternative route in Utah. Special status wildlife

species and habitats present and likely to be affected by Alternative COUT-H are described in Environmental Setting for the COUT alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT alternative route is presented in Tables 3-124 and 3-125.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-H in Utah are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Potential yellow-billed cuckoo potential occurs along intersections of the White River and its tributaries south of Glen Bench and the Eightmile Flat area in Uintah County through riparian areas undisturbed by existing human development (MV-11b).

Mountain plover potential habitat occurs throughout the majority of the length of Alternative COUT-H in Utah from the Utah/Colorado border to the Starvation Reservoir area (MV-11b).

Mexican spotted owl potential habitat is crossed by Alternative COUT-H would be the same as Alternative COUT-C, as the two alternative routes follow the same alignment through Mexican spotted owl potential habitat in Utah (Table 3-124).

Special Status Upland Game Birds

In Utah, Alternative COUT-H crosses sage-grouse occupied habitats that support the Deadman's Bench population, and occupied habitats and Priority Areas for Conservation that support the Emma Park sage-grouse population (Map 3-5). Additionally, sage-grouse occupied habitat is crossed west of Price, in the Sanpete Valley, and near Utah State Route 264 and Slick Hills Hollow on the Manti-La Sal National Forest (MV-12b). A total of eight different mapped habitat areas is crossed, and areas within 4 miles of known leks is crossed in four of the habitat areas. This alternative route is colocated with an existing 345kV steel-lattice transmission line through the Deadman's Bench population where sage-grouse habitat is crossed in Utah, and crosses within 4 miles of known leks in areas where it would not be parallel to an existing transmission line (MV-12b). The extent of sage-grouse habitats crossed by Alternative COUT-H is presented in Table 3-125. The extent of each population crossed is presented in Table 3-131. The number of sage-grouse leks within 2, 4, and 11 miles of the alternative route statewide are presented in Table 3-127. The number of leks and the average number of male sage-grouse that have been counted on those leks over the past 5 years in the populations crossed and the percentage of the average population-wide sage-grouse male lek counts that this represents are presented in Table 3-134.

Sage-grouse Population Areas Crossed by Alternative COUT-H

Emma Park and Anthro Mountain

Refer to the Alternative COUT-B section for descriptions of sage-grouse habitats associated with the Emma Park and Anthro Mountain populations.

Deadman's Bench

Refer to the Alternative COUT-A section for a description of sage-grouse habitat associated with the Deadman's Bench population.

Mammals

Alternative COUT-H in Utah crosses the same extent of the Coyote Basin black-footed ferret reintroduction area as Alternative COUT-C in Utah (Table 3-124) as the two alternative routes follow the same alignment through the reintroduction management area.

Alternative COUT-H in Utah crosses white-tailed prairie dog potential colonies to the same extent as Alternative COUT-C (Table 3-124) as the two alternative routes follow the same alignment through white-tailed prairie dog potential colonies. Similar to Alternative COUT-C, Alternative COUT-H crosses known white-tailed prairie dog colonies in Coyote Basin between the Colorado/Utah border and Bonanza. Alternative COUT-H parallels an existing 345kV transmission line with steel lattice structures in this area (MV-10b). Alternative COUT-H would likely require construction in areas in the BLM Vernal Field Office closed to ground-disturbing activities and construction of permanent aboveground facilities within 660 feet of prairie dog colonies. Exception, modification, and waiver criteria for these restrictions are included in the BLM Vernal RMP. The area where the BLM Vernal Field Office RMP restricts activities in white-tailed prairie dog colonies is in the Coyote Basin white-tailed prairie dog sub-complex, which is part of the larger Coyote Basin Complex.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-H in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT-H are presented in Table 3-128 and displayed on MV-10b, MV-11b, and MV-12b. The resources contributing to high, moderate, and low impacts are the same for Alternative COUT-H as Alternative COUT-C.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Alternative COUT-H in Utah is located within 1 mile of known raptor nests (Table 3-126). Additional raptor nests are likely to be located within 1 mile of Alternative COUT-H. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Some loss of riparian vegetation along the White River and its tributaries in Uintah County that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. If yellow-billed cuckoos use riparian habitats affected by Alternative COUT-H, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the White River and its tributaries in Uintah County. Alternative COUT-H in Utah would result in the same effects on potential mountain plover habitat as Alternatives COUT-C and COUT-I as the three routes follow the same alignment through mountain plover potential habitat (Table 3-129).

Alternative COUT-H would result in the same effects on Mexican spotted owl potential habitat in Utah as Alternative COUT-C as the two alternative routes follow the same alignment Mexican spotted owl potential habitat (Table 3-129).

Special Status Upland Game Birds

Some of the impacts on sage-grouse associated with Alternative COUT-H in Utah would occur in areas where the alternative route parallels an existing high-voltage transmission line (345kV steel-lattice structure) that has degraded the existing quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). The estimated area of sage-grouse habitats affected statewide by Alternative COUT-H is presented in Table 3-125 and the extent of habitat affected in each Utah population crossed in presented in Table 3-132.

Alternative COUT-H crosses sage-grouse habitat used by the Deadman's Bench and Emma Park populations within 4 miles of active leks. Areas within 4 miles of leks are presumably the most important areas for maintaining individual and statewide sage-grouse populations in Utah. Habitats affected by this alternative route and used by the Emma Park sage-grouse populations are in a sage-grouse management area identified by the State of Utah to protect, maintain, improve, and enhance sage-grouse populations and habitats (State of Utah 2013a). This alternative route would occur within 4 miles of leks attended by over half of the male sage-grouse in the Emma Park population. On a statewide basis, leks within 4 miles of Alternative COUT-H have greater attendance by sage-grouse compared to leks within 4 miles of Alternative COUT-A; thus, leks affected by Alternative COUT-H would presumably have higher importance for maintaining statewide sage-grouse populations than leks within 4 miles of Alternative COUT-A.

The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-H during the past 5 years and the percentage of the average Utah statewide sage-grouse male lek counts that this represents are presented in Table 3-133. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-H in each affected population during the past 5 years and the percentage of the average population wide sage-grouse male lek counts that this represents is presented in Table 3-134.

Mammals

Alternative COUT-H in Utah would have the same effects on the Coyote Basin black-footed ferret reintroduction management area as Alternative COUT-C in Utah (Table 3-124) as the two alternative routes follow the same alignment through the reintroduction management area. White-tailed prairie dog potential colonies crossed are adjacent to existing human development and linear infrastructure and are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT-H on white-tailed prairie dog potential colonies could be reduced, relative to areas where transmission line structures are absent, in areas where the alternative route would be adjacent to the existing 345kV steel-lattice transmission line.

Implementation of Alternative COUT-H likely would result in impacts on individuals in prairie dog colonies in the Coyote Basin white-tailed prairie dog sub-complex due to the high density of prairie dog occupancy in this area. Selection of Alternative COUT-H would require the BLM to grant an exception, modification, or waiver to management stipulations identified in the BLM Vernal Field Office RMP prohibiting surface disturbance or construction of permanent aboveground structures within 660 feet of prairie dog colonies in the Coyote Basin white-tailed prairie dog sub-complex. Implementation of Design Features 3, 26, 27, 28, and 30 would reduce the level of potential effects on white-tailed prairie dogs in this area.

If exceptions to CSU stipulations identified in the BLM Vernal Field Office RMP were granted, BLM would require additional mitigation measures to reduce potential effects on white-tailed prairie dogs in the Coyote Basin sub-complex. Mitigation could include micro-siting the transmission line to avoid areas of high prairie dog densities or colocating the transmission line with existing transmission lines in prairie dogs colonies to the extent practicable (Selective Mitigation Measures 2 and 7), altering transmission line structure type and installing perch deterrents to reduce raptor predation on prairie dogs (Selective Mitigation Measures 6 and 14), or other measures implemented in accordance with agency requirements. A qualitative discussion of the potential residual effects on white-tailed prairie dogs that could occur even with application of mitigation measures are described in Section 3.2.8.4.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-H would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-H would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-H would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on special status wildlife resources from the Bears Ears to Bonanza 345kV transmission line relocation would be the same as Alternative COUT-C.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

The affected environment (Tables 3-124 and 3-125) and environmental consequences (Table 3-128) for Alternative COUT-I in Colorado would be the same as Alternative COUT-C as the two alternative routes follow the same geographical alignment.

Affected Environment (Utah)

Alternative COUT-I in Utah occurs in the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions, which predominantly contain aspen, barren/sparsely vegetated, big sagebrush, pinyon-juniper, and shrub-steppe communities (Section 3.2.5). Smaller areas of agriculture, alpine, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, water, and wetland vegetation communities also occur along this alternative route in Utah. Special status wildlife species and habitats present and likely to be affected by this alternative route are described in Environmental Setting for the COUT alternative routes. The extent of potential habitat for special status wildlife species crossed by each COUT alternative route is presented in Tables 3-124 and 3-125.

Birds

Special Status Raptors and Migratory Birds

The numbers of eagle, peregrine falcon, golden eagle, ferruginous hawk, and Swainson's hawk nests that would be located within 1 mile of Alternative COUT-I in Utah are presented in Table 3-126. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Alternative COUT-I crosses yellow-billed cuckoo potential habitat along intersections of the White River and its tributaries south of Glen Bench and Eightmile Flat in Uintah County through riparian areas undisturbed by existing human development (MV-11b and Table 3-124).

Mountain plover potential habitat occurs throughout the majority of the length of Alternative COUT-I in Utah from the Utah/Colorado border to the Uinta Basin area (MV-11b).

Mexican Spotted owl potential habitat is crossed by Alternative COUT-I at the Duchesne/Carbon County border in the Argyle Ridge area and the Coal Creek area south of the Roan Cliffs (MV-11b).

Special Status Upland Game Birds

In Utah, Alternative COUT-I crosses greater sage-grouse occupied habitat that support the Deadman's Bench, Anthro Mountain, and Horn Mountain sage-grouse populations, and occupied habitat and Priority Areas for Conservation that support the Emma Park population (MV-12b). Additionally, sage-grouse occupied habitat is crossed northeast of Joes Valley Reservoir on the Manti-La Sal National Forest. Eight different mapped habitat areas are crossed, and areas within 4 miles of known leks are crossed in four of the habitat areas. The alternative route is colocated with existing 345kV transmission lines for four areas where sage-grouse habitat is crossed in Utah and crosses within 4 miles of known leks in areas where it would not be parallel to an existing transmission line (MV-12b). The extent of sage-grouse habitats crossed by Alternative COUT-I is presented in Table 3-125. The extent of each population crossed is presented in Table 3-132. The number of sage-grouse leks within 2, 4, and 11 miles of the alternative route are presented in Table 3-127. The number of leks and the average number of male sage-grouse that have been counted on those leks over the past 5 years in the populations crossed and the percentage of the average population-wide sage-grouse male lek counts that this represents are presented in Table 3-134.

Sage-grouse Population Areas Crossed by Alternative COUT-I

Horn Mountain

Refer to the Alternative COUT BAX-B section for a description of sage-grouse habitat associated with the Horn Mountain population.

Emma Park and Anthro Mountain

Refer to the Alternative COUT-B section for descriptions of sage-grouse habitats associated with the Emma Park and Anthro Mountain populations.

Deadman's Bench

Refer to the Alternative COUT-A section for a description of sage-grouse habitats associated with the Deadman's Bench population.

Mammals

Alternative COUT-I in Utah crosses the same extent of the Coyote Basin black-footed ferret reintroduction management area as Alternative COUT-C in Utah (Table 3-124) as the two alternative routes follow the same alignment through the reintroduction management area.

Alternative COUT-I in Utah crosses white-tailed prairie dog potential colonies to the same extent as Alternative COUT-C (Table 3-124) as the two alternative routes follow the same alignment through white-tailed prairie dog potential colonies.

Similar to Alternative COUT-C, Alternative COUT-I crosses known white-tailed prairie dog colonies in Coyote Basin between the Colorado/Utah border and Bonanza. Alternative COUT-I parallels an existing 345kV transmission line with steel lattice structures in this area (MV-11b). Alternative COUT-I would likely require construction in areas in the BLM Vernal Field Office closed to ground-disturbing activities and construction of permanent aboveground facilities within 660 feet of prairie dog colonies. Exception, modification, and waiver criteria for these restrictions are included in the BLM Vernal RMP. The area where the BLM Vernal Field Office RMP restricts activities in white-tailed prairie dog colonies is in the Coyote Basin white-tailed prairie dog sub-complex, which is part of the larger Coyote Basin Complex.

Environmental Consequences (Utah)

Results of Analysis Conducted to Support Interdisciplinary Comparison of Alternative Routes

The types of potential effects on special status wildlife that could occur for Alternative COUT-I in Utah and the degree to which these effects would be mitigated or avoided are described in Section 3.2.8.4. After application of selective mitigation measures discussed in Section 3.2.8.4, the level of impacts on special status wildlife and their potential habitats in Utah under Alternative COUT-I are presented in Table 3-128 and displayed on MV-10b, MV-11b, and MV-12b. The resources contributing to the high, moderate, and low impacts are the same the same for Alternative COUT-I as Alternative COUT-C.

Results of Additional Analysis of Potential Impacts

Birds

Special Status Raptors and Migratory Birds

Raptor nest surveys would be conducted prior to construction to identify any active nests that could be affected by construction of the Project. Alternative COUT-I in Utah is located within 1 mile of known raptor nests (Table 3-126). Additional raptor nests are likely to be located within 1 mile of Alternative COUT-I. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area. The potential residual effects on nesting raptors that could occur after application of mitigation measures are described in Section 3.2.9.

Some loss of riparian vegetation along the White River and its tributaries in Uintah County that may provide suitable habitat for yellow-billed cuckoos could occur despite the implementation of temporal and spatial avoidance mitigation measures. If yellow-billed cuckoos use riparian habitats affected by Alternative COUT-I, loss of riparian vegetation could result in a decrease in habitat connectivity and a potential decrease in the number of effective yellow-billed cuckoo territories along the White River and its tributaries in Uintah County. Alternative COUT-I in Utah would result in the same effects on potential mountain plover habitat as Alternatives COUT-C and COUT-H as the three routes follow the same alignment through mountain plover potential habitat (Table 3-129).

Mexican spotted owls are not known to occupy the potential habitat crossed by this alternative route in the Argyle Ridge and Coal Creek areas south of the Roan Cliffs in Carbon County, though no formal surveys have been completed (Wright 2012). If Mexican spotted owls are detected during preconstruction surveys, mitigation measures, including seasonal and spatial avoidance, would be implemented to reduce potential effects. However, some vegetation structure in potential Mexican spotted owl habitat could be lost as a result of the clearing of trees for safe operation of the transmission line.

Special Status Upland Game Birds

Some of the impacts on sage-grouse associated with Alternative COUT-I in Utah would occur in areas where the alternative route parallels an existing high-voltage transmission line (345kV steel-lattice structure) that has degraded the existing quality of sage-grouse habitats. Locating the transmission line in previously disturbed habitats and adjacent to existing linear infrastructure would meet BLM's goals of minimizing sage-grouse habitat loss and fragmentation (BLM WO-IM 2012-043). However, Alternative COUT-I also would affect sage-grouse habitats that have not experienced the adverse effects of anthropogenic development. The estimated area of sage-grouse habitats affected statewide by Alternative COUT-I is presented in Table 3-125 and the extent of habitat affected in each Utah population crossed in presented in Table 3-132.

Alternative COUT-I crosses sage-grouse habitat within 4 miles of active leks located in priority habitats used by Deadman's Bench and Emma Park populations. Areas within 4 miles of leks are presumably the most important areas for maintaining individual and statewide sage-grouse populations in Utah. Habitats affected by this alternative route and used by the Emma Park sage-grouse populations are in a sage-grouse management area identified by the State of Utah to protect, maintain, improve, and enhance sage-grouse populations and habitats (State of Utah 2013a). This alternative route would occur within 4 miles of leks attended by approximately half of the male sage-grouse in the Emma Park population. Leks within 4 miles of Alternative COUT-I have greater attendance by sage-grouse compared to leks within 4 miles of Alternative COUT-A; thus, this alternative route would affect leks that presumably have higher importance for maintaining statewide sage-grouse populations than leks within 4 miles of Alternative COUT-A.

The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-I during the past 5 years and the percentage of the average Utah statewide sage-grouse male lek counts that this represents are presented in Table 3-133. The average number of male sage-grouse that have been counted on leks located within 4 miles of Alternative COUT-I in each affected population during the past 5 years and the percentage of the average population wide sage-grouse male lek counts that this represents is presented in Table 3-134.

Mammals

The effects of Alternative COUT-I on black-footed ferret are described in detail in Section 3.2.8.4 and would be the same as Alternative COUT-C (Table 3-124) as the two alternative routes follow the same alignment through the Coyote Basin reintroduction management area.

White-tailed prairie dog potential colonies crossed are adjacent to existing human development and linear infrastructure and are likely to have incurred previously some of the effects described in Section 3.2.8.4. The effects of Alternative COUT-I on white-tailed prairie dog potential colonies could be reduced, relative to areas where transmission line structures are absent, in areas where the alternative route would be adjacent to the existing 345kV steel lattice transmission line.

Implementation of Alternative COUT-I likely would result in impacts on individuals in prairie dog colonies in the Coyote Basin white-tailed prairie dog sub-complex due to the high density of prairie dog

occupancy in this area. Selection of Alternative COUT-I would require the BLM to grant an exception, modification, or waiver to management stipulations identified in the BLM Vernal Field Office RMP prohibiting surface disturbance or construction of permanent aboveground structures within 660 feet of prairie dog colonies in the Coyote Basin white-tailed prairie dog sub-complex. Implementation of Design Features 3, 26, 27, 28, and 30 would reduce the level of potential effects on white-tailed prairie dogs in this area.

If exceptions to CSU stipulations identified in the BLM Vernal Field Office RMP were granted, BLM would require additional mitigation measures to reduce potential effects on white-tailed prairie dogs in the Coyote Basin sub-complex. Mitigation could include micro-siting the transmission line to avoid areas of high prairie dog densities or colocating the transmission line with existing transmission lines in prairie dogs colonies to the extent practicable (Selective Mitigation Measures 2 and 7), altering transmission line structure type and installing perch deterrents to reduce raptor predation on prairie dogs (Selective Mitigation Measures 6 and 14), or other measures implemented in accordance with agency requirements. A qualitative discussion of the potential residual effects on white-tailed prairie dogs that could occur even with application of mitigation measures are described in Section 3.2.8.4.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-I would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Special Status Wildlife Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-I would be in conformance with standards, guidelines, and management objectives pertaining to special status wildlife resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-I would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forestwide population trends for all MIS species in the Project area (USFS 2015b).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on special status wildlife resources from the Bears Ears to Bonanza 345kV transmission line relocation would be the same as Alternative COUT-C.

3.2.8.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A is located on the Wyoming/Colorado state line in sagebrush, grassland, and pinyon-juniper habitat. In Wyoming, the Powder Wash series compensation station siting area contains potential mountain plover and pygmy rabbit habitats, white-tailed prairie dog colonies, and greater sage-grouse general habitat. Habitats within 4 miles of leks that are not located in core and priority sage-grouse habitat also would occur in Siting Area A.

Environmental Consequences

The estimated area of disturbance (in acres) to potential mountain plover and pygmy rabbit habitats, white-tailed prairie dog colonies, and greater sage-grouse habitats that could occur from construction of a series compensation station in Siting Area A is included in the analysis of potential disturbance that could occur from implementation of Alternative WYCO-B (Tables 3-110 and 3-111).

Construction of a series compensation station in potential mountain plover and pygmy rabbit habitats and white-tailed prairie dog colonies could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence, and construction activities associated with construction of a series compensation station in Siting Area A also could occur.

A description of potential impacts on greater sage-grouse associated with impacts on general habitat and habitats within 4 miles of leks is included in Sections 3.2.8.4.2 and 3.2.8.5. Activities related to the construction and maintenance of the Powder Wash Series Compensation Station could result in loss or alteration of sage-grouse general habitat. However, impacts on habitats within 4 miles of leks would be avoided to the extent practicable through final site selection of the series compensation station. Construction of the series compensation station in sage-grouse habitat could affect sage-grouse habitat use and behavior due to the effects of noise and human presence associated with construction and operation of the series compensation site. Additionally, fences constructed around the series compensation station could provide perching structures for avian predators and could increase predation pressure on sage-grouse using habitats adjacent to the series compensation station. The station would not be located in core or priority sage-grouse habitats and areas within 4 miles of leks would be avoided to the extent practicable. Core and priority habitats and areas within 4 miles of leks are the most important habitats for maintaining sage-grouse populations After the application of Selective Mitigation Measures 12 and 13 impacts on greater sage-grouse would be limited to localized loss and modification of sage-grouse habitat and potential changes in sage-grouse behavior and habitat use resulting from increased noise and human presence, and localized increases in avian predation pressure.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B is located where Alternative WYCO-B diverges in Nine Mile Basin in Colorado. Siting Area B is located in sagebrush, grassland, and pinyon-juniper habitat, which is located in potential mountain plover, yellow-billed cuckoo, and pygmy rabbit habitats as well as greater sage-grouse habitats. Siting Area B also contains white-tailed prairie dog colonies. Habitats within 4 miles of leks that are not located in core and priority sage-grouse habitat also would occur in Siting Area B.

Siting Area B is located in the Routt and Moffat County Uplands BHCA in Colorado, which is an important area for Columbian sharp-tailed grouse as the sagebrush, pinyon-juniper, and desert scrub vegetation communities along the Little Snake River support the largest population in Colorado.

Environmental Consequences

The estimated area of disturbance (in acres) to potential mountain plover and pygmy rabbit habitats, white-tailed prairie dog colonies, and greater sage-grouse habitats that could occur from construction of a series compensation station in Siting Area B is included in the analysis of potential disturbance that could occur from implementation of Alternative WYCO-B (Tables 3-110 and 3-111).

Construction of a series compensation station in potential mountain plover and pygmy rabbit habitats and white-tailed prairie dog colonies could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27;) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence, and construction activities associated with construction of a series compensation station in Siting Area B also could occur.

A description of potential impacts on greater sage-grouse associated with impacts on general habitat and habitats within 4 miles of leks is included in Sections 3.2.8.4.2 and 3.2.8.5. Activities related to the construction and maintenance of the Nine Mile Basin series compensation station could result in loss or alteration of sage-grouse general habitat. However, impacts on habitats within 4 miles of leks would be avoided to the extent practicable through final site selection of the series compensation station. Construction of the series compensation station in sage-grouse habitat could affect sage-grouse habitat use and behavior due to the effects of noise and human presence associated with construction and operation of the series compensation site. Additionally, fences constructed around the series compensation station could provide perching structures for avian predators and could increase predation pressure on sage-grouse using habitats adjacent to the series compensation station. The station would not be located in core or priority sage-grouse habitats and areas within 4 miles of leks would be avoided to the extent practicable. Core and priority habitats and areas within 4 miles of leks are the most important habitats for maintaining sage-grouse populations. After the application of Selective Mitigation Measures 12 and 13 impacts on greater sage-grouse would be limited to localized loss and modification of sage-grouse habitat and potential changes in sage-grouse behavior and habitat use resulting from increased noise and human presence, and localized increases in avian predation pressure.

Siting Area C – Maybell

Affected Environment

In Colorado, Siting Area C would be located where Alternative WYCO-B diverges in the Tuttle Ranch Conservation Easement area. Special status wildlife habitats in this siting area include riparian, agricultural, big sagebrush, shrub/shrub steppe, barren/sparsely vegetated, grassland, and pinyon-juniper vegetation communities. Siting Area C would be located in potential mountain plover and pygmy rabbit habitats, white-tailed prairie dog colonies, and greater sage-grouse habitats. Habitats within 4 miles of leks inside and outside core and priority sage-grouse habitat also would occur in Siting Area C.

Environmental Consequences

The estimated area of disturbance (in acres) to potential mountain plover and pygmy rabbit habitats, white-tailed prairie dog colonies, and greater sage-grouse habitats that could occur from construction of a series compensation station in Siting Area C is included in the analysis of potential disturbance that could occur from implementation of Alternative WYCO-C (Tables 3-110 and 3-111).

Construction of a series compensation station in potential mountain plover and pygmy rabbit habitats and white-tailed prairie dog colonies could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27;) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence and construction activities associated with construction of a series compensation station in Siting Area C also could occur.

A description of potential impacts on greater sage-grouse associated with impacts on general habitat and habitats within 4 miles of leks is included in Sections 3.2.8.4.2 and 3.2.8.5. Activities related to the construction and maintenance of the Maybell Series Compensation Station could result in loss or alteration of sage-grouse general habitat. However, impacts on habitats within 4 miles of leks would be avoided to the extent practicable through final site selection of the series compensation station. Construction of the series compensation station in sage-grouse habitat could affect sage-grouse habitat use and behavior due to the effects of noise and human presence associated with construction and operation of the series compensation site. Additionally, fences constructed around the series compensation station could provide perching structures for avian predators and could increase predation pressure on sage-grouse using habitats adjacent to the series compensation station. The station would not be located in core or priority sage-grouse habitats and areas within 4 miles of leks would be avoided to the extent practicable. Core and priority habitats and areas within 4 miles of leks are the most important habitats for maintaining sage-grouse populations. After the application of Selective Mitigation Measures 12 and 13 impacts on greater sage-grouse would be limited to localized loss and modification of sage-grouse habitat and potential changes in sage-grouse behavior and habitat use resulting from increased noise and human presence, and localized increases in avian predation pressure.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

In Colorado, Siting Area D would be located in wildlife habitat that includes sagebrush, shrub/shrub steppe, and pinyon-juniper vegetation communities just south of U.S. Highway 40, west of Craig. Siting Area D would be located in potential yellow-billed cuckoo habitat, white-tailed prairie dog colonies, and greater sage-grouse general habitat. Habitats within 4 miles of leks inside and outside core and priority sage-grouse habitat also would occur in Siting Area D.

Environmental Consequences

The estimated area of disturbance (in acres) to potential mountain plover and yellow-billed cuckoo habitats, white-tailed prairie dog colonies, and greater sage-grouse habitats that could occur from

construction of a series compensation station in Siting Area B is included in the analysis of potential disturbance that could occur from implementation of Alternative WYCO-B (Tables 3-110 and 3-111).

Construction of a series compensation station in potential mountain plover and yellow-billed cuckoo habitats, white-tailed prairie dog colonies, and greater sage-grouse general, core and priority habitats as well as habitats within 4 mile of leks located inside and outside core and priority habitats could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence and construction activities associated with construction of a series compensation station in Siting Area D also could occur.

A description of potential impacts on greater sage-grouse associated with impacts on general habitat and habitats within 4 miles of leks is included in Sections 3.2.8.4.2 and 3.2.8.5. Activities related to the construction and maintenance of the Bell Rock Series Compensation Station could result in loss or alteration of sage-grouse general habitat. However, impacts on habitats within 4 miles of leks would be avoided to the extent practicable through final site selection of the series compensation station. Construction of the series compensation station in sage-grouse habitat could affect sage-grouse habitat use and behavior due to the effects of noise and human presence associated with construction and operation of the series compensation site. Additionally, fences constructed around the series compensation station could provide perching structures for avian predators and could increase predation pressure on sage-grouse using habitats adjacent to the series compensation station. The station would not be located in core or priority sage-grouse habitats and areas within 4 miles of leks would be avoided to the extent practicable. Core and priority habitats and areas within 4 miles of leks are the most important habitats for maintaining sage-grouse populations. After the application of Selective Mitigation Measures 12 and 13 impacts on greater sage-grouse would be limited to localized loss and modification of sage-grouse habitat and potential changes in sage-grouse behavior and habitat use resulting from increased noise and human presence, and localized increases in avian predation pressure.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

Siting Area G would be located in an area previously disturbed by the I-70 corridor and U.S. Highway 6, approximately 5 miles west of the Green River. Wildlife habitat is predominantly barren and shrub/shrub-steppe habitat, interspersed with pinyon juniper. Siting Area G would be located in potential yellow-billed cuckoo and southwestern willow flycatcher habitats, and white-tailed prairie dog colonies.

Environmental Consequences

The estimated area of disturbance (in acres) to yellow-billed cuckoo and southwestern willow flycatcher habitats and white-tailed prairie dog colonies that could occur from construction of a series compensation station in Siting Area G is included in the analysis of potential disturbance that could occur from implementation of Alternative COUT BAX-B (Tables 3-118 and 3-119).

Construction of a series compensation station in potential yellow-billed cuckoo and southwestern willow-flycatcher habitats and white-tailed prairie dog colonies could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence and construction activities associated with construction of a series compensation station in Siting Area G also could occur.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Siting Area F would be located in an area previously disturbed by agriculture and U.S. Highway 40 in the vicinity of Roosevelt. Wildlife habitat is predominantly agricultural land, barren, sagebrush and shrub/shrub-steppe vegetation communities. Siting Area F would be located in potential mountain plover and yellow-billed cuckoo habitats, and white-tailed prairie dog colonies.

Environmental Consequences

The estimated area of disturbance (in acres) to potential mountain plover and yellow-billed cuckoo habitats and white-tailed prairie dog colonies, and greater sage-grouse habitats that could occur from construction of a series compensation station in Siting Area F is included in the analysis of potential disturbance that could occur from implementation of Alternative COUT-A (Tables 3-129 and 3-130).

Construction of a series compensation station in potential mountain plover and yellow-billed cuckoo habitats and white-tailed prairie dog colonies could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence and construction activities associated with construction of a series compensation station in Siting Area F also could occur.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B would have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Siting Area E would be located in an area previously disturbed by oil and gas development, and the Bonanza Power Plant. Wildlife habitat is predominantly sagebrush and shrub/shrub-steppe. The Bonanza Series Compensation Station Siting Area would be located in potential mountain plover, yellow-billed cuckoo, and black-footed ferret habitats as well as white-tailed prairie dog colonies. Habitats within 4 miles of leks inside core and priority sage-grouse habitat also would occur in Siting Area E.

Siting Area E is located in sagebrush habitats associated with the Deadman's Bench sage-grouse population which contains two leks (Refer to Section 3.2.8.5. under the Utah Affected Environment section of Alternative COUT-A for a detailed description of the Deadman's Bench sage-grouse population).

Environmental Consequences

The estimated area of disturbance (in acres) to potential mountain plover, yellow-billed cuckoo, and black-footed ferret habitats, white-tailed prairie dog colonies, and greater sage-grouse habitats that could occur from construction of a series compensation station in Siting Area E is included in the analysis of potential disturbance that could occur from implementation of Alternative COUT-C (Tables 3-129 and 3-130).

Construction of a series compensation station in potential mountain plover, yellow-billed cuckoo, and black-footed ferret habitats and white-tailed prairie dog colonies and greater sage-grouse core and priority habitats could result in potential direct and indirect effects identified in Section 3.2.8.4.2. After the application of relevant design features (e.g., Design Features 3, 6, 7, and 27) and selective mitigation measures (e.g., Selective Mitigation Measure 12) impacts on these special status wildlife habitat and individuals would include localized loss and modification of habitat. Potential changes in special status wildlife behavior due to individual and species-specific responses to anthropogenic disturbance as a result of increased noise, human presence and construction activities associated with construction of a series compensation station in Siting Area E also could occur.

A description of potential impacts on greater sage-grouse associated with impacts on general habitat and habitats within 4 miles of leks is included in Sections 3.2.8.4.2 and 3.2.8.5. Activities related to the construction and maintenance of the Bonanza Series Compensation Station could result in loss or alteration of sage-grouse general habitat. However, impacts on habitats within 4 miles of leks would be avoided to the extent practicable through final site selection of the series compensation station. Construction of the series compensation station in sage-grouse habitat could affect sage-grouse habitat use and behavior due to the effects of noise and human presence associated with construction and operation of the series compensation site. Additionally, fences constructed around the series compensation station could provide perching structures for avian predators and could increase predation pressure on sage-grouse using habitats adjacent to the series compensation station. The station would not be located in core or priority sage-grouse habitats and areas within 4 miles of leks would be avoided to

the extent practicable. Core and priority habitats and areas within 4 miles of leks are the most important habitats for maintaining sage-grouse populations. After the application of Selective Mitigation Measures 12 and 13 impacts on greater sage-grouse would be limited to localized loss and modification of sage-grouse habitat and potential changes in sage-grouse behavior and habitat use resulting from increased noise and human presence, and localized increases in avian predation pressure.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.9 Migratory Birds

3.2.9.1 Introduction

The MBTA of 1918 (16 U.S.C. 703-712) broadly protects more than 1,000 avian species as listed in 50 CFR 10.13 and is administered by the FWS. The MBTA lists birds by family. Any member of a family that naturally occurs in the U.S. or its territories is protected under the MBTA. While the FWS makes lists of protected bird species available for informational purposes, events such as taxonomic changes may result in changes to the number of species recognized by the FWS as protected at any given time. Unless a taxonomic change places a bird species in a family with a different status under the MBTA than the family that previously contained the species, the protected status of that species does not change. The most recent list of birds protected under the MBTA includes 1,026 species (78 FR 212:65844-65874).

The term "migratory bird" is used in this document as a regulatory term reflecting any species protected under the MBTA and addressed under other federal policies derived from the MBTA and does not directly refer to the biological definition of a migratory bird. Many species protected under the MBTA are year-round residents and do not migrate, but are addressed here. Bird species not protected under the MBTA, such as greater sage-grouse and upland game birds, are addressed in Sections 3.2.7 and 3.2.8, as appropriate. Migratory birds represent a unique and diverse resource that requires a substantially different regulatory and analytical framework from many other biological resources. Long-distance migration across state and international boundaries requires that suitable types and extents of habitat be present to support all stages of a bird's life and exposes birds to a variety of potential stressors that may be addressed or exacerbated by diverse regulatory regimes.

All bird species protected under the MBTA that may be present in the Project area are addressed collectively in this section, although species known to be declining or otherwise of conservation concern are highlighted in the discussion in keeping with current policies intended to complement the MBTA. Analysis of potential effects on special status wildlife species, including detailed species-specific information on special status birds, also is contained in Section 3.2.8 and Appendix J. Detailed analysis of potential effects on MIS, including National Forest plan consistency determinations are contained in USFS specialist reports.

3.2.9.1.1 Regulatory Framework

The MBTA outlines legislative obligations and statutes of implementation for the protection of migratory birds as required under several international treaties and conventions between the U.S., United Kingdom (on behalf of Canada), Japan, Mexico, and Russia. The MBTA was created in response to intensive market hunting, commercial harvests of many bird species for the feather trade, egg collection, and other

types of harvest. In response to these types of threats, the MBTA was crafted primarily to provide strong protections against unsustainable levels of harvest.

To protect migratory bird species, the MBTA declared it unlawful except with special license or permit to:

> "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention...for the protection of migratory birds...or any part, nest, or egg of any such bird" (16 U.S.C. 703).

As written, the law prohibits accidental take of protected birds, such as through collision with vehicles and stationary objects, during agricultural operations, or the removal of nests containing eggs or young. No permit program is in place to allow unintentional take of protected birds; however, the FWS considers good-faith efforts to avoid such take when determining whether prosecution is warranted.

The MBTA was generally effective in reducing threats to migratory bird populations caused by intentional commercial and recreational take of birds and their eggs. During the second half of the twentieth century, awareness increased of threats to migratory bird populations from unintentional sources of take such as collisions with human-constructed infrastructure (power lines, wind turbines, and buildings), oil spills, poisoning from pesticides or other industrial chemicals, and predation by free-roaming or feral domestic cats. However, the MBTA does not effectively address causes of bird population declines not associated with take of individuals or eggs of protected species. Habitat loss, climate change, and disease have been identified as causes of declines in a large number of species and have the potential to contribute to a future need to list species under the ESA.

In 2000, President Clinton issued Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, which directed federal agencies with substantial land-management responsibilities to develop MOUs with the FWS for the purposes of migratory bird conservation. These MOUs, now in place, typically establish policies whereby each agency will consider conservation actions for migratory birds and their habitat in management decisions and clearly state the responsibilities of each agency to promote the conservation of migratory bird species and their habitat. These MOUs contain commitments to consider potential impacts on migratory birds and develop appropriate mitigation during NEPA analyses.

Regional plans, data sources, and initiatives recommended for consideration during such NEPA analyses include the following:

- Partners in Flight
- North American Bird Conservation Initiative
- Intermountain West Joint Venture
- North American Waterfowl Management Plan
- North American Waterbird Conservation Plan
- North American Landbird Conservation Plan
- U.S. Shorebird Conservation Plan
- Birds of Conservation Concern
- National Audubon Society Important Bird Areas
- Bird Habitat Conservation Areas

Implementation of the Project would be consistent with statutes, regulations, plans, programs, and policies of affiliated tribes, federal agencies, and state and local governments.

Federal

- The MBTA of 1918 (16 U.S.C. 703-712) states it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; or possess any migratory bird, part, nest, egg or product, manufactured or not. The MBTA provides a framework for state-managed hunting of some species and authorizes the issuance of permits for take of other birds under limited conditions such as for falconry, research, conservation, and to prevent crop predations.
- Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, directs federal agencies to take certain actions to further implement the MBTA (16 U.S.C. 703-711). The federal agencies are directed to develop and implement an MOU with the FWS to promote conservation of migratory bird populations.
    - *BLM Memorandum of Understanding WO-230-2010-04 Between the Bureau of Land Management and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds* outlines a collaborative approach to promote the conservation of migratory bird populations and is intended to strengthen migratory bird conservation efforts by identifying and implementing strategies to promote conservation and reduce or eliminate adverse impacts on migratory birds through enhanced collaboration between the BLM and the FWS in coordination with state, tribal, and local governments.
    - *Forest Service Agreement #08-MU-1113-2400-264 Memorandum of Understanding Between the U.S. Department of Agriculture Forest Service and the U.S. Fish and Wildlife Service* to *Promote the Conservation of Migratory Birds* identifies specific activities where cooperation between these parties will contribute to the conservation of migratory birds and their habitats, and avoid or minimize adverse impacts on migratory birds.
    - *Memorandum of Understanding between the U.S. Department of Interior National Park Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds* is intended to identify and implement strategies to complement and support existing efforts to conserve migratory birds, and to facilitate new strategies and partnerships for the purpose of strengthening migratory bird conservation. The MOU identifies areas to incorporate migratory bird conservation into the planning process and identifies NPS actions that could negatively affect migratory birds so that steps to minimize those effects can be taken.
- The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) prohibits the "taking" or possession or any commerce of bald or golden eagles. The definition of "take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.
- BLM WO IM-2010-156 *Bald and Golden Eagle Protection Act – Golden Eagle National Environmental Policy Act and Avian Protection Plan Guidance for Renewable Energy* provides guidance for permitting renewable energy projects and associated transmission lines that may affect bald eagles or golden eagles. The guidance specifies considerations to be used in NEPA analysis, best management practices, and measures to avoid take of eagles.
- The ESA of 1973 (16 U.S.C. 1531-1544) as amended, provides broad protection for species of fish, wildlife, and plants listed as threatened or endangered by the FWS. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. All federal agencies, in consultation with and with the assistance of the FWS, also must use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. All federal agencies, in consultation with, and with the assistance

of, the FWS must ensure any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of an endangered, threatened, or proposed listed species or result in destruction or adverse modification of critical habitat of a species. Agencies are required to use the best scientific and commercial data available when making decisions under the ESA.

- The FLPMA of 1976 (43 U.S.C 1701-1785), as amended, consolidates and articulates BLM and USFS management responsibilities and governs most uses of federal lands, including authorization to grant or renew rights-of-way. In accordance with FLPMA, the BLM and USFS must make land-use decisions based on principles of multiple use and sustained yield. As such, a grant of right-of-way must be limited to its necessary use and must contain terms and conditions that reflect the agencies' management responsibilities under FLPMA, including minimizing impacts on fish and wildlife habitat.
- The Fish and Wildlife Act of 1956 (16 U.S.C. 742a et seq.) as amended, founded the FWS and instituted a national policy regarding the protection and management of fish and wildlife resources.
- The Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661-667) requires that fish and wildlife resources receive equal consideration with other resources with regard to water resource development programs.
- The Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911) authorizes fiscal and technical support to states intended for the development, amendment, and execution of conservation plans and practices regarding nongame fish and wildlife species.
- The Migratory Bird Conservation Act of 1934 (16 U.S.C. 715 et seq.) as amended, requires waterfowl hunters to possess a valid Migratory Bird Hunting and Conservation Stamp. Monies generated from the sale of stamps are deposited into the Migratory Bird Conservation Fund for use by the FWS in land acquisitions for the National Wildlife Refuge System.
- The Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528-531) as amended, recognizes and clarifies USFS authority and responsibility regarding the management of fish and wildlife.
- The NFMA of 1976 (16 U.S.C. 1600 et seq.), as amended, and its implementing regulations under 36 CFR 219, consolidate and articulate USFS management responsibilities for lands and resources of the National Forest System. The NFMA requires each national forest develop a management program based on multiple-use, sustained-yield principles and implement a land-management plan for each unit of the National Forest System. The implementing regulations at the time the current forest plans were approved required the identification of MIS (36 CFR 219.19). MIS were selected because their population changes were believed to indicate the effects of management activities on habitats of other species of selected major biological communities or water quality. The land-management plans established objectives for the maintenance and improvement of habitat for the MIS.
- The Public Rangeland Improvement Act of 1978 (43 U.S.C. 1901-1908) establishes national policy regarding improvement of public rangelands by providing funding for rangeland improvement, requiring coherent federal management policies, and necessitating nationwide rangeland inventories.
- The Sikes Act of 1960 (16 USC 670a-670o) as amended, requires national and regional interagency cooperation regarding fish and wildlife resources located on military jurisdictions.
- Executive Order 13112 (Invasive Species) requires that federal agencies prevent the introduction and spread of invasive species and prohibits their authorization of actions that would be likely to cause or promote the introduction or spread of invasive species.

- EPA Executive Order 11990 (Protection of Wetlands) ordered in 1977, provides additional support to NEPA, as amended (42 U.S.C. 4321 et seq.), to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.
- BLM Manual 6840 (Special Status Species Management) describes BLM's policies for addressing the management and conservation of ESA-listed and other sensitive species on BLM-administered lands.
- The BLM WO-IB 2012-097 states current BLM policy for any cutting or removal of timber, trees, or vegetative resources, including such resources located within the clearing limits of rights-of-way.
- The BLM Wyoming IM WY-2013-005 provides interim guidance for migratory bird conservation in response to Executive Order 13186 and the resulting MOU for migratory bird conservation.
- The BLM Colorado IM CO-2011-007 005 provides interim guidance for migratory bird conservation in response to Executive Order 13186 and the resulting MOU for migratory bird conservation.
- The BLM Utah IM-2005-091 provides the Utah BLM Riparian Management Policy aimed at identifying, maintaining, restoring, and/or improving riparian values to achieve a healthy and productive ecological condition for maximum long-term benefits and overall watershed protection while allowing for reasonable resource uses.
- The URMCC is authorized under the CUP Completion Act of 1992 (P.L. 102-575) to set terms and conditions for completing the CUP, which diverts, stores and delivers large quantities of water from numerous Utah rivers. The URMCC is responsible for designing, funding, and implementing projects to offset the impacts on fish, wildlife, and related recreational resources caused by CUP and other federal reclamation projects in Utah. Lands owned and managed by the URMCC for CUP mitigation commitments are located in the Project area.

State

Wyoming

- The Wyoming SWAP, 2005 and revised in 2010, is a coordinated, comprehensive conservation strategy designed to maintain the health and diversity of wildlife, including species with low and declining populations in Wyoming.
- Wyoming State Code Section 23-1-101 defines wildlife as all wild mammals, birds, fish, amphibians, reptiles, crustaceans, and mollusks, designated by the Wyoming Game and Fish Commission and the Wyoming Livestock Board in state.
- Wyoming State Code Section 23-1-103 establishes that all wildlife is the property of the state of Wyoming and directs the control, propagation, management, protection and regulation of wildlife in Wyoming.
- Wyoming State Code Section 23-3-101 prohibits the take of eagles.
- Wyoming State Code Section 23-3-103 prohibits the take of any furbearing animal or game bird without the appropriate license in Wyoming.
- Wyoming State Code Section 23-3-108 states that it is a violation to take or intentionally destroy the nest or eggs of any non-predacious bird in Wyoming.

Colorado

- The Colorado SWAP published in 2006 is a comprehensive management strategy developed by CPW (formerly known as CDOW) and the State of Colorado to conserve native species populations and habitats and prevent additional federal listings.
- Colorado Revised Statute 33-1-101 provides a framework that prohibits the taking, hunting, or possession of animals deemed property of the state or wildlife taken in violation of state, federal, or non-U.S. law (including bald and golden eagles).
- Colorado State Code Statute 33-2-101 describes the State's intent to protect wildlife in Colorado under the Nongame, Endangered, or Threatened Species Conservation Act.
- Colorado State Code Statute 33-2-104 regulates the take, possession, transportation, exportation, processing, sale or offering for sale, or shipment of nongame wildlife as may be deemed necessary to manage nongame species in Colorado.

Utah

- Utah Comprehensive Wildlife Conservation Strategy (developed from the Utah SWAP, 2005) directs the integration and implementation of ongoing and planned management actions that will conserve native species and thereby preclude the need for additional listings under the ESA. The regulatory framework for protection of fish and aquatic resources provides that state agencies (i.e., WGFD, CPW, and UDWR) manage aquatic species. The FWS would have jurisdiction over the management of ESA-listed aquatic species, and the BLM would continue to assist in managing aquatic habitats in coordination with the FWS and appropriate state wildlife agencies.
- Utah PIF Avian Conservation Strategy, Version 2.0, prioritizes avian species and their habitats and sets objectives designed to determine which species are most in need of immediate and continuing conservation effort. The other purpose of the strategy is to recommend appropriate conservation actions required to accomplish stated objectives.
- Utah State Code Section 23-14-1 directs the UDWR to protect, propagate, manage, conserve, and distribute protected wildlife throughout Utah. This statute also authorizes UDWR to identify and delineate crucial seasonal wildlife habitats.
- Utah State Code Section 23-14-18 of the Utah State Code provides for the establishment of hunting/fishing seasons, locations, and harvest limits.
- Utah State Code Section 23-14-19 establishes that the Wildlife Board shall exercise its powers by making rules and issuing proclamations and orders pursuant to this code.
- Utah State Code Section 23-15-2 establishes that all wildlife including but not limited to wildlife on public or private land or in public or private waters in the state, falls in the jurisdiction of the UDWR. Utah Code Ann. 23-15-2 and 23-13-3 (Repl. Vol. 1991).
- Utah State Code Title 23-22-1 indicates the UDWR may enter into cooperative agreements and programs with other state agencies, federal agencies, states, educational institutions, municipalities, counties, corporations, organized clubs, landowners, associations, and individuals for purposes of wildlife conservation." All parties to this Agreement recognize that they each have specific statutory responsibilities that cannot be delegated, particularly with respect to the management and conservation of wildlife, its habitat and the management, development and allocation of water resources.

3.2.9.2 Issues Identified for Analysis

Issues concerning migratory birds and their habitat were identified through coordination and in cooperation with the BLM, USFS, and FWS resource specialists; state wildlife agencies; and conservation groups and trusts. Comments received on the Draft EIS during the public comment period and ongoing coordination among cooperating agencies resulted in the BLM identifying additional issues for analysis. Issues considered for analyses in the Final EIS are presented in Table 3-135.

TABLE 3-135
MIGRATORY BIRD ISSUES IDENTIFIED FOR ANALYSIS

Issue Identified	Analysis Considerations
Birds	
Impacts on all birds protected under the Migratory Bird Treaty Act (MBTA): ▪ Potential loss of foraging and nesting habitat ▪ Potential loss of active nests during construction and maintenance activities ▪ Potential mortality due to collisions and electrocution	▪ Estimated loss and degradation of potentially suitable habitat types in the Project area ▪ Qualitative assessment of potential risk of migratory bird collision and electrocution due to the Project ▪ Qualitative and quantitative assessment of potential disturbance to foraging and nesting habitat
Impacts on bird species of concern or declining bird species protected under the MBTA: ▪ U.S. Fish and Wildlife Service Birds of Conservation Concern ▪ Listed as bird species of concern by wildlife and land-management agencies ▪ Partners in Flight priority species for Wyoming, Colorado, and Utah ▪ Other species identified as bird species of concern or declining	▪ Review of bird species of concern or declining bird species that may be present in the Project area ▪ Review of stressors identified for bird species of concern or declining bird species ▪ Analysis of the potential for the Project to contribute to existing causes of declines
Impacts on birds protected under the MBTA dependent on sensitive vegetation communities: ▪ Sagebrush-obligate birds ▪ Riparian birds ▪ Forest birds sensitive to fragmentation	▪ Estimated loss and degradation of affected sensitive vegetation communities in the Project area and potential contribution of the Project to ongoing causes of decline ▪ Qualitative and quantitative assessment of potential disturbance to foraging and nesting habitat

3.2.9.3 Regional Setting

The Project area is situated in the Platte River, Colorado River, and Great Basin drainages and encompasses parts of the Wasatch Range, the Uinta Mountains, and the Rocky Mountains. Five Level III ecoregions (EPA 2010b) surround the Project area: Wyoming Basin, Southern Rockies, Colorado Plateaus, Wasatch and Uinta Mountains, and Central Basin and Range. Climates across the ecoregions range from warm or hot summers of low humidity and precipitation to cold dry or severe winters with deep snowpack. Elevations in the Project area range from approximately 3,281 to 12,238 feet above mean sea level. The diversity of vegetation communities reflects the climate variation and large changes in elevation in the five ecoregions. Descriptions of ecoregions and general ecological conditions in the Project area are presented in Section 3.2.5.3. Migratory birds use and depend on all vegetation communities present in the Project area. Vegetation communities are described in Section 3.2.5.4.1, and birds dependent on those vegetation communities are described in Section 3.2.9.4.1.

3.2.9.4 Study Methodology

3.2.9.4.1 Inventory

For the purposes of evaluating Project-related impacts on migratory bird species, detailed information was collected in a 2-mile-wide alternative route study corridor (1 mile on either side of the reference centerline) for each alternative route. One mile is the approximate distance that some potential effects of the Project are assumed to extend outward from the transmission line, as discussed in further detail in this section. While data inventory efforts were focused on the alternative route study corridors, data at larger scales (up to intercontinental migratory flyways) also were reviewed to evaluate potential impacts of the Project on wide-ranging species that use seasonal habitats and migration routes that may cross through Wyoming, Colorado, and Utah.

Regional Migratory Bird Diversity

Protected migratory birds may use any part of the Project area throughout the entire year. The diversity of vegetation communities present is reflected in the diversity of life history traits among birds in the Project area. Some bird species are habitat specialists, while others are likely to occur across a range of vegetation communities in the Project area. The Project area is on the western edge of the Central Flyway (a migratory route connecting the Arctic Circle to Central and South America, through the western Great Plains) and the eastern edge of the Pacific Flyway (a migratory route connecting the North Slope of Alaska to Central and South America, along the Pacific coast and major rivers in the Pacific and Rocky Mountain states). Seasonal migrants are likely to use specific habitats such as riparian areas as critical rest stops and as key resources for migration survival (National Audubon Society 2014). Riparian areas also provide suitable habitats for foraging, nesting, and rearing hatchlings whose survival is dependent on the availability of aquatic plants and invertebrates to make the return migratory flight (Ryder and Manry 1994). Species composition and occurrence in any given habitat type is a function of suitable vegetation for nest success, food availability, and cover from predators (Martin 1993). Additionally, the presence and location of a small mammal and/or passerine prey base relative to suitable nesting or roosting habitat are critical factors influencing raptor occurrence in the Project area (Reynolds et al. 1992).

In addition to resident and annually occurring migratory species, a large number of migratory bird species may occasionally be recorded in states crossed by the Project, as a result of individuals wandering outside their normal range. Thus, the following total number of bird species reported for each state overstates the numbers that typically are present and may be affected by the Project. These totals also include a small number of species not protected under the MBTA, and may include species that were recorded in these states but outside the Project area.

- Wyoming: 419 species of birds recorded (Audubon Rockies 2009)
- Colorado: 498 species of birds recorded (Colorado Bird Records Committee 2015)
- Utah: 457 species of birds recorded (Utah Bird Records Committee 2015)

Bird Conservation Regions

Bird Conservation Regions (BCRs) consist of geographically unique and distinct sectors of the North American continent that are composed of comparable habitat types, ecological communities, and conservation management concerns. BCRs were initially mapped by the U.S. North American Bird Conservation Initiative and represent aggregations of Level II, III, and IV ecoregions as delineated by the Commission for Environmental Cooperation. The primary objective of BCRs is to facilitate a regional approach to bird conservation planning by providing a systematic framework that supports communication among bird conservation initiatives. The Project area is located in portions of the Northern Rockies (BCR 10), Southern Rockies-Colorado Plateau (BCR 16), and Great Basin (BCR 9)

BCRs. In part, BCRs can be used as a tool to identify at risk or declining populations of bird species that may be otherwise stable over the remainder of their range.

Migratory Bird Species of Concern

The inventory of bird species that may be present in the Project area is derived from a number of regional sources and references, including and in addition to those recommended in the applicable migratory bird MOUs. Information also was available through the same data sources discussed for Section 3.2.7, including natural heritage programs (WYNDD, CNHP, and UNHP), state agencies (WGFD, CPW, and UDWR), and resource specialists in the BLM field offices and national forests crossed by the alternative route study corridors.

The Partners in Flight program was launched in 1990 in response to growing concerns about declines in the populations of many land bird species. The central premise of PIF has been that the resources of public and private organizations in the Western Hemisphere must be combined, coordinated, and increased to achieve success in conserving bird populations in this hemisphere. Partners in Flight is a cooperative effort involving partnerships among federal, state and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private individuals. The spatial units chosen by Partners in Flight for planning purposes are referred to as a Physiographic Area (Map 3-6). There are 58 physiographic areas wholly or partially contained within the contiguous United States and several others wholly or partially in Alaska. Partners in Flight bird conservation plans in the West use state boundaries as their first sorting unit for planning, with each plan internally arranged by physiographic area or habitat type.

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the FWS to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." Birds of Conservation Concern 2008 (FWS 2008b) is the most recent effort to carry out this mandate. The overall goal of the Birds of Conservation Concern is to accurately identify the migratory and non-migratory bird species (beyond those already listed under the ESA as threatened or endangered) that represent the highest conservation priorities for FWS. Bird species considered for inclusion on lists in this report include nongame birds, gamebirds without hunting seasons, subsistence-hunted nongame birds in Alaska; and Endangered Species Act candidate, proposed endangered or threatened, and recently delisted species. Birds of Conservation Concern 2008 is organized into 37 Bird Conservation Regions (BCRs) (Map 3-6).

Lists of priority migratory bird species, potential avian habitat types, and migratory corridors in the Project area included FWS Birds of Conservation Concern; BCRs 9, 10, and 16 (FWS 2008b), and from PIF; Physiographic Areas 62, 69, 80, 86, and 87 for Wyoming (Nicholoff 2003), Colorado (Colorado Partners in Flight 2000), and Utah (Parrish et al. 2002). Table J-6, Appendix J, lists the conservation status of each migratory bird species of concern likely to occur in the Project area.

Table J-7, Appendix J, is a summary of the natural history, habitat use, seasonal use of the Project area, and identified threats to each species. Table J-7 lists vegetation associations as defined in Section 3.2.5 that each bird species uses for foraging, nesting, migration, and wintering habitat, as well as some habitat types that are outside the Project area and are used by long-distance migrants. Table J-7 provides the most recent available results from the Breeding Bird Survey (Sauer et al. 2014), noting whether species are declining in the Western Region or North America or in any single state in the Project area. The numbers reported indicate the observed trend of each population in relation to a historical reference, with higher numbers presenting stronger trends. Table J-7 also provides information on species that use only portions of the Project area seasonally or year-round. In the column labeled "Activity in Project Area" some species are noted as using the "North" or "South" portion of the Project area for certain seasonal activities. This division refers to the following:

- North includes the Wyoming Basin physiographic province
  - Includes all WYCO alternative routes north of the Maybell Series Compensation Station Siting Area C near the Yampa River
- South includes the Uinta Basin and remainder of the Colorado Plateau, Wasatch and Uinta Mountains, and Basin and Range physiographic provinces
  - Includes all WYCO alternative routes south of the Maybell Series Compensation Station Siting Area C near the Yampa River
  - Includes all COUT BAX and COUT alternative routes

Raptors

Raptors (hawks, eagles, falcons; some definitions also include vultures and owls) are addressed equally with all other bird species protected under the MBTA and do not receive additional protections by the MBTA, Executive Order 13186, or the MOUs between the FWS and federal land management agencies. However, raptors as a group have a high potential for both positive and negative interactions with electrical infrastructure. Transmission structures can provide nesting substrates and hunting perches, but the resulting increased raptor activity near transmission lines also can increase the risk of collision or electrocution. As such, additional detail and available species-specific information is provided on raptors.

Section 3.2.8 presents existing information on the presence of special status raptor species in the Project area (Tables 3-107, 3-115, and 3-125). Section 3.2.8 addresses the following species:

- Bald eagle
- Northern goshawk
- Peregrine falcon
- Golden eagle
- Ferruginous hawk
- Swainson's hawk

The following raptor species are also known to be present or may occasionally migrate or disperse through the Project area, but do not nest in the Project area:

- Red-shouldered hawk
- Broad-winged hawk
- Rough-legged hawk
- Merlin

The following raptor species are not special status species as considered by agencies with wildlife management responsibilities in the Project area, but are known to be present and may nest in the Project area:

- Northern harrier
- Osprey
- Sharp-shinned hawk
- Cooper's hawk
- Red-tailed hawk
- Prairie falcon
- American kestrel

Map 3-6

Areas Identified for Migratory Bird Conservation

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Migratory Bird Conservation Areas

Bird Habitat Conservation Area (BHCA)[1]

1 - North Platte River Reach
2 - Shamrock Hills Raptor Area
3 - Battle Creek
4 - Little Snake River
5 - Powder Rim
6 - Greater Red Desert
7 - Seedskadee National Wildlife Refuge
8 - Flaming Gorge
9 - Routt and Moffat County Uplands
10 - Yampa River in Routt County
11 - Yampa River in Moffat County
12 - Green River/Brown's Park
13 - White River and Routt National Forests/Purple Martin
14 - Danforth Hills
15 - White River
16 - Roan Plateau/Piceance Creek/ Cathedral Bluffs
17 - Big Salt Wash
18 - Grand Valley Riparian Corridor
19 - Colorado National Monument/ Rabbit Valley/Uplands
20 - Gunnison Sage-grouse Conservation Species Partnership Area
21 - Diamond Mountain
22 - Blue Mountain
23 - Red Mountain
24 - Upper Green River
25 - Green River
26 - Duchesne River
27 - Bitter Creek
28 - Willow Creek
29 - Cottonwood and Willow Creeks
30 - Cisco Desert
31 - Colorado River
32 - Green River
33 - San Rafael River Bottoms
34 - Desert Lake
35 - Summerhouse Spring
36 - Emma Park
37 - Upper Strawberry/Avintaquin
38 - Upper Fish Creek
39 - Nebo Creek
40 - Upper and Lower Hobble Creek
41 - Bridal Veil/Stewart Falls/Aspen Grove
42 - Utah Lake/Mona Lake/Tintic Valley
43 - Sevier Bridge/Chicken Creek

Important Bird Area (IBA)[1]

Project Features

Project Area Boundary
Substation (Project Terminal)
Alternative Route
Link Node
Series Compensation Station Siting Area

General Reference

City or Town
Railroad
Interstate Highway
U.S. Highway
State Highway
Other Road
Lake or Reservoir
State Boundary
County Boundary

SOURCES:
Bird Habitat Conservation Areas, Intermountain West Joint Venture 2005;
Important Bird Areas, Audubon 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013; Highways, Roads, and Railroads, ESRI 2013;
Water Features, ESRI 2008, USGS 2010; State and County Boundaries, ESRI 2013

NOTES:
[1]Only BHCAs and IBAs within the Project area boundary are labeled.
• The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
• Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

0 10 20 40 60
Miles

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In addition to hawks, eagles, and falcons, other predatory or scavenging birds may be present in the Project area and have similar interactions with electrical infrastructure. Turkey vultures and common ravens are widespread across North America, and may use nest sites on transmission structures. Turkey vultures typically use existing nests constructed by other birds, while common ravens frequently construct nests wherever possible on transmission structures. Several owl species are present in the Project area, although only the great horned owl typically uses existing nests constructed by other bird species on transmission structures. Common ravens are widespread and abundant throughout the Project area, and further detail is not presented on this species in the discussion of alternative routes. Limited data were available for turkey vultures and great horned owls, and information on these species is not presented in the discussion of alternative routes.

Most species mentioned in this discussion will at least occasionally nest on transmission structures. However, some species only nest in tree cavities and similar features (American kestrel, small owls), in trees (Cooper's hawk, sharp-shinned hawk), on rock ledges in caves or on cliffs (barn owl and other owl species), or in low vegetation or on the ground (northern harrier, short-eared owl).

Bird Communities and Vegetation

The analysis of potential effects on migratory bird habitat is supported by information included in Section 3.2.5. Bird species of concern identified as potentially occurring in the Project area were reviewed for their preferred habitat during the nesting season, migration, and winter, as well as year-round habitat used by resident species. Classification of habitat in the Project area is based on vegetation communities obtained from the GAP dataset (USGS 2010b), which incorporates the Northwest Regional Gap Analysis Project and the SWReGAP (USGS 2010c). The Project's potential impacts on those habitat types are discussed in terms of how migratory birds could be affected. Habitat types not present in the Project area, but used by migratory birds elsewhere in their range, also are noted but would not be affected by the Project.

This section provides summary information on birds often associated with vegetation communities as described in Section 3.2.5.4.1. This section also notes important threats or stressors on birds in these communities, including effects on vegetation that indirectly affect birds, and focuses where appropriate on declining bird species listed in Table J-7.

Agriculture

Agriculture land cover types are areas used for the production of annual and perennial crops for human consumption, livestock grazing, or the production of seed or hay crops. Generally, they are found in valley bottoms near rural and suburban areas. Many bird species forage in farmland and orchards, although the frequent and intensive disturbance often prevents species from nesting in agricultural areas. However, the burrowing owl regularly lives in the soft soils present around the margins of farm fields or in the banks of irrigation ditches. Grains remaining after harvest can be an important food source for wintering geese, cranes, and other seed-eating birds. Invertebrates and rodents associated with agriculture also provide food sources for many bird species, including raptors.

Alpine

Alpine land cover types are found in mountain ranges at the highest elevations above the tree line and are exposed to wind erosion and long-term or permanent cover of snow and ice. Extreme climatic conditions result in short growing seasons and limit vegetation growth to dwarf or mat-forming forbs, graminoids, lichens, and shrubs. Many areas are barren with a high cover of rock and scree. Migratory birds that may inhabit alpine vegetation communities in the Project area include peregrine falcon, American pipit, black

rosy-finch, and brown-capped rosy-finch. Peregrine falcons may use alpine communities as migration stop-over sites. The American pipit migrates from an Alaska and northern Canada breeding range south to a southern U.S. and Central America wintering range; some populations breed in alpine vegetation in Wyoming and Colorado. Black rosy-finches breed and forage in alpine communities, and in good weather conditions may winter as well. The brown-capped rosy-finch breeds in alpine communities, and engages in local elevational migrations to subalpine shrublands in winter.

Due to the remote location of this habitat, most anthropogenic activities are unlikely to directly affect these species; however, habitat degradation does occur. Alpine communities are identified as being particularly sensitive to climate change, and slow to recover from disturbance (Trivedi et al 2008). As climatic conditions change and temperatures increase, montane forests move up in altitude, encroaching on alpine communities (Kupfer and Cairns 1996, Martin 2001). Changing climate conditions also reduce snow cover each year, further degrading habitat quality. In addition, feral animal and non-native plant invasions are increasing (Lindenmayer et al. 2014). Shrinking alpine habitats not only affects seasonally resident species, but also the migratory corridor, extending the distances between each alpine stop-over site (Martin 2001).

Aspen

Aspen land cover types occur in montane areas dominated by quaking aspen. The distribution of this land-cover type is limited by soil moisture and growing season length. Clay-rich, moist soils on mountain slopes are required for growth. A diverse group of shrubs, herbs, and grasses grow in the understory. This vegetative community originates and is maintained by stand-replacing disturbances such as avalanches, crown fire, insect outbreak, windthrow, and vegetation management practices. Migratory bird species that may inhabit aspen in the Project area include veery and lazuli bunting. Veerys migrate yearly from their wintering habitat in southern Brazil to their breeding habitat in northern U.S. and southern Canada. Lazuli buntings migrate from the Pacific Northwest south to their wintering habitat in Mexico and Central America yearly.

Threats to aspen vegetation communities include excessive ungulate herbivory, fire suppression, and conifer invasion. Excessive ungulate herbivory suppresses new growth and seedling growth (Kashian et al 2007). An indirect effect of increased ungulate presence is cowbird occurrence (Goguen and Mathews 2000). Cowbirds parasitize nests of passerine birds, which reduce nest and fledgling success. Aspen communities originate, and are maintained by stand-replacing disturbances, such as fires, that stimulate regeneration and expansion. Decreased fire intervals have allowed for conifer invasions (Kashian et al 2007). Exacerbating these issues are the severe droughts occurring in the western U.S. (Michaelian et al 2011).

Barren/Sparsely Vegetated

Barren/sparsely vegetated land cover types include areas of very low vegetation cover and a high cover of bare soil, rock outcrop, exposed bedrock, or sand. All are subject to erosion, low precipitation, saline or sodic soils, or shifting substrates that create a barrier to vegetation establishment. The little vegetation that does exist inhabits crevices, rock cracks and pockets in exposed rocks. Migratory bird species that may inhabit barren/sparsely vegetative communities in the study corridor include golden eagle, peregrine falcon, prairie falcon, and white-throated swifts. These bird species build nests on high-cliff rock outcrops, in crevices, or in tall man-made structures, and, excluding the golden eagle, will rarely inhabit a location without such areas. Foraging habitat for each species differs from nesting habitat. Golden eagles hunt in open landscapes of shrub/shrub steppe, big sagebrush, montane shrubland, grasslands, pinyon-juniper, and ponderosa pine. Peregrine falcons forage in open landscapes of various vegetation communities. Prairie falcons hunt on or near the ground in grasslands and shrub steppe vegetation communities. White-throated swifts forage in open areas and nest on cliff faces and in canyons.

Habitat degradation and disturbance are the primary threats to species inhabiting this vegetation community. Destruction of cliffs by mining and other activities removes nesting habitat from an already limited number of available sites. Disturbance, such as near heavy equipment usage or in high-use recreational areas, can reduce nesting success for some species (Brambilla et al. 2004, Hockin et al. 1992). Other threats for the above species pertain primarily to foraging habitats.

Big Sagebrush

Big sagebrush land cover types occur in well-drained, non-alkaline soils at middle elevations in valleys and foothills throughout the study corridor. Dominant species are basin big sagebrush (*Artemisia tridentata tridentata)*, Wyoming big sagebrush (*A. t. wyomingensis*), and/or mountain big sagebrush (*A. t. vaseyana*). Common species interspersed with sagebrush include antelope bitterbrush (*Purshia tridentata*), mountain snowberry (*Symphoricarpos oreophuilus*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and rubber rabbitbrush (*Ericameria nauseosa*). Native bunchgrasses occur in patches as well, when not displaced by cheatgrass (*Bromus tectorum*). At higher elevations, big sagebrush shrublands host an abundance of wildflowers and occur in a matrix with montane and subalpine woodlands. Sagebrush sparrow, sage thrasher, Brewer's sparrow, golden eagle, gray flycatcher, and pinyon jay all may occur in big sagebrush in the Project area.

The greatest threat to big sagebrush inhabitants is habitat degradation and loss. Approximately 50 to 60 percent of native-sagebrush shrubland possesses an exotic annual grass understory, or has been completely converted to annual grassland by anthropogenic means (Knick et al. 2003). Conversion of sagebrush occurs primarily for livestock forage, agriculture, or energy and urban development. Escalated cowbird parasitism is an indirect effect of increased livestock presence (Goguen and Mathews 2000). Exotic weeds, such as cheatgrass, have altered the fire regimes over large areas and continue to spread (Davies et al. 2011, Knick et al 2003). At higher elevations, fire suppression encourages conifer encroachment; at lower elevations, exotic weed invasion increased fire frequency, allowing for annual grass domination (Davies et al. 2011).

Developed/Disturbed

This land cover type is modified for human use (e.g., housing, parks, and commercial/industrial developments) or through human activities (e.g., chaining, burning, or logging of vegetation; quarrying or mining landscapes). Migratory bird species that may utilize developed/disturbed areas in the Project area include loggerhead shrike, American wigeon, black-chinned hummingbird, Brewer's blackbird, common grackle, common nighthawk, Macgillivray's warbler, peregrine falcon, Lewis's woodpecker, and western bluebird.

Loggerhead shrikes are commonly found in developed areas such as parks, lawns, and golf courses. American wigeons and other waterfowl of concern may forage on manicured lawns and golf courses adjacent to wintering or nesting habitats. Black-chinned hummingbirds forage for nectar and insects in parks and gardens. Brewer's blackbirds nest in developed/disturbed areas that are primarily open with a few brushy shrubs and trees. Common grackles are well adapted to developed/disturbed locations, preferring open areas with scattered trees and, although declining, are one of the most abundant urban birds of North America. Common nighthawks migrate between breeding habitat in North America and wintering habitat in South America yearly. They nest in recently burned or cleared forests and in grasslands, preferring open areas with low-growing vegetation. Macgillivray's warblers breed in northwestern North America in clear-cut and post-burn coniferous forest and riparian woodlands, and migrate to South America to winter. Peregrine falcons appear to prefer nesting on cliffs and rock outcrops but have been known to nest in tall man-made structures where they hunt urban pigeons and doves. Lewis's woodpeckers require areas with an open canopy, a brushy understory, dead or downed woody material, and abundant insects; post-burn ponderosa pine forests fit these requirements most frequently,

although riparian woodlands also may be used. Western bluebirds breed in disturbed patches of forests ranging from pinyon-juniper to ponderosa pine and riparian woodlands.

Developed areas are not at risk, although species inhabiting them may be. Collisions with man-made structures such as buildings, power lines, and fences, as well as vehicles, threaten both migratory and resident birds in urban environments (APLIC 2012, Gelb and Delacretaz 2006). Developed areas use pesticides that negatively affect birds by removing food sources, which in turn affects productivity and survival (Boatman et al. 2004). Non-native species invasion, such as the European starling, of developed areas also affects migratory birds by increasing nest-site competition. Disturbance at nest sites by human activities or feral animals is inherent to developed areas; this may cause nest and/or chick abandonment, decreased ability to feed young, and increased predation (Chace and Walsh 2006). Disturbed communities, such as post-burn woodlands, are threatened due to fire suppression, intensive grazing (removes the recovering native understory), and timber harvest to remove snags (Naficy et al. 2010, Keane et al. 2002).

Grassland

Grasslands are found on a variety of landforms, often in semi-arid precipitation zones that cannot support trees. Livestock grazing and fire activity, in addition to precipitation, generally influence the distribution and vegetative composition of grasslands. Migratory bird species that may utilize grassland communities in the Project area include Baird's sparrow, bobolink, brown-capped rosy-finch, burrowing owl, calliope hummingbird, chestnut-collared longspur, common nighthawk, common poorwill, dickcissel, ferruginous hawk, golden eagle, grasshopper sparrow, horned lark, long-billed curlew, marbled godwit, McCown's longspur, mountain plover, northern harrier, prairie falcon, peregrine falcon, rufous hummingbird, short-eared owl, Swainson's hawk, upland sandpiper, and western kingbird.

Bird species that migrate from their winter habitats in the southern U.S. and Mexico, or are year-round residents, and utilize grasslands in the Project area as nesting sites include Baird's sparrow, chestnut-collared longspur, common poorwill, ferruginous hawk, burrowing owl, grasshopper sparrow, horned lark, long-billed curlew, McCown's longspur, mountain plover, northern harrier, short-eared owl, and western kingbird. Birds that migrate from South America to utilize North American grasslands as their nesting habitats are bobolink, common nighthawk, dickcissel, Swainson's hawk, and upland sandpiper.

Non-breeding populations of migratory birds also are present. Peregrine and prairie falcons, and golden eagles utilize grasslands for foraging habitat. Brown-capped rosy-finches will winter in high meadows in unfavorable alpine weather. Calliope and rufous hummingbirds, as well as marbled godwits, forage and migrate through grasslands.

Habitat degradation, fragmentation, and loss are the greatest threats to grassland inhabitants. Grasslands rely on periodic disturbance for maintenance; historically, grazing by native ungulates and prairie fires were the responsible agents. Presently, the removal of native ungulates, fire suppression, and conversion to agricultural fields have eliminated natural disturbance. As a result, grassland birds have experienced the most consistent population decline amongst avian guilds (Vickery et al. 2000).

Invasive

Invasive land cover types are dominated by non-native grass and forb species and are dispersed throughout the study corridor. Native vegetation is often present in the community, although to a lesser extent than non-natives. Most wildlife species do not preferentially occur in invasive plant communities, but the snow bunting will forage in invasive communities.

Montane Forest

Montane forest land cover types exist in a wide range of aspects and moisture regimes, but all are dominated by one or more coniferous tree species such as Douglas-fir (*Pseudotsuga menzisii)*, ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*), Engelmann spruce (*Picea engelmannii*) or subalpine fir (*Abies lasiocarpa*). Migratory bird species that may utilize montane forest communities in the Project area include American three-toed woodpecker, band-tailed pigeon, black-throated gray warbler, boreal owl, broad-tailed hummingbird, calliope hummingbird, Cassin's finch, cordilleran flycatcher, evening grosbeak, flammulated owl, Hammond's flycatcher, merlin, northern goshawk, northern pygmy-owl, olive-sided flycatcher, pine siskin, purple martin, pygmy nuthatch, red-naped sapsucker, rufous hummingbird, violet-green swallow, and Williamson's sapsucker.

Migratory bird species that migrate in North America and use montane forest land cover types in the Project area include Williamson's sapsucker, band-tailed pigeon, black-throated gray warbler, broad-tailed hummingbird, calliope hummingbird, Cassin's finch, cordilleran flycatcher, flammulated owl, Hammond's flycatcher, merlin, red-naped sapsucker, rufous hummingbird, and violet-green swallow. Both sapsucker species consume sap from large trees, primarily conifers, and small arthropods. The three hummingbird species primarily feed on nectar from flowering plants but will capture insects while in flight. Black-throated gray warblers, cordilleran flycatchers, Hammond's flycatchers, flammulated owls, and violet-green swallows are primarily insectivorous while on their breeding grounds. Band-tailed pigeons and Cassin's finches are herbivores, foraging for seeds, fruits, and berries. Merlins are predacious and capture small to medium-sized birds while in flight.

Year-round resident bird species of North America that may use montane forest land cover types in the Project area include American three-toed woodpecker, boreal owl, evening grosbeak, Mexican spotted-owl, northern goshawk, northern pygmy-owl, pine siskin, and pygmy nuthatch. The American three-toed woodpecker and evening grosbeak forage on snags, which can be uncommon in some forests. Bird species that migrate from South America to North America and nest in montane forest communities include the olive sided flycatcher and purple martin.

Primary threats to montane forest vegetation communities are timber harvest and nearly a century of fire suppression. Timber harvest clear-cuts have fragmented montane forests and reduced overall quantity (Halpern and Spies 1995). Fire maintains diversity in forest ecosystems and reduces fuel load and, therefore, reduces the frequency and extent of catastrophic fires (Webster and Halpern 2010). In addition, the absence of natural disturbances and historical stand-clearing practices and monocultural replanting homogenized many forests, decreasing old growth areas and species diversity (Nacify et al. 2010, Schulte et al. 2007).

Mountain Shrub

Mountain shrub land cover types occur on rocky outcrops, steep slopes, and toeslopes with shallow, rocky soils and are dominated by woody shrub species such as mahogany (*Cercocarpus* spp.), bitterbrush, oak (*Quercus* spp.), sumac (*Rhus* spp.), and choke cherry (*Prunus virginiana*). Migratory birds that may utilize mountain shrub communities in the Project area include Bewick's wren, black-chinned hummingbird, and calliope hummingbird. The two hummingbird species use mountain shrub communities for foraging habitat. Bewick's wrens are predominately year-round residents in mountain shrub communities and utilize the shrubs for nesting.

Mountain shrub communities occur in patches between forested areas and are naturally maintained by disturbance. Therefore, they are threatened by fire suppression and certain forestry practices (Humple and Burnett 2010). Suppressing fire expands forest boundaries, and encourages homogenous stands of trees

halting the establishment of shrub communities. Forestry practices that maintain a full canopy throughout also reduce shrub establishment (Humple and Burnett 2010).

Pinyon-Juniper

Pinyon-juniper communities are dominated by two-needle pinyon (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*), although other pines and junipers do occur. Understory shrub species vary by region, but include sagebrush, mahogany, oak, and bitterbrush. Migratory bird species of concern that may utilize pinyon-juniper woodlands in the Project area include ash-throated flycatcher, band-tailed pigeon, bushtit, golden eagle, gray flycatcher, gray vireo, juniper titmouse, pinyon jay, Scott's oriole, song sparrow, Virginia's warbler, western bluebird, and western scrub-jay.

Ash-throated flycatchers, band-tailed pigeons, gray flycatchers, gray vireos, Scott's orioles, song sparrows, and Virginia's warblers migrate in North America for nesting and wintering habitats. Bushtits, juniper titmice, pinyon jays, and western scrub jays are year-round residents. Two species that use pinyon-juniper communities for foraging habitat only are the golden eagle and western bluebird, although golden eagles may nest on cliffs surrounded by pinyon-juniper woodlands.

Pinyon-juniper vegetation communities exist in a greater extent now than in the past. Range expansion resulted from heavy livestock grazing that removed understory vegetation and the associated reduction in fire frequency (Tausch and Hood 2007). As an attempt to restore past conditions, managers treat pinyon-juniper communities by chaining, burning, and spraying herbicides, practices that may threaten species living in them (Tausch and Hood 2007).

Ponderosa Pine

Ponderosa pine communities occur on dunes, rocky ridges, or broken rock where conditions prevent a typical forest or woodland from developing. Ponderosa pine dominates the landscape, although Douglas-fir, two-needle pinyon, and juniper are often present. Migratory bird species that may utilize ponderosa pine communities in the Project area include American three-toed woodpecker, band-tailed pigeon, flammulated owl, golden eagle, northern goshawk, northern pygmy-owl, pygmy nuthatch, red-naped sapsucker, and western bluebird.

Band-tailed pigeons, flammulated owls, and red-naped sapsuckers migrate in North America for their wintering habitat and ponderosa pine nesting habitat. The three species may use montane forest as a nesting habitat as well.

American three-toed woodpeckers, golden eagles, northern goshawks, northern pygmy-owls, and pygmy nuthatches are residents year-round in ponderosa pine communities. Western bluebirds may forage in ponderosa pine communities, but often nest in edge habitats and disturbed areas.

Similar to montane forest communities, ponderosa pine communities suffer from certain timber harvest practices, fire suppression, absence of natural disturbance, and drought (Nacify et al. 2010, Noss et al. 2006b). The combination of these stressors leaves ponderosa pine susceptible to catastrophic fires and insect outbreaks.

Riparian

Riparian communities are almost always adjacent to flowing water such as streams and rivers. Common trees include cottonwood (*Populus* spp.), alder (*Alnus* spp.), birch (*Betula* spp.), willows (*Salix* spp.), and conifers. Shrub understory species include silver sagebrush (*Artemisia cana*), rose (*Rosa* spp.), and redosier dogwood (*Cornus sericea*). Riparian communities are essential habitats that have a high

productivity and species diversity, and are used by many wildlife species. Migratory bird species that may utilize riparian communities in the Project area include American dipper, ash-throated flycatcher, bald eagle, Bewick's wren, black-chinned hummingbird, broad-tailed hummingbird, bushtit, gray flycatcher, Harris's sparrow, lazuli bunting, Lewis's woodpecker, Lincoln's sparrow, Macgillivray's warbler, rusty blackbird, song sparrow, veery, warbling vireo, western bluebird, western scrub-jay, willow flycatcher, Wilson's warbler, and yellow-billed cuckoo.

Although extremely important, riparian communities occupy less than 2 percent of the total land area in western North America. Threats to riparian communities include, but are not limited to, water diversion, grazing, urban development, pollution, invasive species, climate change, recreation, and fire (Poff et al. 2011, Stromberg 1993). The dominant threats are overgrazing, water diversion, climate change, and invasive species (Poff et al. 2011, Stromberg 1993).

Shrub/Shrub Steppe

Shrub/shrub steppe communities occur in drier sites with shallow rocky soils such as alluvial fans or hillslopes. Dominant shrub species include Mormon tea (*Ephedra viridis*), spiny hopsage (*Grayia spinosa*), sagebrush, saltbush (*Atriplex* spp.), greasewood, and horsebrush (*Tetradymia* spp.). Migratory bird species that may utilize shrub/shrub steppe communities in the Project area include ash-throated flycatcher, black-chinned hummingbird, Brewer's sparrow, bushtit, common poorwill, ferruginous hawk, golden eagle, green-tailed towhee, prairie falcon, song sparrow, western kingbird, and western scrub-jay.

Shrub/shrub steppe communities are threatened by overgrazing, conversion to agriculture, altered fire regimes, and invasive species (Wooten 2003). Intensive livestock grazing not only removes vegetation from the landscape, but also allows for invasive species, such as cheatgrass, to colonize the area and destroys soil crusts that maintain the community. Cheatgrass, and other invasive plants, dominate landscapes by outcompeting native grasses and shrubs. Fire plays an important role in preventing tree invasion in the community, and fire suppression can allow invasion of trees such as junipers. The greatest contribution to habitat loss in this community is conversion to agriculture (Wooten 2003).

Water

The water land cover type is composed of open water with less than 25 percent vegetation cover including streams, rivers, ponds, and lakes. Migratory bird species that may utilize water communities in the Project area include American avocet, American white pelican, American wigeon, arctic tern, bald eagle, bank swallow, Barrow's goldeneye, black-crowned night-heron, black-headed gull, Bonaparte's gull, California gull, canvasback, Caspian tern, Clark's grebe, common goldeneye, common loon, eared grebe, Franklin's gull, herring gull, horned grebe, lesser scaup, mallard, piping plover, ruddy turnstone, semipalmated sandpiper, snowy egret, solitary sandpiper, Thayer's gull, whimbrel, white-winged scoter, yellow-crowned night-heron.

Water habitats are threatened by altered hydrologic regimes, pollution, and increasing anthropogenic demand on supplies (Richter et al. 1997). Altered hydrologic regimes change the physical structure of streams, rivers, and lakes by moving sediment, in some cases making areas inhabitable. Pollutants include nutrients from agriculture runoff and toxins such as heavy metals (Brown and Froemke 2012). Demand on water supplies increases every year as populations grow. Additionally, non-native invasive species negatively affect native flora and fauna.

Wetland

Wetland land cover types are diverse, but all are inundated or saturated during a significant portion of the growing season and support hydrophytic vegetation and/or soil conditions. Many migratory bird species

use wetland habitats at one point or another in their life cycle. Migratory bird species that may utilize wetland communities in the Project are include American avocet, American bittern, American wigeon, arctic tern, black tern, black-crowned night-heron, black-headed gull, black-necked stilt, Bonaparte's gull, buff-breasted sandpiper, California gull, canvasback, Caspian tern, cinnamon teal, Clark's grebe, common goldeneye, dunlin, eared grebe, Forster's tern, Franklin's gull, greater sandhill crane, Hudsonian godwit, lesser scaup, lesser yellowlegs, long-billed curlew, mallard, marbled godwit, northern harrier, northern pintail, pectoral sandpiper, piping plover, redhead, ruddy turnstone, rusty blackbird, short-billed dowitcher, snowy egret, snowy plover, solitary sandpiper, Virginia rail, whimbrel, white-faced ibis, willet, Wilson's phalarope, and yellow-crowned night-heron.

Habitat loss and degradation is the most significant threat to wetland community inhabitants. Approximately one-half of wetland communities in the continental U.S. have been converted for anthropogenic uses, primarily agriculture (Brinson and Malvarez 2002). Portions of the remaining wetlands suffer from pollution by toxic metals and pesticides (Brinson and Malvarez 2002). Water diversion also contributes to loss by drying up some wetlands (Brinson and Malvarez 2002).

Migratory Bird Conservation Areas

This section describes areas identified as important to the conservation of migratory birds by various agencies and organizations. Many of these areas are non-regulatory in nature, are held under various types of land ownership, and may not currently be managed specifically for the conservation of migratory birds. Some of these areas may be recognized by more than one agency or organization and can have similar geographic boundaries. The following designations are discussed in this section:

- Important Bird Areas
- Bird Habitat Conservation Areas
- National Wildlife Refuges
- Areas of Critical Environmental Concern
- Wildlife Habitat Management Areas

Important Bird Areas

The Important Bird Areas (IBA) Program is a cooperative endeavor that characterizes and conserves regions that comprise habitat resources that are particularly crucial to birds. The IBA Program is a global initiative of BirdLife International and implemented in the U.S. by the National Audubon Society, including its state and local chapters. Potential IBAs are petitioned and then evaluated for their regional, continental, and global importance to bird conservation before becoming designated. IBAs are of variable acreages and may include any land jurisdictions. They are typically distinct locations that possess unique habitat values based on meeting certain criteria that are integral to supporting vulnerable populations. IBAs support species of conservation concern, range-restricted species, species that are assembled in one common habitat type, or flocking species that are vulnerable because they occur at high densities in converged locations.

Bird Habitat Conservation Areas

Bird Habitat Conservation Areas (BHCA) are conceptual and generally non-regulatory areas identified by joint ventures as priorities for bird conservation. However, some BHCAs overlap partially or entirely with protected areas such as NWRs. The 18 joint ventures in the U.S. are collaborative, regional partnerships of government agencies, non-profit organizations, corporations, tribes, and individuals. The entire Project area is in the area addressed by the Intermountain West Joint Venture (IWJV). The IWJV State Conservation Partnerships prepared conservation plans for each entire state or part of a state in the region

addressed by the IWJV. These plans identify BHCAs, as well as priority bird species that depend on resources available in the BHCAs.

National Wildlife Refuges

The FWS administers the NWR system, a nationwide network of protected public lands for the purpose of wildlife management. Many NWRs were initially created to support large concentrations of waterfowl, and hunting is a compatible use in many NWRs. These NWRs are often actively managed to enhance waterfowl or game bird productivity through wetland management or growth of grain crops that can provide winter food sources. Many other NWR units are created specifically to protect rare, geographically limited resources such as isolated wetlands supporting rare species.

Areas of Critical Environmental Concern

ACECs are a BLM special designation, typically to protect an area that supports unique biological or cultural resource values. All ACECs in the Project area are discussed in Section 3.2.15, but those that are designated in part for migratory bird habitat are described in this section.

Wildlife Habitat Management Areas

Wildlife habitat management areas (WHMA) are designated state-owned areas for the purpose of wildlife management. These areas are often managed to enhance waterfowl and gamebird populations, as well as to protect and conserve other wildlife species and their habitat. Hunting and non-consumptive activities (birdwatching, wildlife photography) are often encouraged in WHMAs.

Migratory Bird Conservation Areas in the Project Area

Shirley Basin (IBA)

Shirley Basin, a recognized global-priority IBA, is located in Natrona and Carbon counties, Wyoming and contains 237,448 acres of contiguous sagebrush habitat. Limited lowland-riparian and agricultural (irrigated haymeadows) vegetative communities occur in patches in the sagebrush habitat. Common plant species include Wyoming big sagebrush (*Artemisia tridentate wyomingensis*), western wheatgrass (*Pascopyrum smithii*), Idaho fescue (*Festuca idahoensis*), muttongrass (*Poa fendleriana*), needle-and-thread (*Hesperostipa* spp.), Sandberg bluegrass (*Poa secunda*), junegrass (*Koeleria* spp.), buckwheats (*Eriogonum* spp.), and many annual forbs. The majority of Shirley Basin is administered by the BLM; smaller portions are owned by the state of Wyoming and private landowners. Cattle and sheep grazing occur throughout much of the area. Shirley Basin provides essential habitat for the greater sage-grouse (not protected under the MBTA). This area also supports other sagebrush-obligate species such as sage thrasher, Brewer's sparrow, vesper sparrow, green-tailed towhee, white-crowned sparrow, and savannah sparrow. The Brewer's blackbird, although not a sagebrush obligate, utilizes the area as well.

Shamrock Hills Raptor Concentration Area (IBA and BHCA)

Shamrock Hills Raptor Concentration Area (SHRCA) encompasses approximately 36,000 acres of BLM administered land and is located 8 miles west of Rawlins in Carbon County, Wyoming. This IBA has global priority and a recognized status. Sagebrush-grasslands dominate the landscape, although grasslands, riparian meadows, and shrub/shrub steppe (greasewood and saltbush flats) also are present. SHRCA is one of the largest breeding grounds for the ferruginous hawk in western North America (National Audubon Society 2013). Other Neotropical migrant passerine species that inhabit the area include lark buntings, sage sparrows, sage thrashers, Say's phoebes, and mountain bluebirds. Neotropical migrant raptors that occur in the boundaries include golden eagle, burrowing owl, northern harrier, prairie

falcon, American kestrel, great horned owl, and red-tailed hawk. Mountain plovers also may inhabit the area.

Muddy Creek Wetlands (IBA)

Approximately 5,000 acres of riparian and shrub/shrub steppe (desert scrub) habitat occur in the Muddy Creek Wetlands boundaries, located 25 miles north of Baggs in Carbon County, Wyoming. Muddy Creek Wetlands is a recognized state-priority IBA, predominately administered by the BLM, although the IBA also includes state and private lands. Riparian habitat includes 6 miles of a willow-dominated corridor, marshes, and meadows. Adjacent upland shrub/shrub steppe sites are dominated by sagebrush (*Artemesia* spp.), greasewood (*Sarcobatus* spp.), and Gardner's saltbush (*Atriplex gardneri*). Tens of thousands of birds, of more than 110 species, utilize Muddy Creek Wetlands. Bird species of concern known to occur in the area include white-faced ibis, snowy egrets, sage thrashers, burrowing owls, and willow flycatchers.

Powder Rim (IBA and BHCA)

Powder Rim, a recognized state-priority IBA and BHCA, contains 82,990 acres of locally rare juniper woodlands located in Sweetwater County, Wyoming. This area is important due to the limited amount of juniper woodlands present in the state. Sagebrush shrubland occurs in patches throughout the juniper woodlands. Bird species known to inhabit Powder Rim include ash-throated flycatcher, gray flycatcher, dusky flycatcher, western scrub jay, juniper titmouse, Bewick's wren, plumbeous vireo, and black-throated gray warbler. Sixty-seven other bird species have been recorded in the area, and the suite of birds present is uncommon in Wyoming (Fitton and Scott 1984). Powder Rim is affected by diverse types of land use and management practices, ranging from livestock grazing and oil and gas production to wild horse use and recreational activities.

Red Rim-Daley (WHMA)

Located approximately 10 miles west of Rawlins, Wyoming, Red Rim-Daley WHMA was established to provide crucial winter habitat for wildlife. Saltbrush, sagebrush, and greasewood dominate the shrubland landscape. Many birds utilize the area, although species of note are ferruginous hawk, kestrel, prairie falcon, owls, and golden eagles.

Red Desert (IBA and BHCA)

Red Desert encompasses 4,500,153 acres located in Fremont and Sweetwater counties, Wyoming. Recognized as a global-priority IBA, and primarily administered by the BLM, Red Desert is the largest unfenced region in the continental U.S. The primary vegetative communities are sagebrush grasslands and shrub/shrub steppe. "Sky islands" (mountains isolated by surrounding lowlands of a dramatically different environment) with springs and seeps, stands of limber pine and aspen, and seasonal wetlands interrupt the landscape. These combined habitats provide important breeding, foraging, nesting, wintering, and migratory stop-over habitat for numerous bird species, especially sagebrush obligates such as greater sage-grouse (not protected under the MBTA), sage thrasher, sage sparrow, and Brewer's sparrow. Additional bird species that utilize the area include American kestrel, bald eagle, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, loggerhead shrike, long-billed curlew, long-eared owl, northern goshawk, northern harrier, peregrine falcon, prairie falcon, red-tailed hawk, sharp-shinned hawk, sharp-tailed grouse, short-eared owl, Swainson's hawk, trumpeter swan, and white-faced ibis.

Grand Valley Riparian Corridor and Highline State Park (IBA and BHCA)

Grand Valley Riparian Corridor, a recognized state-priority IBA and BHCA, contains approximately 3,852 acres located in Mesa County, Colorado. Parcels in the IBA include Colorado state parks, state wildlife areas, City of Grand Junction property, habitat acquisitions, educational facilities, and a Grand Valley Audubon Society property. Colorado's best remaining cottonwood forest is in the boundaries of the IBA and BHCA and provides nesting, wintering, and resting habitat. Approximately 75 percent, nearly 300, of the state's bird species have been observed in the area. Bird species known to occur in the area are bald eagle, bank swallow, belted kingfisher, black-billed magpie, black-headed grosbeak, Canada goose, cliff swallow, great blue heron, mallard, northern flicker, northern harrier, ring-necked duck, spotted sandpiper, white-crowned sparrow, and wood duck. Threats to the Grand Valley Riparian Corridor include invasive and non-native plants, development, introduced animal species, human disturbance and pollution.

Pelican Lake (IBA)

Pelican Lake, a recognized state-priority IBA, is a complex of wetlands, including Pelican Lake, located in the Uinta Basin in Uintah County, Utah. The USBR and BLM administer greater than half of the land, the remaining portions are privately owned. High numbers of waterbirds use Pelican Lake for wintering habitat, including the American coot and American white pelican. The bald eagle also inhabits the area throughout the winter.

Ouray National Wildlife Refuge (NWR, IBA, and BHCA)

Ouray NWR, BHCA and recognized state-priority IBA, was established in 1960 and consists of 11,987 acres of wetland, lowland riparian, grassland, and shrub/shrub steppe vegetation communities. The upland shrub steppe and grassland communities are separated from the lowlands by bluffs of sandstone and shale. Ouray is the most intact, significant single strand of riparian cottonwood on the entire Colorado River drainage, exemplifying its importance. Seventy bird species of concern utilize the area, including American avocet, American white pelican, bald eagle, black-necked stilt, black-throated gray warbler, Brewer's sparrow, broad-tailed hummingbird, double-crested cormorant, ferruginous hawk, Forster's tern, Lewis's woodpecker, osprey, peregrine falcon, sage sparrow, willow flycatchers, and yellow-billed cuckoo.

Upper Strawberry Watershed (IBA and BHCA)

Upper Strawberry Watershed is a recognized global-priority IBA, overlapped by the slightly larger Upper Strawberry-Avintaquin BHCA. Both are located in Wasatch County, Utah, with the Avintaquin Canyon portion of the BHCA extending into Duchesne County. Ownership of the land belongs to both the state of Utah and federal government. The IBA encompasses 125,883 acres of shrub steppe, montane shrub, deciduous forest, wetlands, aspen, and subalpine coniferous forest. These vegetation communities provide habitat for more than 120 species of birds, including American white pelicans, three-toed woodpeckers, bald eagles, Brewer's sparrows, broad-tailed hummingbirds, western grebes, sandhill cranes, and Clark's grebes.

North Platte River Reach (BHCA)

North Platte River Reach BHCA is located in southern Wyoming and encompasses riparian, wetland, shrubland, and sagebrush vegetation communities. Bird species inhabiting the area include, but are not limited to, sagebrush obligates, bald eagle, black-crowned heron, and western grebe.

Little Snake River (BHCA)

Little Snake River BHCA is located along the Wyoming/Colorado border. Wetland and riparian vegetative communities occupying the area provide habitat for more than 150 bird species including sagebrush-obligate species.

Routt and Moffat County Uplands (BHCA)

Routt and Moffat County Uplands BHCA is located in northwest Colorado. Vegetative communities present in the BHCA include sage shrublands, pinyon-juniper, and desertscrub. Bird species of concern known to inhabit the area are sagebrush obligates, greater sage-grouse, and Columbian sharp-tailed grouse (although neither grouse species is protected under the MBTA). Extensive oil and gas development threatens the BHCA.

Yampa River in Moffat County (BHCA)

Yampa River BHCA, located in northwest Colorado, contains important wetland, riparian, and open water vegetation communities utilized by waterfowl, shorebirds, and other bird species. Upland vegetative communities are composed of montane spruce fir forest, ponderosa pine, aspen, pinyon-juniper woodlands, sagebrush shrublands, and mixed grasslands. Birds known to occur in the area include sagebrush obligates and greater scaup.

White River (BHCA and ACEC)

White River BHCA, similar to Yampa River BHCA, is composed of important wetland, riparian, and open water habitat utilized by waterfowl, shorebirds, and other migratory bird species. The BLM manages this area as an ACEC, in part, for bald eagle usage. Upland habitats adjacent to the river include montane spruce fir forest, ponderosa pine, aspen, pinyon-juniper woodlands, sagebrush shrublands, and mixed grasslands.

Roan Plateau/Piceance Creek/South Park/Cathedral Bluffs (BHCA)

This BHCA consists of important sagebrush shrublands and pinyon-juniper vegetative communities utilized by bird species in Colorado. Peregrine falcons and greater sage-grouse are known to inhabit the area, although the sage-grouse is not protected by the MBTA. Extensive oil and gas development threaten the BHCA.

Colorado National Monument/Rabbit Valley/Uplands (IBA and BHCA)

The Colorado National Monument/Rabbit Valley/Uplands are located west of Grand Junction, Colorado. Vegetative communities present in the area include pinyon-juniper woodlands and sagebrush shrublands; lowland riparian occupies a small portion. Amongst the bird species known to occur in the area are bald eagle, black-throated sparrow, Brewer's sparrow, Cassin's kingbird, gray flycatcher, gray vireo, lark sparrow, northern mockingbird, pinyon jay, rock wren, and Scott's oriole. A serious threat to the IBA and BHCA is the potential for stand-replacing wildfires.

Upper Green River and Pariette Wetlands (BHCA and ACEC)

Upper Green River BHCA includes the Pariette Wetlands, Ouray NWR (discussed above), Pelican Lake IBA (discussed above), and Stewart Lake Waterfowl Management Area. This BHCA contains the largest contiguous area of lowland riparian habitat in Utah. The boundaries of the BHCA constitute a major migratory bird migration corridor and waterbird and waterfowl breeding location. The result is an area with high species diversity. Pariette Wetlands (also an ACEC) are a marsh complex surrounded by arid

desert that house more than 130 bird species alone, of which 55 are bird species of concern. Additionally, Stewart Lake supports several species of shorebirds and waterbirds. Yellow-billed cuckoo, American white pelican, Lewis's woodpecker, MacGillivray's warbler, bald eagle, golden eagle, white faced ibis, greater sandhill crane, and mountain plover are among the bird species of concern that occur in the area. Threats to the Upper Green River and Pariette Wetlands include oil and gas development, agricultural practices, selenium contamination, and invasive plants.

Duchesne River (BHCA)

Duchesne River BHCA is located in Duchesne and Uintah counties, Utah and connects to the Green River BHCA. Priority vegetative communities in the BHCA include lowland riparian, wet meadow, wetlands, as well as scattered upland shrub/shrub steppe. Numerous bird species utilize the area in various seasons throughout the year. Birds known to occur in the Duchesne River BHCA are yellow-billed cuckoo, bobolink, and American white pelican. Agricultural practices, primarily grazing, threaten the riparian and wetland habitat.

Lower Green River (BHCA and ACEC)

The Green River BHCA begins south of the Ouray NWR in Utah and continues confluence with the Colorado River. Lowland riparian, the priority vegetation community in the BHCA, provides important winter and migration stop-over habitat for birds. This species-rich area hosts many waterfowl species listed in the North American Waterfowl Management Plan and by the IWJV. Among the bird species present are Virginia and Lucy's warbler, yellow-breasted chat, blue grosbeak, yellow-billed cuckoo, bald eagle, peregrine falcon, Cooper's hawk, whooping crane, Swainson's hawk, western snowy plover, long-billed curlew, white-faced ibis, and Mexican spotted owl. Threats to the Lower Green River, and species inhabiting the area, include water quality and diversion, invasion of exotic plant species, fire, and overgrazing.

Utah Lake/Mona Lake/Tintic Valley; Goshen Bay; Provo Bay (BHCA and IBA)

The Utah Lake/Mona Lake/Tintic Valley BHCA overlaps with the much smaller Goshen and Provo Bay IBAs. The BHCA is crossed by a small portion of the Project (the 345kV ancillary transmission line components), although neither IBA is crossed by any portion of the Project. Vegetation associations in the boundaries of the BHCA include open water, mudflats, marshlands, grasslands, and shrub steppe. Numerous waterfowl, waterbirds, and shorebirds nest in BHCA, and other migratory birds utilize the area as a migration stop-over site. Birds known to inhabit the area include American tree sparrow, Brewer's sparrow, cinnamon teal, gadwall, northern pintail, Caspian tern, northern shoveler, Canada goose, long-billed curlew, peregrine falcon, ferruginous hawk, American avocet, American white pelican, Wilson's phalarope, and black-necked stilt. Agricultural activities (cropland and grazing), recreational use, and water use threaten the BHCA.

Lower Nebo Creek Drainage (BHCA)

Lower Nebo Creek Drainage is located in Utah County, Utah, west of U.S. Highway 89 and encompasses a large expanse of riparian habitat essential for Neotropical migratory birds, Lewis's woodpeckers, and raptors (e.g., Cooper's hawk). Water use and right-of-way litigation issues, as well as extensive livestock grazing, threaten the area.

Summerhouse Spring (BHCA)

Located in Carbon County, Utah, Summerhouse Spring BHCA provides important wetland and associated upland habitats for bird species. Greater sage-grouse (not protected under the MBTA) and Wilson's snipe inhabit the area, as well as many other aquatic species and shorebirds.

Emma Park (BHCA)

Emma Park, located north of Helper, Utah, contains important wet meadow habitats for migrating birds. Wilson's snipe and curlew are known inhabitants of the area. Threats to Emma Park include overgrazing and erosion.

Cisco Desert (BHCA)

Cisco Desert BHCA contains important shrub/shrub steppe (desert scrub) habitat that supports golden eagles, ferruginous hawks, burrowing owls, and other shrub steppe bird species. Threats to the Cisco Desert include oil and gas development, soil loss, and grazing.

3.2.9.4.2 Impact Assessment and Mitigation Planning

As described in Section 3.2.9.1.1, federal cooperating agencies are required to analyze the potential effects of the Project on migratory birds during the NEPA process, and to consider the conservation of migratory bird habitat when making management decisions. In this regard, The impact assessment and mitigation planning process for the Project is intended to address this requirement for the BLM and federal cooperating agencies.

Analysis methods were developed in response to comments received on the Draft EIS, particularly comments that relate to the ongoing exploration of ways in which the BLM, USFS, and FWS can meet their respective requirements under the migratory bird MOUs during the NEPA process. The Draft EIS addressed potential impacts on migratory birds in the greater context of potential impacts on wildlife and special status wildlife, while providing resource-specific information where appropriate. The Final EIS addresses migratory birds independently of other biological resources, but references information available in Sections 3.2.5 and 3.2.7 as needed.

The methodology used to assess potential impacts on migratory birds for the purpose of interdisciplinary comparison of alternative routes differs from that used to assess potential impacts on other biological resources such as wildlife. That is, the analysis does not attempt to quantify initial impacts (before the application of selective mitigation measures) and estimate residual impacts (after the application of selective mitigation measures) because migratory birds are a resource that is distributed throughout the entire Project area in all seasons. Many of the potential effects of the Project would occur year-round, although the intensity of those effects may be greater in certain locations and seasons.

The methods used in this analysis included (1) identifying the types of potential effects on migratory birds that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities; (2) identifying appropriate selective mitigation measures (Table 2-13) for qualitatively minimizing some potential adverse effects and determining specific areas where selective mitigation measures should be applied; and (3) disclosing the level of predicted impacts on migratory bird habitat (i.e., impacts related to ground disturbance and vegetation management). Design features of the Proposed Action for environmental protection (Table 2-8) were considered when assessing impacts on all resources. Additional discussion of the methods used in analyzing effects of the Project on migratory birds to support interdisciplinary comparison of alternative routes are discussed in the Effects Analysis section.

Types of Potential Effects

Potential effects on migratory birds associated with construction and operation of transmission lines were reviewed in existing primary literature. The analysis focuses on collision mortality risk, the loss of active nests and sensitive habitat features, and disturbance associated with human presence and heavy equipment use, but also discusses other potential effects that can result in mortality or any form of prohibited take of migratory birds. Because many of the potential hazards to migratory birds are dependent on site-specific conditions, season, weather, and time of day, no quantified analysis of potential mortality, nest loss, or other types of take is presented. These potential effects are discussed qualitatively, and certain high-sensitivity areas are highlighted in the discussion of individual alternative routes.

Direct Effects

Direct effects on migratory birds considered in this analysis include any effects that may result in mortality, injury, disturbance, and loss of nests, or otherwise can affect individual birds. Direct effects on migratory bird habitats also are addressed in this section.

Mortality of migratory birds may occur through crushing of active nests, eggs, or nestlings by equipment used during Project construction and during operation of the Project through vegetation management including selective tree removal. Direct impacts on migratory birds would be reduced by avoiding vegetation clearing and construction and maintenance activities during the migratory bird nesting season when feasible and by conducting migratory bird and nest surveys prior to any vegetation-disturbing activities that are unavoidable during the breeding season (Design Features 6 and 7).

Mortality also may occur due to collision with vehicles on Project access roads or from increased use of highways by Project personnel during construction. Risk of mortality from vehicle collisions can increase where roads are located close to bird concentration areas, such as wetlands (Erickson et al. 2005), at lower elevations, or in open areas (Kociolek et al. 2011). Vehicle collision with birds is uncommon at vehicle speeds below 25 miles per hour but can still occur, particularly when visibility is low and birds are resting or feeding on the roadway (Erritzoe et al. 2003). Collision risk may be a function of life history characteristics. Birds at greater risk from vehicle collisions include passerines and waterfowl (Erickson et al. 2005); ground-nesters, corvids, raptors, and frugivores that may be attracted to roads and adjacent areas for foraging, hunting, or nesting (Jacobson 2005). Risk also may increase according to seasonal movement patterns such as during migration (Kociolek et al. 2011). The speed of vehicles can affect the number of wildlife collisions on roads, with lower speeds effectively reducing collision rate by increasing the reaction time of both driver and wildlife (Jaarsma et al 2006). Reducing vehicle speed on access roads to 15 miles per hour would help reduce bird mortality risk from vehicle collisions (Design Feature 39).

The risk of mortality and injury to birds from in-flight collisions with Project components such as guy wires, conductors, and structures is likely to vary with species (Faanes 1987). The risk of collision with transmission lines has been linked to bird morphology (body size, weight, wing shape), age, and behavior (flocking, nesting, courtship, foraging, flight ability, and altitude) (APLIC 2006, 2012; Janss 2000). The risk of collision also increases according to the number of times birds cross transmission lines, or in species with low flight maneuverability, and in locations where power lines cross bird landing or take-off paths (Janss 2000). The configuration of conductors and ground wires also affects the level of risk, which appears to increase with the number of tiers of wires that require birds to make vertical adjustments (APLIC 2012). Research shows avian collisions with transmission lines can be significantly reduced, but not eliminated, by applying flight diverters at locations where collision risk is elevated (Savereno et al. 1996). Collision risk is typically highest where concentrated bird activity occurs (e.g., near wetlands, agricultural fields, and daily or seasonal flyways) or where transmission lines are sited on elevated terrain such as ridgelines (APLIC 2012).

Alternative structure types proposed for the Project include guyed structures. Guy wires have been identified as a high risk to nocturnally migrating birds when used on tall (more than 300 feet tall), lighted communications towers (Gehring et al. 2011, Longcore et al. 2012). Structures with guy wires have been demonstrated to have higher collision risk than structures of similar height without guy wires (Gehring et al. 2011). However, the risk presented by shorter, unlit structures with guy wires, such as those proposed for the Project, is not well understood and has not been demonstrated to be a high risk (APLIC 2012). On a typical guyed structure proposed for the Project, the guy wires would attach to the structure at a height of approximately 165 feet, where nocturnally migrating birds would be at a very low risk. Birds known to be at a higher risk of collision with short guy wires, fences, and other low-height obstacles are typically species known to frequently fly low to the ground and include species of grouse and quail. Those species are addressed in Sections 3.2.7 and 3.2.8. The risk of collision with guy wires for all other birds is assumed to be highest in locations where the overall transmission line collision risk is also high.

Behaviors that put individual birds at risk of collision include flying at night or in low-visibility conditions (e.g., dawn, dusk, fog, or rain), and some birds such as raptors engaged in pursuit of prey also may fail to detect and avoid obstacles such as conductors, ground wires, or guy wires. Nocturnal migrant birds typically fly several hundred to several thousand feet above ground to avoid obstacles and are only at a higher risk of collision with low-height structures during takeoffs, landings, and in inclement weather (APLIC 2012). In some cases related to site-specific conditions, guyed structure may be expected to create a higher risk than typical conditions. Locations where the Project is situated on a ridgeline, elevated river banks, or other high points also may be locations of concentrated bird flight, although many of these locations also can be unsuitable for guyed structures. The risk of collision with guy wires also may be higher near wetlands or in agricultural areas, although other structure types also may be preferred to minimize land-use impacts where the Project would directly cross agricultural areas. Although the guyed structures proposed for the Project may increase the risk of collision overall, the primary risk that can be anticipated from the Project would be the risk associated with conductors and overhead ground wires.

Bird electrocutions on power lines have been documented and are a function of size, habitat, behavior, age, season, and weather (APLIC 2006). Large body size is considered a primary factor in determining electrocution risk, as is the use of transmission line structures for perching or nesting. Raptors and large wading birds are therefore at higher potential risk than smaller birds (APLIC 2006). Raptor nests on transmission line towers also can increase the risk of interruptions and outages, and can potentially catch fire in wet conditions when located over exposed, energized equipment (APLIC 2006).

Mortality by electrocution from the proposed 500kV transmission lines is extremely low as the transmission line would be constructed using avian-safe transmission line design that exceeds recommended spacing between energized and ground components (Design Feature 4). The separation distance between energized and grounded components would be much greater than a wrist-to-wrist or head-to-foot measurement of any bird present in the Project area and larger than the recommended distance of greater than 60 inches to nearly eliminate the risk of avian electrocutions (APLIC 2006). Although the spacing between energized and grounded components may vary slightly with structure type, the typical required spacing would be between 25 and 35 feet. The 345kV components would have slightly lower spacing, but still greater than 20 feet. Thus, the risk of electrocution from any Project components is anticipated to be negligible.

Electrocution of birds may be possible at substations that step down to lower voltages for subtransmission and distribution systems, where the distance between energized and grounded equipment may be reduced. Series compensation stations may have spacing slightly lower than used on transmission structures, given the absence of conductor sag, conductor sway, vegetation encroachment, and human activity unrelated to operation of the facility. However, low-voltage substations are not proposed for the Project, and series compensation stations and substations are not typically used by birds for foraging or nesting habitat.

Vegetation is cleared in the boundaries of substations resulting in low prey availability for predatory bird species, and little substrate is available for nest construction. Additionally, energized equipment in series compensation stations produces audible noise that presumably deters nesting in series compensation stations. Spacing of all Project components, regardless of location, would be much greater than 60 inches. Series compensation stations would incorporate avian protections in accordance with the Applicant's standards to reduce Project-related impacts on birds (Design Feature 4).

Direct effects on nesting birds include ground disturbance that can cause the loss of active nests and disruption of bird behavior and active bird nest sites during the breeding season from nearby Project construction and ongoing maintenance activities. Human disturbance and increased noise levels due to construction activities near active bird nest sites can result in nest abandonment, interference of nestling feeding, increased predation, and decreased nestling and egg survival due to desiccation and exposure to lethal temperatures (Richardson and Miller 1997; Romin and Muck 2002). Nesting bird density has been found to be positively correlated with vegetation volume across a wide range of vegetation types (Mills et al. 1991, Pons and Prodon 1996). Thus, the highest numbers of birds are likely to be affected by disturbance from construction activities in forested vegetation communities or other locations with high vegetation volume. However, as discussed in Section 3.2.9.4.1, many declining bird species are associated with grasslands and other vegetation communities with relatively low vegetation volume, and effects of the Project may still be of management concern even though fewer individual birds may be affected. These potential impacts should be considered in the context of the sensitivity of the birds that may be affected, as well as the total number of affected individuals.

Direct Effects on Migratory Bird Habitats

Nesting bird density has been found to be positively correlated with vegetation volume across a wide range of vegetation types (Mills et al. 1991, Pons and Prodon 1996). Thus, greater numbers of birds are likely to be affected by habitat loss and alteration in forested vegetation communities or other locations with high vegetation volume. However, many declining bird species are associated with grasslands and other vegetation communities with relatively low vegetation volume, and effects of the Project may be of management concern in those areas even though few individual birds may be affected. These potential impacts should be considered in the context of the sensitivity of the birds that may be affected, as well as the total number of affected individuals.

Construction of the Project would cause temporary and permanent loss of migratory bird habitat. These habitat losses could reduce the total population size that could be supported in areas surrounding the Project. In some species-specific cases, not all suitable habitat may be occupied (i.e., the population is well below the carrying capacity of the area), and individual birds displaced by the Project may be able to relocate to adjacent unoccupied habitat. For example, the yellow-billed cuckoo can use patches of riparian habitat that are scattered throughout the Project area, but very few of these patches are occupied annually potentially as a result of the small regional population size of the species, annual variability in site-specific conditions, or a combination of factors. However, most bird species present in the Project area are assumed to be affected approximately proportionate to the area of lost habitat and any effects extending outside the right-of-way.

Impacts on bird habitat include removal, alteration, fragmentation, and damage of vegetation during construction of Project access roads, transmission line towers, and all associated facilities. Clearing of vegetation in the right-of-way may result in an abrupt contrast with adjacent vegetation communities through the loss of ground cover, reduction in height and density of vegetation, introduction of invasive plants, conversion to another vegetation type, and the loss and damage of trees and shrubs (Section 3.2.5).

Species composition and occurrence of birds in any given habitat type is a function of suitable vegetation for nesting, food availability, and cover from predators (Martin 1993). Activities related to Project

construction could result in a loss and degradation of foraging and nesting habitat and cover for sagebrush-obligate species, upland game birds, migratory birds, and waterfowl. Displacement of individuals as a result of habitat loss or degradation may occur, particularly in ground-nesting and sagebrush-obligate species. Additionally, disturbance and interruption of breeding, nesting, and brood-rearing may occur as a result of increased noise, human presence, and construction activities. Short-term and long-term effects of habitat loss, alteration, and fragmentation on birds are likely to be a function of the scale of habitat change and each species life-history characteristics (Schmiegelow and Monkkonen 2002).

Agriculture

Agriculture does not provide a native vegetation community to migratory birds, and any loss of agricultural lands from the Project is assumed to cause a low impact on migratory birds. However, many bird species that forage in agricultural fields form large flocks and make daily commuter flights from roosting sites into farmland to forage. Flocking and frequent takeoffs and landings are behaviors that put birds at a relatively high risk of collision with transmission lines (APLIC 2012). In the Project area, agricultural fields are often in proximity to wetlands or rivers that are likely to provide roost sites for species that forage in farmlands. Thus, the mortality risk where the Project crosses agriculture may be higher than in some other vegetation communities.

Alpine

Potential impacts of the Project on alpine vegetation are primarily related to the temporary and permanent loss of habitat. As described in Section 3.2.9.4.1, alpine vegetation is relatively slow to recover from disturbance; thus, temporary impacts on migratory birds related to habitat loss may persist for longer in alpine vegetation than in other communities.

Aspen

Potential impacts of the Project on aspen vegetation would result from the change in vegetation structure required to meet vegetation management standards for conductor clearance. Aspen trees growing in the right-of-way, and any potential hazard trees adjacent to the right-of-way, would be removed and the right-of-way would be maintained in a low-growing vegetation community similar to mountain shrub. Aspen vegetation is typically patchy and dependent on disturbance, and the creation of corridors of mountain shrub within aspen vegetation may be perceived as similar to the natural structure of vegetation by aspen-dependent birds. Isolated and small patches of aspen appeared to support bird species richness similar to that present in larger patches of the vegetation community, potentially supported by the diverse matrix of vegetation communities that can form in response to some types of disturbance (Turchi et al. 1995). However, the total amount of aspen vegetation is declining regionally, and the conversion of aspen to low-growing vegetation such as mountain shrub may contribute to any declines of aspen-associated bird species of concern.

Barren and Sparsely Vegetated

As described in Section 3.2.9.4.1, barren and sparsely vegetated areas are relatively slow to recover from disturbance; thus, temporary impacts on migratory birds related to habitat loss may persist for longer in barren and sparsely vegetated areas than in other communities.

Big Sagebrush

Construction and operation of the Project would not require low-growing shrubs such as sagebrush be entirely cleared from the right-of-way to achieve required conductor clearance. However, access roads

and areas of temporary disturbance would fragment larger patches of sagebrush. Ground disturbance may facilitate the spread of grasses that support increased fire frequency, and increased recreational access also may increase the risk of fire ignitions (Section 3.2.21). Intense fires may cause the loss of big sagebrush vegetation for decades, reducing the total amount of habitat available for sagebrush-obligate bird species. In Wyoming, the density of sagebrush-obligate birds was observed to decline in proximity to access roads (Knick et al. 2003); thus, the Project may reduce bird density in areas without existing access roads. Although habitat loss can affect any bird species, sagebrush obligates in particular are identified as declining due to the loss or conversion of habitat through fire and human-caused changes, and the Project is likely to contribute to those declining trends in some species.

Developed and Disturbed

Most developed and disturbed areas do not provide a native vegetation community to migratory birds, and any loss of those developed and disturbed lands from the Project is assumed to cause a low impact on migratory birds.

Areas classified as developed and disturbed that were native vegetation disturbed by fire may be affected by the Project. Vegetation under 5 feet tall that has burned would not be uniquely affected by the Project, but would be affected by temporary and permanent ground disturbance. Forested areas that have burned would potentially be managed to remove snags that can present a hazard to the Project if the snags are located within falling distance of conductors or structures. Removal of snags in burned areas would result in the loss of a unique foraging resource that supports bird species of concern that depend on those features.

Grassland

Grassland vegetation typically lacks tall trees and other substrates that can support raptor and raven nests or provide perches for hunting raptors and ravens. Many ground-nesting grassland birds avoid tall structures, or experience increased levels of predation when new nest and perch substrates are introduced into grasslands. Ground-nesting birds also can be difficult to detect and avoid during preconstruction clearance surveys and can be at a disproportionate risk of nest loss as a result of ground-disturbing activities.

The Project will create tall structures in grasslands; although in many locations, the Project would be adjacent to existing transmission lines and would not create a new visual deterrent to bird species that avoid structures. While devices to deter nesting and perching by raptors and ravens could be used along portions of the Project, no deterrent is completely effective and some perching or nesting would be unavoidable. This potential for increased predation would be an effect in addition to the visual deterrent to grassland birds created by tall structures.

Invasive

Most invasive vegetation by definition does not provide a valuable native vegetation community to migratory birds, and any loss of invasive vegetation from the Project is assumed to cause a low impact on migratory birds. However, some areas classified as invasive also may contain native vegetation elements that support migratory birds. Potential impacts on those birds would be as described in this section under each native vegetation community.

Montane Forest

Similar to the potential impacts of the Project on aspen vegetation, intensive vegetation management would be required in the right-of-way in montane forest to remove trees and tall vegetation that can

exceed 5 feet in height. This would result in the loss and fragmentation of montane forest, including the loss of uncommon features such as snags that many bird species of concern depend on. In response to partial or complete timber harvest (potentially similar to the effects of the Project), the responses of birds varied widely among species, including species identified in this analysis as bird species of concern, although more species were found to decline than increase in abundance (Hutto et al. 1993).

Many forested areas are naturally patchy in the Project area and throughout the West, and some bird species do not appear to respond to fragmentation as strongly in the West as in eastern hardwood forests (Tewksbury et al. 1998). While the Project would result in habitat loss for migratory birds that use montane forest, this pattern indicates that for some species, effects of the Project-related to fragmentation may not extend long distances beyond the right-of-way.

Mountain Shrub

Potential impacts on mountain shrub and associated birds would be similar to those described for big sagebrush. However, the Project is likely to result in the creation of new areas of mountain shrub vegetation where the right-of-way crosses forested areas that require the removal of all vegetation taller than shrubs.

Pinyon-Juniper

Potential impacts on birds associated with pinyon-juniper vegetation would be similar to potential impacts on birds associated with montane forest vegetation. Impacts on pinyon-juniper vegetation related to fragmentation may be lower than in montane forest, however, as pinyon-juniper vegetation is often present in a naturally fragmented mosaic of woodland separated by patches of savanna with scattered trees. Additionally, pinyon-juniper vegetation communities do not typically form closed-canopy woodlands over large areas. As such, impacts related to fragmentation are less likely to affect migratory birds associated with this vegetation community than in montane forest.

Ponderosa Pine

Potential impacts on birds associated with ponderosa pine vegetation would be similar to potential impacts on birds associated with montane forest vegetation.

Riparian

Some of the potential impacts on riparian vegetation and associated birds would be similar to those described for montane forest and aspen. The Project may fragment some patches of riparian woodland as a result of required vegetation management; although in many cases, terrain at river crossings allow the Project to span vegetation with minimal management required. However, riparian woodlands are rare in the Project area and are extremely important to migratory birds; thus, the loss of any riparian woodlands would disproportionately affect migratory birds. Riparian areas, particularly when oriented approximately north-south, can form important migration corridors. Construction of the Project across riparian corridors would create a potentially high risk of bird collision with conductors and ground wires. While many small, agile resident birds nesting in riparian areas may not have behaviors that put them at a high risk of collision, waterfowl and wading birds moving along or resting in riparian areas are likely to be at a relatively high risk of collision.

Shrub and Shrub steppe

Potential impacts on shrub and shrub steppe vegetation and associated birds would be qualitatively similar to those described for big sagebrush, although this vegetation community and its associated suite of birds is not declining to the same degree as big sagebrush.

Water

The Project would span or avoid all open water, and would not cause the temporary or permanent loss of any aquatic habitat. However, rivers and lakes often support high numbers of waterfowl and wading birds, species that can be at a disproportionately high risk of collision with transmission lines. Additionally, rivers often serve as the core of migratory flyways in arid and semi-arid regions, as the high food productivity and availability of surface water can be extremely important resources for migrating individuals. Thus, collision risk associated with the Project is likely to be high near open water.

Wetland

Potential impacts on wetlands and wetland birds would be similar to those associated with water, and would primarily be related to the increased risk of collision in areas with high bird use. Some bird groups that often concentrate in wetlands, such as waterfowl and wading birds, are at a high risk of collision with transmission lines.

Indirect Effects

Fragmentation of avian habitat may increase edge effects that can alter habitat microclimates and species interactions, bird assemblages and diversity, bird densities at habitat edges, nest predation rates, and brood parasitism (Schmiegelow and Monkkonen 2002; Yahner et al. 2002). Changes to plant communities in a given habitat could occur indirectly as a result of Project construction and maintenance. The abundance of bird species that readily adapt to habitat disturbance or that favor early successional habitat may increase on the right-of-way compared to birds that depend on native vegetation structure for nesting (Yahner et al. 2002, Dobkin and Sauder 2004). The inadvertent introduction of invasive weed species could affect fire regimes and habitat microclimate (Section 3.2.5).

Construction of new access roads could increase human access and recreational activities not related to the Project (Knick et al. 2003) and indirectly increase potential hunting or poaching pressures (Bromley 1985). Disturbance and interruption of breeding, nesting, and brood-rearing as a result of increased human presence and noise construction activities can indirectly reduce fitness, survival, and reproductive performance of some individuals (Riffell et al. 1996).

Transmission structures may increase raptor nest site availability and alter raptor distribution on the landscape. Many areas may present sufficient natural nest sites such that nest sites are not a limiting resource for raptors. However, total nest density has appeared to increase after transmission line construction in some areas (Steenhoff et al. 1993). Ferruginous hawks (*Buteo regalis*), red-tailed hawks (*B. jamaicensis*) and great horned owls (*Bubo virginianus*) are known to nest on transmission towers (Gilmer and Wiehe 1977). Ferruginous hawks were the most common raptor nesting in the towers, and great horned owls were observed using abandoned ferruginous hawk nests in the following breeding season (Gilmer and Wiehe 1977). Construction of transmission structures could increase perch availability in habitats where perches are otherwise limited. Consequently, some raptor species may be more abundant along transmission line rights-of-way than in surrounding habitat (APLIC 2006; Knight and Kawashima 1993). An increase in perch availability may increase hunting pressure and predation rates, and adversely affect local prey populations, including those of other bird species of concern.

Use of transmission structures as nest sites can change some of the factors that control nest success on natural substrates. Continuous, long-term EMF exposure may affect reproductive success of species such as the American kestrel (*Falco sparverius*), increasing fertility, egg size, embryonic development, and fledging success, but reducing hatching success (Fernie et al. 2000; Fernie and Reynolds 2005). Species such as ferruginous hawks can increase nesting and fledgling success in artificial nest sites compared to natural sites (Tigner et al. 1996), potentially through factors such as reduced interactions with terrestrial predators. However, the probability of nesting on transmission towers may vary depending on different tower design. Consequently, success rates of mated raptor pairs may be influenced by conditions, substrate availability, and experience in nest building behavior (Gilmer and Wiehe 1977).

Mitigation Planning and Effectiveness

In addition to the design features of the Proposed Action for environmental protection, selective mitigation measures would be applied where feasible to reduce potential high and moderate adverse impacts on migratory birds and raptors. Once an alternative route is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. As described in Appendix J, the BLM would require the Applicant to monitor the implementation and effectiveness of conservation measures (i.e., design features of the Proposed Action for environmental protection, selective mitigation measures, and other measures implemented to avoid, minimize, and mitigate for resource impacts) and would implement adaptive management for migratory birds and raptors, as needed. Detailed monitoring requirements would be outlined in a biological resource monitoring plan which would be developed with the BLM and cooperating agencies and included in the POD. This plan also would include monitoring requirements for ESA-listed birds that are identified through the Section 7 consultation process.

Design features of the Proposed Action effective in reducing impacts on migratory birds and raptors include Design Features 4, 6, 7, 8, 26, 27, 28, 30, and 39. In addition to listed design features, the BLM or the appropriate land-management agency would implement resource avoidance measures as needed to meet resource-management objectives if sensitive biological resources are located near a geotechnical boring location as described in Section 2.4.2.2. Resource-avoidance measures for the geotechnical investigation would include (1) monitor geotechnical investigation activities, (2) adjust activities to occur outside of seasonal restrictions, (3) use alternative access or drilling methods, (4) relocate the borehole, and (5) abandon the geotechnical site. Selective mitigation measures also could be applied to reduce potential effects on wildlife resources.

- **Design Feature 4 (avian-safe design standards).** All new or rebuilt transmission facilities are constructed to avian-safe design standards (i.e., *Suggested Practices for Avian Protection on Power Lines*; *The State of the Art in 2006* [APLIC 2006]; *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* [APLIC 2012]; PacifiCorp's Avian Protection Plan, updated June 2011 [PacifiCorp 2011]). This design feature would limit the potential for avian collision, and reduce potential for avian injury and mortality. Mortality from electrocution is unlikely as the distance between conductors and the distance between energized conductors and grounded equipment is built to APLIC standards for high-voltage transmission lines (500kV and 345kV) and is greater than the wingspan of all avian species likely to occur in the Project area.
- **Design Feature 6 (seasonal restrictions for nesting migratory birds).** Avoiding vegetation clearing and other construction and maintenance activities would limit effects on areas with nesting birds during the migratory bird nesting season, when possible, between February 1 and August 31; however, dates may vary depending on species, current environmental conditions, results of preconstruction surveys, and approval by agency biologists or agency-approved environmental inspectors in coordination with agency biologists. This design feature would

restrict human activity to avoid disturbing migratory bird nests during species-specific breeding seasons.

- **Design Feature 7 (breeding bird and nest surveys).** In the event that vegetation clearing and other construction and maintenance activities do not avoid the nesting season for migratory birds (between February 1 and August 31), surveys for active migratory bird nests would be performed and a spatial nest buffer would be placed around each active nest until such time as the status of the nest is determined through monitoring to be no longer occupied. Based on the best available scientific information, appropriate spatial nest buffers (e.g., by species, guild, or habitat type), nest monitoring requirements would be identified through coordination with the FWS and other appropriate agencies and would be provided in a nest management plan in the POD. This design feature would minimize construction-related disturbance to avoid nesting migratory birds during the nesting season by determining active nest locations within 7 days of ground-disturbing activities and avoiding these areas. Design Feature 7 would require that nest surveys be conducted prior to construction to identify any nests that could be affected by construction of the Project. Seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans identified in Appendix J, Tables J-13 through J-15.
- **Design Feature 8 (raptor protection restrictions).** FWS and BLM guidelines for raptor protection during the breeding season (Refer to Appendix J, Tables J-13 through J-15) will be followed including seasonal and spatial buffers around active nests, eagle roosts, and winter concentration areas. This design feature will limit Project-related spatial and temporal disturbance to raptors during sensitive life-cycle periods to avoid human disturbance and increased noise levels in the vicinity of active nest sites and limit the potential for nest abandonment or a decrease in nest success. Exceptions to temporal and spatial buffer restrictions could be granted by the appropriate agencies when determined to be appropriate by a qualified biologist and approved by the Authorized Officer.
- **Design Feature 26 (vehicle access restriction).** All construction vehicle movement would be restricted to predesignated access roads. Exceptions would be granted for use of existing roads (e.g., interstate and state highways, well-maintained county roads), where construction traffic would be consistent with existing use and traffic volumes on roadways. This design feature would minimize disturbance to wildlife habitat and populations by limiting vehicular access and minimize risk of noxious weed introduction and the potential for subsequent changes to natural wildfire regimes as a result of alterations in plant assemblages that can increase the frequency and intensity of fire.
- **Design Feature 27 (construction activity access restriction).** All construction vehicle movement would be predetermined, and activities would be spatially limited. This design feature would minimize disturbance to wildlife and their habitat from construction activities and minimize risk of noxious weed introduction and the potential for subsequent changes to natural wildfire regimes as a result of alterations in plant assemblages that can increase the frequency and intensity of fire.
- **Design Feature 28 (personnel instruction).** All Project personnel would be instructed in the importance, purpose, necessity, and regulations for protection of natural resources. Instruction also would be given for reporting and stop work procedures in the event of a resource conflict. This would minimize impacts on wildlife habitat and populations throughout the Project corridor; especially in habitat areas that may not have been identified prior to the start of construction, by highlighting the importance of wildlife resources and by implementing appropriate protection to those resources according to federal and state laws.
- **Design Feature 30 (hazardous materials restrictions).** Hazardous materials would be contained and removed to a disposal facility and not drained into the ground, streams, or drainages. This

design feature would minimize degradation to wildlife species habitat due to Project activities by limiting the risk of introduction of contaminants into the environment that could adversely affect wildlife habitat.

- **Design Feature 39 (vehicle speed limit for overland travel).** All construction vehicle movement would be restricted to a speed limit of 15 miles per hour on overland access routes. This design feature would minimize wildlife mortality due to vehicle collisions by increasing reaction time of both driver and wildlife before a collision occurs. Restricting vehicle speed would give drivers a better opportunity to avoid wildlife on access routes and would increase opportunities for wildlife to avoid approaching vehicles.

In addition, Selective Mitigation Measures 7, 12, and 14 could be implemented to reduce potential impacts on avian species. The effectiveness of these selective mitigation resources is described in this section. The locations where these measures would be implemented for migratory birds would be identified through coordination with the Applicant and the agencies in the POD prior to construction.

- **Selective Mitigation Measure 7 (spanning or avoiding of sensitive features).** Project structures would be located to allow conductors to span or avoid identified sensitive features such as wildlife populations and habitat. This mitigation measure would avoid sensitive habitats such as riparian areas used as seasonal habitat and movement corridors, thereby reducing potential loss, degradation, and fragmentation of wildlife habitat in the Project area and reducing the risk of isolation between habitat areas and subpopulations, which can adversely affect dispersal rates, diversity, and abundance in wildlife species.
- **Selective Mitigation Measure 12 (seasonal and spatial wildlife restrictions).** Construction and maintenance activities would be restricted in designated areas, such as crucial winter range for big game; and during critical periods, such as species-specific breeding or nesting seasons (refer to Appendix J, Tables J-13 through J-15). This selective mitigation measure would minimize disturbance to wildlife by limiting human activity, noise and disturbance during sensitive life cycle periods, and reduce the risk of negative impacts on breeding success and species survival rates. Section J.8 in Appendix J describes how seasonal restrictions will be implemented. Table J-12 lists all general seasonal restrictions for migratory birds, including raptors. Tables J-13 (Wyoming), J-14 (Colorado), and J-15 (Utah) list species-specific nesting periods and seasonal restrictions for raptors in each state crossed by the Project.
- **Selective Mitigation Measure 14 (flight diverters and perch deterrents).** Shield wires, guy wires, and overhead optical ground wire along portions of the transmission line that have a high potential for avian collisions would be marked with flight diverters or other BLM- or USFS-approved devices in accordance with agency requirements. Portions of the transmission line that cross through, or are adjacent to, waterfowl and general migratory pathways or sensitive habitat for avian species may be marked to reduce the risk of avian collisions. This measure also may include use of devices to deter raptors from perching on transmission line structures. The specific segments to be marked or to include perch deterrents would be determined in consultation with the appropriate agencies. In addition to protections from Design Feature 4 (APLIC avian-safe standards for high-voltage transmission lines), this feature would minimize risk of avian injury and mortality due to collision with Project features that cross sensitive avian areas and reduce increased risk of potential predation rates on bird species of concern in the Project area.

Effects Analysis

Table 3-136 presents the framework for analysis used for migratory birds and habitat used in this analysis. A number of the direct and indirect effects identified above cannot be reliably quantified in a way that facilitates a comparison of alternative routes. Some effects may be categorically different between

alternative routes (e.g., a route that crosses a conservation area versus one that does not), but the degree of that effect may remain rather uncertain. Quantifiable analyses include the acres of impacts on habitat and the impacts on bird conservation areas crossed by any alternative route.

TABLE 3-136
FRAMEWORK FOR EFFECTS ANALYSIS FOR MIGRATORY BIRDS AND HABITAT

Potential Effect	Type of Assessment	Measurement Method	Notes
Effects on Migratory Birds			
Collision mortality (Project-wide)	Qualitative	None	Project-wide potential impacts
Collision mortality (site-specific)	Quantitative	Categorical	Discussion of identified high-risk areas by alternative
Electrocution mortality	Qualitative	None	Potential impacts are discountable
Loss of nests	Qualitative (proportional to acreage)	None	Project-wide potential impacts
Noise and disturbance	Qualitative	None	Project-wide potential impacts
Effects on Migratory Bird Habitat			
Loss or conversion of habitat	Quantitative	Results of vegetation analysis	Comparison by alternative route (refer to Section 3.2.5)
Visual and predation effects	Qualitative	None	Project-wide potential impacts
Effects on Migratory Bird Management			
Crossing managed conservation areas	Quantitative	Categorical (proportional to mileage)	Comparison by alternative route
Crossing unmanaged conservation areas	Quantitative	Categorical (proportional to mileage)	Comparison by alternative route

Although raptor nest information is presented for all alternatives, comparable spatial data for raptors and migratory birds are not available along all alternative routes. The best available spatial data provided by the BLM and cooperating agencies for species likely to occur in the Project area are presented in this section. Nest locations were not available for alternative routes crossing Colorado, and data collection and management methods are different between Wyoming and Utah. Comprehensive raptor nest inventories have not been conducted for the project and additional nests are likely to be located when inventories are conducted. Thus, raptor nest data are presented for informational purposes but do not allow direct comparison among alternative routes.

3.2.9.5 Results

This section presents results of the analysis specific to migratory birds through direct effects related to construction, operation, and maintenance of the Project and indirect effects related to habitat loss including effects on identified bird conservation areas. Habitat loss is addressed proportional to the amount of ground disturbance in each vegetation community. Disturbance associated with human activities and risk of collision mortality is treated as proportional to the length of each alternative route analyzed. These impacts are not discussed for each individual alternative route except where information indicates that potential impacts may occur in sensitive areas.

3.2.9.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.9.5.2 Impacts Common to All Action Alternatives

Impacts such as habitat loss, disturbance associated with human activities, and an increased risk of collision mortality would occur with all action alternatives. However, the intensity of these effects would vary among alternatives with the environmental setting, vegetation communities, length of the alternative route, and the presence of identified bird conservation areas. Therefore, there are no quantitative impacts common to all action alternatives.

3.2.9.5.3 345-kilovolt Ancillary Transmission Components

The 345kV ancillary transmission line components would be located in an area between the Mona and Clover substations west of the town of Mona, Utah. Most of the 345kV ancillary transmission line components would be in an existing right-of-way. The components cross less than 1 mile of the Utah Lake/Mona Lake/Tintic Valley BHCA, but all of the components would be within 1 mile of the boundary of the BHCA. None of the components crosses the complex of wetlands that the BHCA broadly includes. Because the 345kV ancillary transmission line components are a rebuild of an existing line, the rebuild is not anticipated to create an increased risk of collision for migratory birds in the BHCA or elsewhere.

3.2.9.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Environmental Setting

Section 3.2.5 describes the vegetation communities that provide habitat for migratory birds along the WYCO alternative routes, and Table J-7, Appendix J, lists migratory bird species of concern that are often associated with those vegetation communities. Rivers and other major bodies of water near the WYCO alternative routes include the Medicine Bow River, North Platte River, Muddy Creek, Little Snake River, and Yampa River.Table 3-137 lists areas in the study corridor for each alternative route that are identified for migratory bird conservation.

TABLE 3-137
ALTERNATIVE ROUTE COMPARISON FOR AREAS IDENTIFIED FOR MIGRATORY BIRD CONSERVATION FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Unit Name	Unit Type	Area in Two-Mile Corridor (acres)	Area of Complete Unit (acres)	Percent of Unit in Corridor	Miles Crossed
WYCO-B (Agency and Applicant Preferred Alternative)	North Platte River Reach	BHCA	8,037	568,376	1	6.4
	Powder Rim	BHCA	16,138	145,150	11	12.7
	Powder Rim	IBA	16,145	131,827	12	12.7
	Routt and Moffat County Uplands	BHCA	39,924	1,593,005	3	31.2
	Yampa River in Moffat County	BHCA	1,690	124,476	1	1.4
WYCO-C	North Platte River Reach	BHCA	8,037	568,376	1	6.4
	Powder Rim	BHCA	13,106	145,150	9	10.3
	Powder Rim	IBA	13,113	131,827	10	10.3
	Routt and Moffat County Uplands	BHCA	39,924	1,593,005	3	31.2
	Yampa River in Moffat County	BHCA	1,690	124,476	1	1.4

TABLE 3-137
ALTERNATIVE ROUTE COMPARISON FOR AREAS IDENTIFIED FOR MIGRATORY BIRD CONSERVATION FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Unit Name	Unit Type	Area in Two-Mile Corridor (acres)	Area of Complete Unit (acres)	Percent of Unit in Corridor	Miles Crossed
WYCO-D	Little Snake River	BHCA	32	33,045	<0.1	0.0
	Muddy Creek Wetlands	IBA	3,163	7,205	44	0.0
	North Platte River Reach	BHCA	8,037	568,376	1	6.4
	Routt and Moffat County Uplands	BHCA	76,141	1,593,005	5	59.6
	Yampa River in Moffat County	BHCA	19,437	124,476	16	15.0
	Yampa River in Routt County	BHCA	5,751	108,734	5	5.1
WYCO-F	Muddy Creek Wetlands	IBA	3,908	7,205	54	2.5
	North Platte River Reach	BHCA	8,037	568,376	1	6.4
	Powder Rim	BHCA	13,477	145,150	9	10.7
	Powder Rim	IBA	13,485	131,827	10	10.7
	Routt and Moffat County Uplands	BHCA	39,924	1,593,005	3	31.2
	Yampa River in Moffat County	BHCA	1,690	124,476	1	1.4

NOTES:
BHCA = Bird Habitat Conservation Area
IBA = Important Bird Area

Impacts Common to All WYCO Alternative Routes

All WYCO alternative routes cross the Medicine Bow River and North Platte River in identical locations. Open water and riparian vegetation may be present at each of these river crossings, and all rivers are assumed to act as migration corridors as well as supporting higher bird use than upland vegetation away from rivers. The bird collision risk at each of these locations is assumed to be higher than the typical Project-wide collision risk.

All WYCO alternative routes cross the Medicine Bow River immediately after leaving the Aeolus Substation. The Medicine Bow River in this location is a meandering stream with riparian shrubs but no riparian woodland present in the floodplain. Vegetation management would not require clearing of all riparian vegetation in this location, but the Project would potentially increase the collision risk for all birds flying along the river corridor.

All WYCO alternative routes cross the North Platte River in the North Platte River Reach BHCA. The North Platte River in this location flows south to north, and the location crossed by the Project is located between a wetlands complex in numerous tributaries of the Platte River and wetlands further north protected in the Pathfinder NWR outside the Project area. The proposed crossing location does not support riparian woodland or a wide floodplain. However, the location where the Project crosses the North Platte River and associated BHCA is likely to carry a high risk of collision for migratory birds, relative to typical conditions across the Project area. The orientation of the Platte River, the presence of open water, and the location of the crossing between regionally important wetlands complexes, is anticipated to support concentrated movements of migratory birds along the Platte River and through the

Project right-of-way. By increasing the collision risk for migratory birds, the Project also would affect the resources identified for conservation efforts in the North Platte River Reach BHCA.

Segments of each WYCO alternative route (between Walcott and Wamsutter, Wyoming; between series compensation station Siting Area C and the COUT and COUT BAX alternative routes) that follow the same alignments would have the same impacts on migratory bird habitat.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Alternative WYCO-B in Wyoming predominantly crosses big sagebrush and shrub/shrub steppe vegetation communities. Smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, invasive, pinyon-juniper, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative WYCO-B crosses the Powder Rim IBA and BHCA. The matrix of vegetation types present on the Powder Rim, including pinyon-juniper woodland interspersed with big sagebrush, is uncommon in Wyoming and supports a suite of juniper-associated and sagebrush-obligate birds. The portion of the unit crossed by Alternative WYCO-B is in a sparse matrix of juniper and sagebrush and does not contain the dense pinyon-juniper woodland present further west along the Powder Rim.

The miles of all identified bird conservation areas crossed by Alternative WYCO-B in Wyoming are listed in Table 3-137.

Table 3-138 lists raptor nests recorded within 0.5 mile of Alternative WYCO-B and other alternative routes in Wyoming. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

TABLE 3-138
ALTERNATIVE ROUTE COMPARISON FOR RAPTOR NEST INVENTORY FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

	Number of Nests within 0.5 Mile						
Alternative Route	**Northern Harrier**	**Osprey**	**Sharp-shinned Hawk**	**Cooper's Hawk**	**Red-tailed Hawk**	**Prairie Falcon**	**American Kestrel**
WYCO-B (Agency and Applicant Preferred Alternative)	2	0	0	1	11	0	2
Wyoming	*2*	*0*	*0*	*1*	*11*	*0*	*2*
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-C	2	0	0	0	19	0	6
Wyoming	*2*	*0*	*0*	*0*	*19*	*0*	*6*
Colorado	*0*	*0*	*0*	*0*	*19*	*0*	*0*
WYCO-D	2	0	0	0	12	0	3
Wyoming	*2*	*0*	*0*	*0*	*12*	*0*	*3*
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
WYCO-F	2	0	0	1	11	0	2
Wyoming	*2*	*0*	*0*	*1*	*11*	*0*	*2*
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NOTE: The table is based on the best available migratory bird data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Additional raptor nests are assumed to be present in the Project area.

Environmental Consequences (Wyoming)

Approximately 54 percent of the vegetation affected by Alternative WYCO-B in Wyoming would be big sagebrush (including 1,196 acres of long-term disturbance), and approximately 41 percent would be shrub/shrub steppe (including 904 acres of long-term disturbance). Thus, nearly all of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative WYCO-B in Wyoming are listed in Tables 3-53, 3-55, and 3-56. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Potential impacts of the Project in the Powder Rim IBA and BHCA would be identical to those discussed for habitat types crossed in the Project area, as well as Project-wide impacts relating to disturbance and collision risk, but would take place in an area identified as sensitive due to the limited amount of pinyon-juniper vegetation in Wyoming.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-B in Wyoming is located within 1 mile of known raptor nests (Table 3-107). A CSU stipulation in the BLM Rawlins Field Office RMP prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests unless current nest activity, natural topographic barriers, and line-of-sight distances suggest exceptions to buffer distances could be approved without unacceptable impacts on nesting activity. Projects that could adversely affect raptors in the BLM Rawlins Field Office are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b). Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

If exceptions to the CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas such as 5 years of annual nest monitoring post construction, marking of optical ground wire on the transmission line (Selective Mitigation Measure 14) in the CSU area, closing access roads in the CSU area after construction (Selective Mitigation Measure 15), or other measures implemented in accordance with agency requirements in the event that monitoring detects a Project related impact on nesting activities. After mitigation, impacts associated with the Project would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado predominantly crosses big sagebrush and shrub/shrub steppe vegetation communities. Smaller areas of agriculture, barren/sparsely vegetated, developed/disturbed, grassland, invasive, pinyon-juniper, riparian, and water vegetation communities also are crossed by this alternative route in Colorado.

Alternative WYCO-B crosses the Routt and Moffat County Uplands BHCA, which supports birds associated with big sagebrush and shrub/shrub steppe vegetation. This BHCA also contains a segment of the Little Snake River, which is crossed by Alternative WYCO-B in the BHCA. Although no mature

riparian woodlands are present in this location, low-growing riparian shrubs are present in a relatively wide floodplain.

Alternative WYCO-B crosses the Yampa River in Moffat County BHCA, which contains a segment of the Yampa River. Although no mature riparian woodlands are present in this location, low-growing riparian shrubs and a small number of larger trees is present in a relatively wide floodplain.

The miles of all identified bird conservation areas crossed by Alternative WYCO-B in Colorado are listed in Table 3-137.

Raptor nest data are not available for analysis in Colorado (Table 3-138). Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Colorado)

Approximately 55 percent of the vegetation affected by Alternative WYCO-B in Colorado would be big sagebrush (including 571 acres of long-term disturbance), approximately 23 percent would be shrub/shrub steppe (including 232 acres of long-term disturbance), and approximately 11 percent would be pinyon-juniper (including 112 acres of long-term disturbance). Much of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative WYCO-B in Colorado are listed in Tables 3-53, 3-55, and 3-56. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7, Appendix J, associated with vegetation communities crossed by this alternative route.

Potential impacts on the Routt and Moffat County Uplands BHCA would primarily be related to habitat loss and the increased risk of collision that would be created where the alternative crosses the Little Snake River.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Alternative WYCO-C

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming predominantly crosses big sagebrush and shrub/shrub steppe vegetation communities. Smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, invasive, pinyon-juniper, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative WYCO-C in Wyoming follows the same alignment as Alternative WYCO-B between the Aeolus substation and Wamsutter in Wyoming. Between Wamsutter and the Wyoming/Colorado state line, Alternative WYCO-C follows an existing pipeline corridor approximately 5 miles west of Alternative WYCO-B. Vegetation communities and bird species present are the same as those described

for Alternative WYCO-B, and those resources present and likely to be affected by Alternative WYCO-C are described at the beginning of Section 3.2.9.5.

Table 3-138 lists raptor nests recorded within 0.5 mile of Alternative WYCO-C and other alternative routes in Wyoming. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Wyoming)

Approximately 51 percent of the vegetation affected by Alternative WYCO-C in Wyoming would be big sagebrush (including 1,157 acres of long-term disturbance), and approximately 45 percent would be shrub/shrub steppe (including 1,024 acres of long-term disturbance). Thus, nearly all of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative WYCO-C in Wyoming are listed in Tables 3-53, 3-55, and 3-56. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative WYCO-C crosses the Powder Rim IBA and BHCA in a slightly different location than Alternative WYCO-B. The potential impacts on the IBA and BHCA would differ only in proportion to the difference in the miles crossed.

The miles of all identified bird conservation areas crossed by Alternative WYCO-C in Wyoming are listed in Table 3-137.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-B in Wyoming is located within 1 mile of known raptor nests (Table 3-107). A CSU stipulation in the BLM Rawlins Field Office RMP prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests unless current nest activity, natural topographic barriers, and line-of-sight distances suggest exceptions to buffer distances could be approved without unacceptable impacts on nesting activity. Projects that could adversely affect raptors in the BLM Rawlins Field Office are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b). Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

If exceptions to the CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas such as 5 years of annual nest monitoring post construction, marking of optical ground wire on the transmission line (Selective Mitigation Measure 14) in the CSU area, closing access roads in the CSU area after construction (Selective Mitigation Measure 15), or other measures implemented in accordance with agency requirements in the event that monitoring detects a Project related impact on nesting activities. After mitigation, impacts associated with the Project would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative WYCO-C in Colorado would be the same as Alternative WYCO-B, as the two alternative routes follow the same alignment through the state.

Alternative WYCO-D

Affected Environment (Wyoming)

Alternative WYCO-D in Wyoming predominantly crosses big sagebrush and shrub/shrub steppe vegetation communities. Smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, pinyon-juniper, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Vegetation communities and bird species present are similar to those described for Alternative WYCO-B. Alternative WYCO-D runs east of Hanna parallel with an existing transmission line and in proximity to wind turbines. Alternative WYCO-D crosses and follows Muddy Creek near Wyoming Highway 789, in the vicinity of the Muddy Creek Wetlands IBA.

The miles of all identified bird conservation areas crossed by Alternative WYCO-D in Wyoming are listed in Table 3-137).

Table 3-138 lists raptor nests recorded within 0.5 mile of Alternative WYCO-D and other alternative routes in Wyoming. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Wyoming)

Approximately 69 percent of the vegetation affected by Alternative WYCO-D in Wyoming would be big sagebrush (including 1,446 acres of long-term disturbance), and approximately 26 percent would be shrub/shrub steppe (including 553 acres of long-term disturbance). Thus, nearly all of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Alternative WYCO-D would be located near an existing transmission line, which can reduce the collision mortality risk to birds by minimizing the number of maneuvers required for a bird to avoid all obstacles in a flight path.

Alternative WYCO-D crosses Muddy Creek, follows the border of the Muddy Creek Wetlands IBA, then crosses Muddy Creek a second time and follows parallel to the stream until near the confluence with the Little Snake River near the town of Baggs. The Project would create an increased collision risk for birds flying along Muddy Creek, or flying across the Project right-of-way between the wetlands complex and upland vegetation.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative WYCO-D in Wyoming are listed in Tables 3-53, 3-55, and 3-56. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-B in Wyoming is located within 1 mile of known raptor nests (Table 3-107). A CSU stipulation in the BLM Rawlins Field Office RMP prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests unless current nest activity, natural topographic barriers, and line-of-sight distances suggest exceptions to buffer distances could be approved without unacceptable impacts on nesting activity. Projects that could adversely affect raptors in the BLM Rawlins Field Office are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b). Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

If exceptions to the CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas such as 5 years of annual nest monitoring post construction, marking of optical ground wire on the transmission line (Selective Mitigation Measure 14) in the CSU area, closing access roads in the CSU area after construction (Selective Mitigation Measure 15), or other measures implemented in accordance with agency requirements in the event that monitoring detects a Project related impact on nesting activities. After mitigation, impacts associated with the Project would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Affected Environment (Colorado)

Alternative WYCO-D in Colorado predominantly crosses big sagebrush but crosses more acres of agriculture than all other WYCO alternative routes in Colorado.

Alternative WYCO-D in Colorado follows a different alignment than all other WYCO alternative routes in Colorado. Alternative WYCO-D crosses the Routt and Moffat County Uplands BHCA in a different location than all other WYCO alternative routes, and also crosses the Yampa River in Routt County BHCA and Yampa River in Moffat County BHCA. Alternative WYCO-D crosses the Little Snake River and Yampa River in different locations than all other WYCO alternative routes in Colorado. The Little Snake River meanders in a relatively wide floodplain at the location where it is crossed by Alternative WYCO-D. A small number of riparian trees are present, and the remainder of the floodplain supports wetland vegetation and agriculture.

Alternative WYCO-D first crosses the Yampa River in a meandering portion of the river east of Craig. Patches of riparian trees up to approximately 30 acres are present adjacent to the Yampa River, its meanders, and a tributary also crossed by Alternative WYCO-D near the Yampa River. Alternative WYCO-D then crosses the Yampa River west of Craig adjacent to existing transmission lines in a location where the floodplain is relatively narrow. Alternative WYCO-D crosses the Yampa River a third time southeast of Maybell, again in a relatively narrow floodplain with riparian shrubs and a small number of trees present.

The miles of all identified bird conservation areas crossed by Alternative WYCO-D in Colorado are listed in Table 3-137.

Raptor nest data are not available for analysis in Colorado (Table 3-138). Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Colorado)

Approximately 65 percent of the vegetation affected by Alternative WYCO-D in Colorado would be big sagebrush (including 1,446 acres of long-term disturbance), and approximately 15 percent would be agriculture (including 553 acres of long-term disturbance). Much of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds. This may contribute to downward population trajectories for declining sagebrush species in particular. Additional impacts on birds foraging in agricultural areas would result from the loss of foraging habitat along this alternative route. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for WYCO-D in Colorado are listed in Tables 3-53, 3-55, and 3-56. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative WYCO-D would have impacts on the Routt and Moffat County Uplands BHCA that are similar to all other WYCO alternative routes, but these impacts would be greater due to the length of Alternative WYCO-D. Alternative WYCO-D crosses the Little Snake River in a location that is likely to create a higher risk of collision than the location crossed by all other WYCO alternative routes due to the extensive agriculture and wetland vegetation supported by the meandering river channel.

Alternative WYCO-D crosses the Yampa River three times, which would create a higher risk of collision than the single crossing used by all other WYCO alternative routes. However, two of the crossing locations on Alternative WYCO-D are in a narrow floodplain where the terrain would allow the river to be spanned with no vegetation management that would affect riparian trees. The same two crossings also are parallel to an existing transmission line, which can reduce the collision mortality risk to birds by minimizing the number of maneuvers required for a bird to avoid all obstacles in a flight path. The Yampa River crossing location east of Craig would require that riparian vegetation, including patches of riparian woodland, be removed or fragmented by vegetation management. These impacts also would affect the resources identified for conservation in the Yampa River in Routt County BHCA and Yampa River in Moffat County BHCA.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F is similar to Alternative WYCO-B, but crosses a portion of the Muddy Creek Wetlands IBA. Alternative WYCO-F does not cross Muddy Creek or any wetlands in the IBA but would be located within approximately 650 feet of the nearest wetland.

The miles of all identified bird conservation areas crossed by Alternative WYCO-F in Wyoming are listed in Table 3-137.

Table 3-138 lists raptor nests recorded within 0.5 mile of Alternative WYCO-F and other alternative routes in Wyoming. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Wyoming)

Approximately 62 percent of the vegetation affected by Alternative WYCO-F in Wyoming would be big sagebrush (including 1,494 acres of long-term disturbance), and approximately 35 percent would be shrub/shrub steppe (including 832 acres of long-term disturbance). Thus, nearly all of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Alternative WYCO-F in Wyoming predominantly crosses big sagebrush and shrub/shrub steppe vegetation communities. Smaller areas of barren/sparsely vegetated, developed/disturbed, grassland, invasive, pinyon-juniper, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative WYCO-F in Wyoming are listed in Tables 3-53, 3-55, and 3-56. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

The Project would create an increased collision risk for birds flying along Muddy Creek, or flying across the Project right-of-way between the wetlands complex and upland vegetation, but this risk would be lower than Alternative WYCO-D, which crosses and follows Muddy Creek.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project and seasonal restrictions on construction and maintenance activities would be implemented in accordance with agency policies and plans (Selective Mitigation Measure 12). Alternative WYCO-B in Wyoming is located within 1 mile of known raptor nests (Table 3-107). A CSU stipulation in the BLM Rawlins Field Office RMP prohibits construction of structures requiring repeated human presence within 825 feet of active raptors nests unless current nest activity, natural topographic barriers, and line-of-sight distances suggest exceptions to buffer distances could be approved without unacceptable impacts on nesting activity. Projects that could adversely affect raptors in the BLM Rawlins Field Office are evaluated on a case-by-case basis by BLM resource specialists (BLM 2008b). Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

If exceptions to the CSU stipulations identified in the BLM Rawlins Field Office RMP were granted, BLM would require additional mitigation measures to reduce and monitor potential effects on raptors nesting in CSU areas such as 5 years of annual nest monitoring post construction, marking of optical ground wire on the transmission line (Selective Mitigation Measure 14) in the CSU area, closing access roads in the CSU area after construction (Selective Mitigation Measure 15), or other measures implemented in accordance with agency requirements in the event that monitoring detects a Project related impact on nesting activities. After mitigation, impacts associated with the Project would not be anticipated to cause a decline in raptor populations in the Project area in Wyoming.

Affected Environment and Environmental Consequences (Colorado)

The affected environment for Alternative WYCO-F in Colorado would be the same as Alternative WYCO-B, as the two alternative routes follow the same alignment through the state.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Environmental Setting

Section 3.2.5 describes the vegetation communities that provide habitat for migratory birds along the COUT BAX alternative routes, and Table J-7 , Appendix J, list migratory bird species of concern that are often associated with those vegetation communities. Rivers and other major bodies of water near the COUT BAX alternative routes include the White River, Green River, Price River, numerous small tributaries and wetlands in the Uinta Basin, San Pitch River, Salt Creek, and West Creek. Table 3-139 lists areas in the study corridor for each alternative route that are identified for migratory bird conservation.

TABLE 3-139
ALTERNATIVE ROUTE COMPARISON FOR AREAS IDENTIFIED FOR MIGRATORY BIRD CONSERVATION FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Unit Name	Unit Type	Area in Two-Mile Corridor (acres)	Area of Complete Unit (acres)	Percent of Unit in Corridor	Miles Crossed
COUT BAX-B	Cisco Desert	BHCA	70,626	244,177	29	56.5
	Colorado National Monument/Rabbit Valley/Uplands	BHCA	5,002	232,018	2	3.9
	Green River	BHCA	2,849	177,096	2	2.1
	Roan Plateau/Piceance Creek/Cathedral Bluffs	BHCA	88,385	1,451,954	6	69.4
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
	White River	BHCA	10,908	227,937	5	9.6
COUT BAX-C	Cisco Desert	BHCA	70,626	244,177	29	56.5
	Colorado National Monument/Rabbit Valley/Uplands	BHCA	5,002	232,018	2	3.9
	Green River	BHCA	2,849	177,096	2	2.1
	Roan Plateau/Piceance Creek/Cathedral Bluffs	BHCA	88,385	1,451,954	6	69.4
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
	White River	BHCA	10,908	227,937	5	9.6
COUT BAX-E	Cisco Desert	BHCA	70,626	244,177	29	56.5
	Colorado National Monument/Rabbit Valley/Uplands	BHCA	5,002	232,018	2	3.9
	Green River	BHCA	2,849	177,096	2	2.1
	Roan Plateau/Piceance Creek/Cathedral Bluffs	BHCA	88,385	1,451,954	6	69.4
	Summerhouse Spring	BHCA	1,337	2,137	63	1.4
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
	White River	BHCA	10,908	227,937	5	9.6

NOTES:
BHCA = Bird Habitat Conservation Area
IBA = Important Bird Area

Impacts Common to All COUT BAX Alternative Routes

All COUT BAX alternative routes cross the White River and White River BHCA, Roan Plateau/Piceance Creek/Cathedral Bluffs BHCA, Colorado National Monument/Rabbit Valley/Uplands BHCA, Cisco Desert BHCA, and the Green River and Green River BHCA in identical locations. Open water and riparian vegetation may be present at the White River and Green River crossings, and all rivers are assumed to act as migration corridors as well as support higher bird use than upland vegetation away from rivers. The collision risk at each of these river crossing locations is assumed to be higher than the typical Project-wide collision risk.

All COUT BAX alternative routes cross the White River adjacent to an existing transmission line, where vegetation in the floodplain is primarily riparian shrubs and other low vegetation and removal of trees for vegetation management would be anticipated to be minimal. Colocation with existing transmission lines can increase the cumulative visibility of all lines and may serve to reduce the total collision risk.

All COUT BAX alternative routes cross the Roan Plateau/Piceance Creek/Cathedral Bluffs BHCA, which supports sagebrush-obligate and pinyon-juniper bird communities. Construction of the Project through this BHCA would require the clearing of tall vegetation in pinyon-juniper habitat, which would recover to a vegetation community dominated by shrubs and low-growing vegetation. Pinyon-juniper vegetation along the COUT BAX alternative routes in the BHCA is naturally patchy, but the Project would further fragment or reduce the size of some patches of pinyon-juniper woodland.

All COUT BAX alternative routes cross the Colorado National Monument/Rabbit Valley/Uplands BHCA, which supports sagebrush-obligate, shrub steppe, and pinyon-juniper bird communities. The COUT BAX alternative routes primarily cross shrub steppe vegetation with scattered pinyon and juniper trees in this BHCA, and removal of trees for vegetation management would be anticipated to be minimal.

In Utah, all COUT BAX alternative routes follow approximately parallel to I-70 and a railway through the Cisco Desert BHCA, which provides habitat for golden eagles, other raptors, and shrub steppe bird species. The COUT BAX alternative routes would be near or parallel to existing transmission lines in the western portion of this BHCA, west of Thompson. The COUT BAX alternative routes would potentially create perching or nesting sites that would be used by golden eagles and other raptors, although the collision risk also would be increased.

All COUT BAX alternative routes cross the Green River in the Green River BHCA. The Green River at this location is bordered by a narrow band of riparian woodland on each side, which would be affected by vegetation management. The crossing location is adjacent to an existing transmission line. Colocation with existing transmission lines can increase the cumulative visibility of all lines, and may serve to reduce the total collision risk.

All COUT BAX alternative routes cross the Utah Lake/Mona Lake/Tintic Valley BHCA in the vicinity of the Clover Substation. This BHCA includes a wetlands complex in the floodplain of West Creek, above the location where it enters Mona Reservoir. Construction of the Project in this location would increase the collision risk for birds traveling along West Creek and its associated wetlands. Agriculture is present to the north and south of the COUT BAX alternative routes, which may increase the total number of daily flights across the right-of-way as birds travel between resting sites in wetlands and foraging activities in agricultural fields.

Segments of each COUT BAX alternative route (from the eastern end of the COUT BAX alternative routes to the series compensation station Siting Area G, including all of the COUT BAX alternative routes in Colorado between Salt Creek Canyon and the Clover Substation) that follow the same alignments would have the same impacts on migratory bird habitat.

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B in Colorado predominantly crosses big sagebrush, pinyon-juniper, and shrub/shrub steppe vegetation communities. Smaller areas of alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities also are crossed by this alternative route.

The miles of all identified bird conservation areas crossed by Alternative COUT BAX-B in Colorado are listed in Table 3-139.

Raptor nest data are not available for analysis in Colorado (Table 3-140). Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

TABLE 3-140
ALTERNATIVE ROUTE COMPARISON
FOR RAPTOR NEST INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

	Number of Nest within 0.5 Mile						
Alternative Route	**Northern Harrier**	**Osprey**	**Sharp-shinned Hawk**	**Cooper's Hawk**	**Red-tailed Hawk**	**Prairie Falcon**	**American Kestrel**
COUT BAX-B	0	0	0	0	0	0	0
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*0*	*0*	*0*
COUT BAX-C	0	0	0	0	0	0	0
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*0*	*0*	*0*
COUT BAX-E	0	0	0	0	0	0	0
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*0*	*0*	*0*

NOTE: The table is based on the best available migratory bird data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Additional raptor nests are assumed to be present in the Project area.

Environmental Consequences (Colorado)

Approximately 38 percent of the vegetation affected by Alternative COUT BAX-B in Colorado would be big sagebrush (including 548 acres of long-term disturbance), approximately 24 percent would be shrub/shrub steppe (including 344 acres of long-term disturbance), and approximately 25 percent would be pinyon-juniper (including 371 acres of long-term disturbance). Much of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation and also would result in the loss and fragmentation of pinyon-juniper vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT BAX-B in Colorado are listed in Tables 3-57, 3-59, and 3-60. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT BAX-B would not have any additional impacts on migratory bird conservation areas or identified areas of high collision risk in addition to those described as common to all COUT BAX alternative routes.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Affected Environment (Utah)

Alternative COUT BAX-B in Utah predominantly crosses shrub/shrub steppe, but also large areas of barren/sparsely vegetated, big sagebrush, and pinyon-juniper vegetation communities. Smaller areas of agriculture, alpine, aspen, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities also are crossed by this alternative route.

Alternative COUT BAX-B crosses the San Pitch River in a wide valley dominated by agriculture with small numbers of riparian trees present.

The miles of all identified bird conservation areas crossed by Alternative COUT BAX-B in Utah are listed in Table 3-139.

Table 3-140 lists the number of known raptor nests recorded within 0.5 mile of the COUT BAX alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 51 percent of the vegetation affected by Alternative COUT BAX-B in Utah would be shrub/shrub steppe (including 1,651 acres of long-term disturbance), approximately 10 percent would be pinyon-juniper (including 330 acres of long-term disturbance), and approximately 8 percent would be big sagebrush (including 248 acres of long-term disturbance). Much of the impacts on migratory bird habitat from this alternative route would affect species associated with shrub/shrub steppe vegetation, and also would result in the loss and fragmentation of pinyon-juniper vegetation. Approximately 9 percent of this alternative route would be in barren/sparsely vegetated (including 298 acres of long-term disturbance), although this would affect relatively few birds through habitat loss. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT BAX-B in Utah are listed in Tables 3-57, 3-59, and 3-60. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT BAX-B crosses the San Pitch River in an area dominated by agricultural activities. This would increase the risk of collision for birds moving daily from the vicinity of the river to forage in farmlands, as well as birds migrating along the river corridor.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT BAX-C in Colorado would be the same as Alternative COUT BAX-B, as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Alternative COUT BAX-C in Utah predominantly crosses shrub/shrub steppe but also large areas of barren/sparsely vegetated, big sagebrush, and pinyon-juniper vegetation communities. Smaller areas of agriculture, alpine, aspen, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities also are crossed by this alternative route.

The miles of all identified bird conservation areas crossed by Alternative COUT BAX-C in Utah are listed in Table 3-139.

Table 3-140 lists the number of known raptor nests recorded within 0.5 mile of the COUT BAX alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 52 percent of the vegetation affected by Alternative COUT BAX-C in Utah would be shrub/shrub steppe (including 1,747 acres of long-term disturbance), approximately 11 percent would be pinyon-juniper (including 357 acres of long-term disturbance), and approximately 8 percent would be big sagebrush (including 283 acres of long-term disturbance). Much of the impacts on migratory bird habitat from this alternative route would affect species associated with shrub/shrub steppe vegetation, and also would result in the loss and fragmentation of pinyon-juniper vegetation. Approximately 9 percent of this alternative route would be in barren/sparsely vegetated (including 293 acres of long-term disturbance), although this would affect relatively few birds through habitat loss. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT BAX-C in Utah are listed in Tables 3-57, 3-59, and 3-60. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT BAX-C crosses the San Pitch River in the same location as Alternative COUT BAX-B.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT BAX-E in Colorado would be the same as Alternative COUT BAX-B, as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Alternative COUT BAX-E in Utah predominantly crosses shrub/shrub steppe but also large areas of barren/sparsely vegetated, big sagebrush, and pinyon-juniper vegetation communities. Small areas of agriculture, alpine, aspen, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, and water vegetation communities also are crossed.

Alternative COUT BAX-E crosses the San Pitch River in a valley dominated by agricultural activities with bands of riparian woodland along the river channel. In addition to the conservation areas described as common to all COUT BAX alternative routes, Alternative COUT BAX-E crosses the Summerhouse Spring BHCA. The miles of all identified bird conservation areas crossed by Alternative COUT BAX-E in Utah are listed in Table 3-139.

Table 3-140 lists the number of known raptor nests recorded within 0.5 mile of the COUT BAX alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 55 percent of the vegetation affected by Alternative COUT BAX-E in Utah would be shrub/shrub steppe (including 1,869 acres of long-term disturbance), approximately 9 percent would be pinyon-juniper (including 291 acres of long-term disturbance), and approximately 9 percent would be big sagebrush (including 289 acres of long-term disturbance). Much of the impacts on migratory bird habitat from this alternative route would affect species associated with shrub/shrub steppe vegetation, and also would result in the loss and fragmentation of pinyon-juniper vegetation. Approximately 8 percent of this alternative route would be in barren/sparsely vegetated (including 279 acres of long-term disturbance), although this would affect relatively few birds through habitat loss. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT BAX-E in Utah are listed in Tables 3-57, 3-59, and 3-60. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT BAX-B crosses the San Pitch River in an area dominated by agricultural activities with small amounts of riparian woodland present. This would increase the risk of collision for birds moving daily from the vicinity of the river to forage in farmlands, as well as birds migrating along the river corridor. Alternative COUT BAX-E crosses a portion of the Summerhouse Spring BHCA, which is recognized as habitat for wetland birds. The Project would not affect any wetlands in this location, and impacts on birds in this BHCA would be primarily related to habitat loss and disturbance.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

Environmental Setting

Section 3.2.5 describes the vegetation communities that provide habitat for migratory birds along the COUT alternative routes, and Table J-7 , Appendix J, lists migratory bird species of concern that are often associated with those vegetation communities. Rivers and other major bodies of water near the COUT

alternative routes include the White River, Green River, Bottle Hollow Reservoir, Duchesne River, Starvation Reservoir, Strawberry River, numerous small tributaries and wetlands in the Uinta Basin, Strawberry Reservoir, Nebo Creek, Spanish Fork, Salt Creek, and West Creek.

Table 3-141 lists areas in the study corridor for each alternative route that are identified for migratory bird conservation.

TABLE 3-141
ALTERNATIVE ROUTE COMPARISON FOR AREAS IDENTIFIED FOR MIGRATORY BIRD CONSERVATION FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Unit Name	Unit Type	Area in Two-Mile Corridor (acres)	Area of Complete Unit (acres)	Percent of Unit in Corridor	Miles Crossed
COUT-A	Duchesne River	BHCA	2,726	65,579	4	2.1
	Nebo Creek	BHCA	7,137	26,277	27	5.8
	Upper Green River	BHCA	3,265	58,506	6	2.1
	Upper Strawberry Watershed UT12	IBA	5,430	126,074	4	1.7
	Upper Strawberry-Avintaquin	BHCA	17,870	227,127	8	13.4
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
COUT-B	Duchesne River	BHCA	3,804	65,579	6	2.9
	Emma Park	BHCA	5,243	5,374	98	7.0
	Nebo Creek	BHCA	7,137	26,277	27	5.8
	Upper Green River	BHCA	3,265	58,506	6	2.1
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
COUT-C (Agency and Applicant Preferred Alternative)	Emma Park	BHCA	1,150	5,374	21	0.6
	Green River	BHCA	3,835	177,096	2	3.2
	Nebo Creek	BHCA	7,137	26,277	27	5.8
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
COUT-H	Emma Park	BHCA	893	5,374	17	0.7
	Green River	BHCA	3,835	177,096	2	3.2
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8
COUT-I	Emma Park	BHCA	653	5,374	12	0.3
	Green River	BHCA	3,835	177,096	2	3.2
	Utah Lake/Mona Lake/Tintic Valley	BHCA	4,295	429,419	1	3.8

NOTES:
BHCA = Bird Habitat Conservation Area
IBA = Important Bird Area

Impacts Common to All COUT Alternative Routes

All COUT alternative routes cross the Utah Lake/Mona Lake/Tintic Valley BHCA in the vicinity of the Clover Substation. This BHCA includes a wetlands complex in the floodplain of West Creek, above the location where it enters Mona Reservoir. Construction of the Project in this location would increase the collision risk for birds traveling along West Creek and its associated wetlands. Agriculture is present to

the north and south of the COUT alternative routes, which may increase the total number of daily flights across the right-of-way as birds travel between resting sites in wetlands and foraging activities in agricultural fields.

Alternative COUT-A

Affected Environment (Colorado)

Alternative COUT-A in Colorado predominantly crosses big sagebrush communities. Smaller areas of developed/disturbed, invasive, pinyon-juniper, and shrub steppe vegetation communities also are crossed by these alternative routes.

No identified bird conservation areas are crossed by Alternative COUT-A in Colorado.

Raptor nest data are not available for analysis in Colorado (Table 3-142). Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

TABLE 3-142
ALTERNATIVE ROUTE COMPARISON
FOR RAPTOR NEST INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

	Number of Nests within 0.5 Mile						
Alternative Route	**Northern Harrier**	**Osprey**	**Sharp-shinned Hawk**	**Cooper's Hawk**	**Red-tailed Hawk**	**Prairie Falcon**	**American Kestrel**
COUT-A	0	0	0	0	19	1	0
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*19*	*1*	*0*
COUT-B	0	0	0	0	19	1	0
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*19*	*1*	*0*
COUT-C (Agency and Applicant Preferred Alternative)	0	0	0	0	10	5	2
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*10*	*5*	*2*
COUT-H	0	0	0	0	6	5	2
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*6*	*5*	*2*
COUT-I	0	0	0	0	6	5	2
Colorado	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Utah	*0*	*0*	*0*	*0*	*6*	*5*	*2*

NOTE: The table is based on the best available migratory bird data for each state (i.e., data not collected with the intention of reporting an exhaustive survey of the entire Project area). Additional raptor nests are assumed to be present in the Project area.

Environmental Consequences (Colorado)

Approximately 68 percent of the vegetation affected by Alternative COUT-A in Colorado would be big sagebrush (including 293 acres of long-term disturbance), approximately 17 percent would be shrub/shrub steppe (including 73 acres of long-term disturbance), and approximately 14 percent would be invasive (including 60 acres of long-term disturbance). Thus, much of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in

particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-A in Colorado are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7, Appendix J, associated with vegetation communities crossed by this alternative route.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Affected Environment (Utah)

Alternative COUT-A in Utah predominantly crosses agriculture, big sagebrush, mountain shrub, pinyon-juniper, and shrub steppe vegetation communities. Smaller areas of alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative COUT-A crosses the Green River in the Upper Green River BHCA, the Duchesne River in the Duchesne River BHCA, the Upper Strawberry Watershed UT12 IBA and Upper Strawberry-Avintaquin BHCA, the Nebo Creek BHCA, and the Utah Lake/Mona Lake/Tintic Valley BHCA.

The miles of all identified bird conservation areas crossed by Alternative COUT-A in Utah are listed in Table 3-141.

Table 3-142 lists the number of known raptor nests recorded within 0.5 mile of the COUT alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 36 percent of the vegetation affected by Alternative COUT-A in Utah would be big sagebrush (including 1,183 acres of long-term disturbance), approximately 12 percent would be shrub/shrub steppe (including 392 acres of long-term disturbance), approximately 15 percent would be pinyon-juniper (including 484 acres of long-term disturbance), and approximately 10 percent would be mountain shrub (including 314 acres of long-term disturbance). Additionally, approximately 12 percent would be agriculture (including 376 acres of long-term disturbance). Nearly half of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation, and much of the remainder of the alternative route would affect montane forest and shrub communities. This may contribute to downward population trajectories for declining sagebrush species in particular and would contribute to fragmentation of forested areas. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-A in Utah are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT-A crosses the Green River in the Upper Green River BHCA. The proposed crossing location supports riparian shrubs and a small number of riparian trees, but elevated terrain at the crossing would likely allow the riparian area to be spanned without the need for removal of riparian vegetation. The Project would increase the risk of collision at this location, particularly given the proximity to Ouray NWR and its numerous wetlands. West of the BHCA, this alternative route also would be located in proximity to wetlands and agriculture north of Pelican Lake.

Alternative COUT-A crosses numerous small streams and agricultural fields in the Uinta Basin between the Green River and the Duchesne River. These areas are anticipated to support high levels of bird use, particularly by waterfowl and other birds at a relatively high risk of collision. Alternative COUT-A crosses the Duchesne River in the Duchesne River BHCA in a location where the floodplain contains agricultural fields and a small number of riparian trees. Elevated terrain at the proposed crossing location is anticipated to allow the riparian vegetation to be spanned without removal of trees.

Alternative COUT-A crosses the Strawberry River below Strawberry Reservoir in a narrow canyon. This area is in the Upper Strawberry Watershed UT12 IBA and Upper Strawberry-Avintaquin BHCA. Elevated terrain will require that the transmission line be located well above the riverbed, which may minimize the collision risk for resident and nesting birds along the river. However, this would not minimize the collision risk for other birds that are traveling or migrating along the river corridor, such as waterfowl associated with Strawberry Reservoir. An existing transmission line crosses the Strawberry River nearby but approximately 0.25 mile from the location proposed for the Project. This may not provide benefits related to increased visibility of multiple colocated transmission lines. The IBA and BHCA also are recognized for supporting forest birds that may be affected by the loss of trees required by vegetation management in forested areas.

Alternative COUT-A crosses the Nebo Creek BHCA, but in a location without riparian vegetation. Sagebrush-obligate and mountain shrub birds would be affected by habitat loss in the BHCA.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-B in Colorado would be the same as Alternative COUT A, as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Alternative COUT-B in Utah predominantly crosses agriculture, big sagebrush, mountain shrub, pinyon-juniper, and shrub/steppe communities. Smaller areas of, alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative COUT-B crosses the Green River and Upper Green River BHCA in an identical location to Alternative COUT-A. Alternative COUT-B follows a similar alignment to Alternative COUT-A through much of the Uintah Basin, but crosses the Duchesne River and Duchesne River BHCA in a different location. Alternative COUT B crosses the Emma Park BHCA. Alternative COUT-B crosses the Nebo

Creek BHCA and Utah Lake/Mona Lake/Tintic Valley BHCA in identical locations to Alternative COUT-A.

The miles of all identified bird conservation areas crossed by Alternative COUT-B in Utah are listed in Table 3-141.

Table 3-142 lists the number of known raptor nests recorded within 0.5 mile of the COUT alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 33 percent of the vegetation affected by Alternative COUT-B in Utah would be big sagebrush (including 1,119 acres of long-term disturbance), approximately 13 percent would be shrub/shrub steppe (including 452 acres of long-term disturbance), approximately 18 percent would be pinyon-juniper (including 593 acres of long-term disturbance), and approximately 11 percent would be mountain shrub (including 360 acres of long-term disturbance). Additionally, approximately 17 percent would be agriculture (including 288 acres of long-term disturbance). Nearly half of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation, and much of the remainder of the alternative would affect montane forest and shrub communities. This may contribute to downward population trajectories for declining sagebrush species in particular and would contribute to fragmentation of forested areas. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-B in Utah are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Potential impacts on the Green River and Upper Green River BHCA and the Nebo Creek BHCA would be identical to those described for Alternative COUT-A. Potential impacts on the Utah Lake/Mona Lake/Tintic Valley BHCA would be identical to those described for all COUT alternative routes.

Alternative COUT-B crosses the Emma Park BHCA, which is identified as supporting wet meadows used by a number of shorebird and wading bird species, as well as greater sage-grouse. All of these species or groups of species are identified as being at a high risk of collision due to their flocking behavior or low flight heights. Alternative COUT-B would increase the collision risk for these bird species in the BHCA.

Alternative COUT-B crosses the Duchesne River and Duchesne River BHCA in a location similar to that described under Alternative COUT-A with a matrix of scattered riparian trees and agricultural fields. However, the floodplain is relatively wide at this point and terrain does not support spanning all riparian vegetation. As a result, Alternative COUT-B would result in the removal of a small number of riparian trees for vegetation management needs. The potential for increased collision risk along the Duchesne River and nearby wetlands would be similar between Alternative COUT-B and COUT-A.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

No identified bird conservation areas are crossed by Alternative COUT-C in Colorado.

Raptor nest data are not available for analysis in Colorado (Table 3-142). Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Colorado)

Approximately 73 percent of the vegetation affected by Alternative COUT-C in Colorado would be big sagebrush (including 331 acres of long-term disturbance), approximately 16 percent would be shrub/shrub steppe (including 74 acres of long-term disturbance), and approximately 8 percent would be invasive (including 38 acres of long-term disturbance). Thus, much of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation. This may contribute to downward population trajectories for declining sagebrush species in particular. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-C in Colorado are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, that are associated with vegetation communities crossed by this alternative route.

Alternative COUT-C in Colorado would not have any impacts on migratory bird conservation areas.

Affected Environment (Utah)

Alternative COUT-C in Utah predominantly crosses big sagebrush, mountain shrub, pinyon-juniper, and shrub steppe vegetation communities. Smaller areas of agriculture, alpine, aspen, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative COUT-C crosses the Emma Park and Green River BHCA, Nebo Creek BHCA, and Utah Lake/Mona Lake/Tintic Valley BHCA.

The miles of all identified bird conservation areas crossed by Alternative COUT-C in Utah are listed in Table 3-141.

Table 3-142 lists the number of known raptor nests recorded within 0.5 mile of the COUT alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 23 percent of the vegetation affected by Alternative COUT-C in Utah would be big sagebrush (including 797 acres of long-term disturbance), approximately 23 percent would be shrub/shrub

steppe (including 775 acres of long-term disturbance), approximately 19 percent would be pinyon-juniper (including 658 acres of long-term disturbance), and approximately 12 percent would be mountain shrub (including 414 acres of long-term disturbance). Nearly half of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation, and much of the remainder of the alternative route would affect montane forest and shrub communities. This may contribute to downward population trajectories for declining sagebrush species in particular and would contribute to fragmentation of forested areas. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-C in Utah are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Between series compensation station Siting Area E and the Green River, Alternative COUT-C crosses the White River and Willow Creek. No riparian vegetation would be affected by vegetation management at the White River crossing, but some riparian shrubs and small trees may require vegetation management at the Willow Creek crossing. The Project would result in an increased collision risk for any birds traveling along these rivers.

Alternative COUT-C crosses the Green River and Green River BHCA in a location where few riparian trees are present. Elevated terrain on the eastern side of the Green River is anticipated to allow the entire river and floodplain to be spanned at this location, and removal of riparian vegetation would not be required. The Project would result in an increased collision risk for any birds traveling along the Green River.

Alternative COUT-C crosses the Nebo Creek BHCA and Utah Lake/Mona Lake/Tintic Valley BHCA in identical locations to Alternative COUT-A.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The 345kV Bears Ears to Bonanza transmission line relocation crosses predominantly big sagebrush, and to a lesser extent shrub/shrub steppe, mountain shrub, and pinyon-juniper vegetation communities.

The majority of the impacts on migratory bird habitat from relocation would affect sagebrush-obligate birds. Types of potential impacts associated with relocating the transmission line would be similar to the effects of construction of the 500kV transmission line described in Section 3.2.9.5. Although, colocation with existing transmission lines can increase the cumulative visibility of all lines, and may serve to reduce the total collision risk.

Alternative COUT-H

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-H in Colorado would be the same as Alternative COUT-C, as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Alternative COUT-H predominantly crosses aspen, big sagebrush, mountain shrub, pinyon-juniper, and shrub steppe vegetation communities. Smaller areas of agriculture, alpine, barren/sparsely vegetated, developed/disturbed, grassland, invasive, montane forest, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative COUT-H crosses the Green River and Green River BHCA, Emma Park BHCA, Nebo Creek BHCA, and Utah Lake/Mona Lake/Tintic Valley BHCA. Alternative COUT-H crosses the San Pitch River in a valley dominated by agricultural activities with bands of riparian woodland along the river channel.

The miles of all identified bird conservation areas crossed by Alternative COUT-H in Utah are listed in Table 3-141.

Table 3-142 lists the number of known raptor nests recorded within 0.5 mile of the COUT alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 22 percent of the vegetation affected by Alternative COUT-H in Utah would be big sagebrush (including 704 acres of long-term disturbance), approximately 24 percent would be shrub/shrub steppe (including 760 acres of long-term disturbance), approximately 17 percent would be pinyon-juniper (including 554 acres of long-term disturbance), approximately 9 percent would be aspen (including 290 acres of long-term disturbance), and approximately 7 percent would be mountain shrub (including 217 acres of long-term disturbance). Nearly half of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation, and much of the remainder of the alternative would affect montane forest and shrub communities. This may contribute to downward population trajectories for declining sagebrush species in particular and would contribute to fragmentation of forested areas. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-H in Utah are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT-H crosses the Green River and Green River BHCA in identical locations to Alternative COUT-C. Similar to Alternative COUT-B, Alternative COUT-H crosses the Emma Park BHCA and create an increased risk of collision for bird species known to be at high risk. However, Alternative COUT-H crosses a much smaller area of this BHCA.

Alternative COUT-H crosses the San Pitch River in an area dominated by agricultural activities with small amounts of riparian woodland present. This would increase the risk of collision for birds moving daily from the vicinity of the river to forage in farmlands, as well as birds migrating along the river corridor.

Alternative COUT-H would have the same effects on the Utah Lake/Mona Lake/Tintic Valley BHCA as Alternative COUT-A.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and

spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on migratory bird resources from the Bears Ears to Bonanza 345kV transmission line relocation would be the same as Alternative COUT-C.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-I in Colorado would be the same as Alternative COUT-C, as the two alternative routes follow the same alignment through the state.

Affected Environment (Utah)

Alternative COUT-I in Utah predominantly crosses aspen, barren/sparsely vegetated, big sagebrush, pinyon-juniper, and shrub steppe vegetation communities. Smaller areas of agriculture, alpine, developed/disturbed, grassland, invasive, montane forest, mountain shrub, riparian, water, and wetland vegetation communities also are crossed by this alternative route.

Alternative COUT-I crosses the Green River and Green River BHCA, Emma Park BHCA, and Utah Lake/Mona Lake/Tintic Valley BHCA.

The miles of all identified bird conservation areas crossed by Alternative COUT-I in Utah are listed in Table 3-141.

Table 3-142 lists the number of known raptor nests recorded within 0.5 mile of the COUT alternative routes in Utah. Raptor nest surveys would be conducted prior to construction to identify nest locations where seasonal and spatial restrictions may be required to protect nesting raptors.

Environmental Consequences (Utah)

Approximately 21 percent of the vegetation affected by Alternative COUT-I in Utah would be big sagebrush (including 798 acres of long-term disturbance), approximately 30 percent would be shrub/shrub steppe (including 1,147 acres of long-term disturbance), approximately 16 percent would be pinyon-juniper (including 595 acres of long-term disturbance), approximately 6 percent would be aspen (including 248 acres of long-term disturbance), and approximately 5 percent would be mountain shrub (including 176 acres of long-term disturbance). More than half of the impacts on migratory bird habitat from this alternative route would affect sagebrush-obligate birds and species associated with shrub/shrub steppe vegetation, and much of the remainder of the alternative route would affect montane forest and shrub communities. This may contribute to downward population trajectories for declining sagebrush species in particular, and would contribute to fragmentation of forested areas. The alternative route would have a minor contribution to migratory bird habitat loss in other vegetation communities.

Potential impacts on all vegetation communities that provide habitat for migratory birds for Alternative COUT-I in Utah are listed in Tables 3-61, 3-63, and 3-64. These impacts would affect any birds present but may have the strongest effects on birds listed in Table J-7 , Appendix J, associated with vegetation communities crossed by this alternative route.

Alternative COUT-I crosses the Green River and Green River BHCA in identical locations to Alternative COUT-C. Similar to Alternative COUT-B, Alternative COUT-I crosses the Emma Park BHCA and creates an increased risk of collision for bird species known to be at high risk. However, Alternative COUT-I crosses a much smaller area of this BHCA and also would cross a smaller area of this BHCA than Alternative COUT-H.

Alternative COUT-I crosses the Utah Lake/Mona Lake/Tintic Valley BHCA in identical locations to Alternative COUT-A.

Raptor nest surveys would be conducted prior to construction to identify any nests that could be affected by construction of the Project. Design Features 3 and 8 (Table 2-8) and species-specific seasonal and spatial restrictions on construction and maintenance activities (Selective Mitigation Measure 12) would be applied to protect nesting raptors in the Project area.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on migratory bird resources from the Bears Ears to Bonanza 345kV transmission line relocation would be the same as Alternative COUT-C.

3.2.9.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A is located on the Wyoming/Colorado state line, primarily in sagebrush, grassland, and pinyon-juniper vegetation communities. Siting Area A includes portions of the Powder Rim IBA and BHCA, and the Routt and Moffat County Uplands BHCA.

Environmental Consequences

Potential impacts on migratory bird management from construction of the series compensation station in the Powder Rim IBA and BHCA and the Routt and Moffat County Uplands BHCA would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance. The series compensation station is not anticipated to create a collision hazard for birds.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B is located where Alternative WYCO-B diverges in Nine Mile Basin in Colorado. Siting Area B is almost entirely in the Routt and Moffat County Uplands BHCA.

Environmental Consequences

Potential impacts on migratory bird management from construction of the series compensation station in the Routt and Moffat County Uplands BHCA would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance. The series compensation station is not anticipated to create a collision hazard for birds.

Siting Area C – Maybell

Affected Environment

Siting Area C includes a portion of the Yampa River BHCA in Moffat County. However, constructing the series compensation station in the Yampa River floodplain or BHCA is not desirable from an engineering standpoint, and the BHCA is not likely to be affected by habitat loss in Siting Area C.

Environmental Consequences

Potential impacts on migratory birds from construction of the series compensation station in Siting Area C would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance. The series compensation station is not anticipated to create a collision hazard for birds.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C has the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C has the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C has the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

In Colorado, Siting Area D would be located in sagebrush, shrub/shrub steppe and pinyon-juniper vegetation communities. Siting Area D is largely in the Routt and Moffat County Uplands BHCA and also includes a small portion of the Yampa River in Moffat County BHCA.

Environmental Consequences

Potential impacts on migratory bird management from construction of the series compensation station in the Routt and Moffat County Uplands BHCA would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance. The series compensation station is not anticipated to create a collision hazard for birds.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F has the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F has the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F has the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

In Utah, Siting Area G would be located in an area where vegetation is predominantly barren or shrub/shrub steppe, interspersed with pinyon juniper woodlands. No bird conservation areas are identified in Siting Area G.

Environmental Consequences

Potential impacts on migratory birds from construction of the series compensation station in Siting Area G would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

In Utah, Siting Area F would be located in an area previously disturbed by agriculture and U.S. Highway 40 in the vicinity of Roosevelt. No bird conservation areas are identified in Siting Area F.

Environmental Consequences

Potential impacts on migratory birds from construction of the series compensation station in Siting Area F would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B has the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

In Utah, Siting Area E would be located in an area previously disturbed by oil and gas development and the Bonanza Power Plant, where vegetation communities are primarily sagebrush and shrub/shrub steppe. No bird conservation areas are identified in Siting Area F.

Environmental Consequences

Potential impacts on migratory birds from construction of the series compensation station in Siting Area E would be similar to those associated with construction of the transmission line in relation to habitat loss and disturbance.

Alternative COUT-H

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternative COUT-H has the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

Alternative COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternative COUT-I has the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.10 Fish and Aquatic Resources

3.2.10.1 Introduction and Regulatory Framework

The Fish and Aquatic Resources section addresses potential impacts on fish and aquatic species—including special status fish and aquatic species potentially affected by the proposed Project, the No Action Alternative, and various alternative routes—during the construction, operation, and maintenance of the Project. Special status fish and aquatic species are those federally listed as either endangered, threatened, or candidates for protection under the ESA or those considered sensitive by the BLM or USFS.

3.2.10.1.1 Regulatory Framework

Implementation of the Project would be consistent with statutes, regulations, plans, programs, and policies of affiliated tribes, federal agencies, and state and local governments.

Regulations that directly influence fish and aquatic species decisions in the Project area are implemented by the FWS, BLM, USFS, and state wildlife agencies including the WGFD, CPW (formerly CDOW), and UDWR. Relevant regulations that the Project must comply with for special status fish and aquatic species as well as game fish are presented below.

Federal

- BLM Manual 1120 provides policy and direction regarding fish and wildlife management on BLM administered lands.
- BLM Manual 6840 provides BLM policy and direction concerning sensitive species.
- BLM RMPs Management Framework Plans for the Rawlins (2008) Field Office in Wyoming for Colorado, including White River (1997, as amended), Little Snake (2011, as amended), and Grand Junction (2015) Field Offices; for Utah, including Richfield (2008), Fillmore (1987), Moab (2008), Price (2008) and Vernal (2008) Field Offices, and Salt Lake District (1990), specify regulations and goals for management of BLM-administered lands and set restrictions to protect fish and wildlife and the habitats on which they depend.
- The ESA (16 U.S.C. 1531 et. seq.), as amended, provides broad protection for species of fish, wildlife, and plants listed as threatened or endangered by the FWS. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. All federal agencies in consultation with and with the assistance of the FWS also must use their authorities in furtherance of the purposes of the ESA by carrying out programs for the conservation of listed species. All federal agencies, in consultation with, and with the assistance of, the FWS must ensure any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of an endangered, threatened, or proposed listed species or result in destruction or adverse modification of a critical habitat of a species. Agencies are required to use the best scientific and commercial data available to fulfill this charge.
- Executive Order 11990 of 1977: This Executive Order requires agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the beneficial values of wetlands.
- FLPMA, as amended, consolidates and articulates BLM and USFS management responsibilities and governs most uses of the federal lands, including authorization to grant or renew rights-of-way. In accordance with FLPMA, BLM and USFS must make land-use decisions based on principles of multiple use and sustained yield. As such, a grant of right-of-way must be limited to its necessary use and must contain terms and conditions that reflect the agencies' management responsibilities under FLPMA, including minimizing impacts on fish and wildlife habitat.
- The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution. Growing public awareness and concern for controlling water pollution led to sweeping amendments in 1972. As amended in 1977, the law became commonly known as the CWA, codified generally as 33 U.S.C. 1251 et. seq. The CWA's objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Individual sections of the Act maintain and protect the nation's water resources.
- The Fish and Wildlife Coordination Act of 1934 directs that fish and wildlife resources receive equal consideration with other resources in water resource development programs.
- Fish and Wildlife Coordination Act of 1956. 43 CFR 24.6 says "By reason of the Congressional policy of state-federal cooperation and coordination in the area of fish and wildlife conservation, State and Federal agencies have implemented cooperative agreements for a variety of fish and wildlife programs on Federal Lands." Utah has entered into conservation agreements with several

federal agencies for the conservation and management of several sensitive species that occur in the Project area.

- The Platte River Recovery Implementation Program, established in 1997, implements actions designed to assist in the conservation and recovery of the target species and their associated habitats along the central and lower Platte River in Nebraska through a basin-wide cooperative approach agreed to by the states of Wyoming, Nebraska, and Colorado, as well as the USDI. The Platte River Recovery Implementation Program addresses the adverse impacts of existing and certain new water-related activities on the Platte River target species and associated habitats, and provides ESA compliance for effects on the target species.
- The Multiple-Use, Sustained-Yield Act of 1960, as amended, recognizes and clarifies USFS authority and responsibility regarding the management of fish and wildlife.
- The Organic Administrative Act of 1897, as amended, recognizes watersheds as systems to be managed with care to sustain their hydrologic function.
- USFS LRMPs, as amended, for the Ashley (1986), Manti-La Sal (1986), and Uinta (2003) National Forests identify goals for forest health and constraints on resource use to meet these goals. LRMPs also identify project restrictions to protect fish and wildlife and MIS for each forest.
- USFS Manual 2670 directs each Regional Forester to designate sensitive species on public lands administered by USFS. Per the manual, sensitive species are defined "as plant or animal species identified by a Regional Forester for which population viability is a concern, as evidenced by a significant current or predicted downward trend in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce an existing distribution of the species."
- Upper Colorado Endangered Fish Recovery Program directs that any amount of water removed from the Colorado River system is considered to be a depletion of water, and amounts greater than 0.1 acre-feet per year require formal consultation with the FWS for downstream impacts on threatened and endangered species.

State

Wyoming

- Wyoming State Code Section 23-1-101 defines wildlife as all wild mammals, birds, fish, amphibians, reptiles, crustaceans and mollusks, and wild bison designated by the Wyoming Game and Fish Commission and the Wyoming livestock board in the state.
- Wyoming State Code Section 23-1-103 of the Wyoming State Code states all wildlife is the property of the State of Wyoming and directs the control, propagation, management, protection and regulation of wildlife in the state.
- Wyoming State Code Section 23-1-302 empowers the Wyoming Game and Fish Commission to manage big game hunting seasons, take and areas in the state and to develop, improve, and maintain lands and waters for the management and protection of all wildlife.
- Wyoming Game and Fish Commission, Chapter 52, Section 9 indicates that all nongame wildlife and fish can only be taken from licensed lands and waters.
- The Wyoming SWAP 2005 and revised in 2010 is a coordinated, comprehensive conservation strategy designed to maintain the health and diversity of wildlife, including species with low and declining populations in the state of Wyoming.

Colorado

- Colorado State Code Statute 23-2-101 provides the State's intent to protect wildlife in the state of Colorado under the Nongame, Endangered, or Threatened Species Conservation Act.
- Colorado State Code Statute 23-2-104 regulates the take, possession, transportation, exportation, processing, sale or offering for sale, or shipment as may be deemed necessary to manage nongame wildlife in the state.
- C.R.S. 33-1-101 prohibits the taking, hunting, or possession of animals deemed property of the State or wildlife taken in violation of state, federal, or non-U.S. law (including bald and golden eagles). It is also illegal to have in one's possession any nonnative or exotic species.
- The Colorado SWAP 2006 is a comprehensive management strategy developed by Colorado Division of Wildlife and the state of Colorado to conserve native species populations and habitats, and prevent additional federal listings.

Utah

- Utah State Code Section 23-15-2 establishes that all wildlife including but not limited to wildlife on public or private land or in public or private waters in the state, falls in the jurisdiction of the UDWR. Utah Code Ann. 23-15-2 and 23-13-3 (Repl. Vol. 1991).
- Utah State Code Section 23-14-1 of the Utah State Code directs the UDWR to protect, propagate, manage, conserve, and distribute protected wildlife throughout the state. This statute also authorizes UDWR to identify and delineate crucial seasonal wildlife habitats.
- Utah State Code Section 23-14-18 of the Utah State Code provides for the establishment of hunting/fishing seasons, locations and harvest limits.
- Utah State Code Section 23-14-19 establishes that the Wildlife Board shall exercise its powers by making rules and issuing proclamations and orders pursuant to this code.
- Utah State Code Title 23-22-1 indicates the UDWR may enter into cooperative agreements and programs with other state agencies, federal agencies, states, educational institutions, municipalities, counties, corporations, organized clubs, landowners, associations, and individuals for purposes of wildlife conservation. All parties to this agreement recognize they each have specific statutory responsibilities that cannot be delegated, particularly with respect to the management and conservation of wildlife, its habitat and the management, development and allocation of water resources. Nothing in this agreement or strategy is intended to abrogate any of the parties' respective responsibilities. This agreement is subject to and is intended to be consistent with all applicable federal and state laws and interstate compacts.
- UAC R657-48 directs the UDWR to maintain a Utah Sensitive Species List that identifies plant and animal species (1) listed, or candidates for listing, pursuant to the ESA; (2) for which a conservation agreement is in place; or (3) whose population viability is threatened in Utah (i.e., wildlife species of concern). Timely and appropriate conservation actions implemented on behalf of species listed on the Utah Sensitive Species List will preclude the need to list these species
- Utah Comprehensive Wildlife Conservation Strategy directs the integration and implementation of ongoing and planned management actions that will conserve native species and thereby prevent the need for additional listings under the ESA. The regulatory framework for protection of fish and aquatic resources provides that state agencies manage aquatic species. The FWS would have jurisdiction over the management of ESA-listed aquatic species, and that BLM would continue to assist in managing aquatic habitats in coordination with the FWS and appropriate state wildlife agencies.

3.2.10.2 Issues Identified for Analysis

Potential effects on fish and aquatic resources resulting from construction, operation, and maintenance of the proposed Project are summarized in Table 3-143.

TABLE 3-143
FISH AND AQUATIC RESOURCE ISSUES IDENTIFIED FOR ANALYSIS

Issue Identified	Analysis Considerations
Potential impacts on federally listed threatened, endangered, proposed, and candidate fish species: ▪ Direct and indirect loss of habitat ▪ Direct and indirect impacts on individuals ▪ Short- and long-term impacts on populations	▪ Determining proximity of critical habitat to Project rights-of-way ▪ Determining proximity of known populations to Project rights-of-way ▪ Conducting qualitative analyses of direct and indirect threats to individuals and habitat from Project activities
Potential impacts on Bureau of Land Management and U.S. Forest Service sensitive fish, aquatic species, and conservation species: ▪ Direct and indirect loss of habitat ▪ Direct and indirect impacts on individuals ▪ Short- and long-term impacts on populations	▪ Determining proximity of known or potential habitat to Project rights-of-way ▪ Determining proximity of known populations to Project rights-of-way ▪ Conducting qualitative analyses of direct and indirect threats to individuals and habitat from Project activities
Potential impacts on game fish and other aquatic organisms: ▪ Direct and indirect loss of habitat ▪ Direct and indirect impacts on individuals ▪ Short- and long-term impacts on populations	▪ Determining proximity of known or potential habitat to Project rights-of-way ▪ Determining proximity of known populations to Project rights-of-way ▪ Conducting qualitative analysis of direct and indirect threats to individuals and habitat from Project activities

3.2.10.3 Regional Setting

The Project area spans 3 states, 6 ecoregions, and 23 subbasins. In these drainage areas, 10 major rivers—including the Medicine Bow, Little Snake, White, Green, Yampa, North Platte, Price, Duchesne, San Pitch, and Uinta rivers—are crossed by Project alternative routes (USGS 2009). Additionally, numerous perennial and intermittent streams potentially supporting fish and aquatic resources are crossed by Project alternative routes. Section 3.2.4 provides a summary of streams, lakes, reservoirs, ponds, and other aquatic habitats present in the Project area and describes how they are spatially recognized through the HUC system.

3.2.10.3.1 Aquatic Habitats

The geographic scope of analysis for this section is 1 mile on either side of the reference centerline and includes critical habitats designated for federally listed endangered fish species and general habitats supporting BLM, USFS, and state-listed sensitive species, game fish, and other aquatic species (described later in this section). Aquatic habitats identified in the Water Resources section (Section 3.2.4) are assumed to have the potential to support fish and/or aquatic species. Therefore, those waters are being included in this discussion and will be analyzed as aquatic habitats. The geographic scope of analysis for water resources consisted of a 328-foot buffer on either side of a reference centerline. This buffer width was chosen because 328 feet is the most conservative avoidance buffer regulating ground-disturbing activities on federal lands. The buffer width is derived from the Utah BLM Riparian Policy (BLM 2010a) and was agreed to be a sufficient scope of analysis by agency representatives during the interdisciplinary team meetings.

The geographic scope of analysis for fish and aquatic resources (resources identified within 1 mile on either side of alternative route reference centerlines) as well as water resources (resources identified

within 328 feet of alternative reference centerline) are hereafter referred to as the alternative route study corridors. Aquatic habitats identified in the alternative route study corridors include a mixture of streams, lakes, ponds, reservoirs, springs, wetlands, and riparian areas that support or have the potential to support aquatic species. These water resources can be grouped into three habitat categories for this analysis: lentic habitats, lotic habitats, and wetland habitats. Lentic and lotic habitats were derived from the NHD (USGS 2010a). Wetland habitats consist of a combination of the NWI (FWS 2012a) and the SWReGAP dataset (USGS 2010c).

Lotic Habitats

Lotic waters are characterized by having flowing water in a state of continual physical change (Giller and Malmqvist 1998). Lotic waters in the alternative route study corridors include rivers, perennial streams, and intermittent streams and show a large range of variability mainly due to variations in terrain, aspect, geology, and precipitation specific to the drainage areas from which they originate (refer to Section 3.2.4 for classification of lotic waters). At a finer scale, lotic habitats exhibit a high degree of spatial and temporal heterogeneity (microhabitats) that support a wide variety of biotic (living) interactions amongst plants, animals, and micro-organisms as well as abiotic (nonliving) physical and chemical interactions (Campbell et al. 2009).

Lotic habitats in the alternative route study corridors typically support cold-water fish and aquatic species. The greatest diversity of fish and aquatic species found in the alternative route study corridors, including game fish, non-game fish, amphibians, invertebrates, and those listed as endangered and sensitive, are found in cold water lotic habitats.

As previously mentioned, lotic habitats include both perennial and intermittent streams. Because all fish species with the potential to occur in the alternative route study corridors require a perennial source of water for all or most of their life, it can be assumed that most intermittent streams in the Project area do not support fish species. However, intermittent streams do provide habitats for a number of amphibians and invertebrates during all or part of their life cycle.

Lentic Habitats

Lentic habitats are characterized by having standing or relatively still water contained in a closed or semi-closed impoundment. Lentic habitats in the Project area include lakes, reservoirs, and ponds (refer to Section 3.2.4 for classification of lentic waters). There are many lentic habitats occurring in the alternative route study corridors ranging from high alpine lakes in the Big Sandy, Blacks Fork, and Duchesne subbasins to warm water lakes and ponds of the Little Snake and Lower Green river subbasins. Lentic habitats support a wide variety of fish and aquatic species including those species requiring cold-water habitats and those that require warm-water habitats.

Wetland Habitats

Wetland habitats are found throughout the Project area and include wetlands identified in the NWI database and riparian areas identified in the SWReGAP database. These habitats are dependent on a consistent and usually perennial source of hydrology such as shallow groundwater, surface water, springs, seeps, or an anthropogenic source such as irrigation. Wetland and riparian habitats support a high level of structural diversity. These habitats are used by a multitude of avian and terrestrial wildlife as well as fish, amphibians, and invertebrates. For an in depth discussion of the type, classification, distribution, and relative abundance of wetlands in the alternative route study corridors refer to Section 3.2.4.

3.2.10.4 Study Methodology

Information presented in this section includes (1) descriptions of fish and aquatic resource-specific data collected for the analysis, (2) temporal and geographic scope of analysis, (3) discussion of resource vulnerability and potential effects resulting from the Project, and (4) evaluation of the level of these effects, the degree to which these effects can be mitigated, and where residual effects may potentially occur. Results of the analysis are presented in Section 3.2.10.5.

3.2.10.4.1 Inventory

Detailed information was collected from various sources to provide a database of critical habitats, general habitats, species occurrences, and spatial layers for fish and aquatic resources in the alternative route study corridors.

Background data were collected from the following sources:

- WYNDD, CNHP, and UNHP
- BLM and USFS land and resource management plans
- BLM, USFS, and state fisheries and aquatic resource databases
- The WBD and the NHD
- FWS National Wetlands Inventory
- USGS 1:24,000 topographic maps
- Personal communications with local, state, and federal resource specialists.
- Project description, including design features of the Proposed Action for environmental protection

Natural history information for special status fish, amphibian, and invertebrate species were collected from NatureServe, WWF Wildfinder, and IUCN Red List. General descriptions of habitats requirements, distribution, and special status designation for special status fish and aquatic species considered for this analysis are presented in this section. For detailed life histories of special status fish and aquatic species analyzed in the Project area, refer to Appendix J.

In total, 86 federal or state-listed special status fish and aquatic species were evaluated for the potential to occur in the alternative route study corridors (Appendix J). Forty-two species were eliminated from further consideration due to a lack of suitable habitat or because documented occurrences of those species are absent. Of the remaining federal or state-listed special status fish and aquatic species, 43 have been documented in or have potentially suitable habitat in the alternative route study corridors, including 26 fish, 6 amphibians, and 11 aquatic invertebrates. Of the 43 fish and aquatic species being analyzed, 10 fish and 3 aquatic invertebrate species inhabit the Platte River. As proposed, the Project does not cross any known or suitable habitat for the Platte River species. These fish and invertebrates are included in the analysis by request of the BLM resource specialists in Wyoming pursuant to the Wyoming State Action Plan for Platte River fish that requires projects potentially drawing water from the Platte River and its tributaries disclose potential impacts from water draw-down. A summary of the listing status, habitat, and general distribution for each species being carried forward for analysis is detailed in Appendix J, Table J-10.

Federally Listed Threatened, Endangered, and Candidate Fish

Four federally listed fish species occur in the alternative route study corridors. These species include the bonytail (*Gila elegans*), humpback chub (*Gila cypha*), Colorado pikeminnow (*Ptychocheilus lucius,)* and razorback sucker (*Xyrauchen texanus*). Two additional federally listed species occur in proximity to (but not in) the alternative route study corridors, the pallid sturgeon (*Scaphirhynchus albus*) and June sucker

(*Chasmtstes liorus*). These species are being carried forward in this analysis due to the potential for indirect effects on individuals or suitable habitats. Table J-10 in Appendix J includes species listed under the ESA and their federally listed status.

Endangered Species

Bonytail

Bonytail were historically common in warm-water reaches throughout the Colorado River and its larger tributaries. Bonytail inhabit mainstem riverine habitats of the Colorado River and tributaries with a strong preference for deep pools and eddies with slow to fast currents (Kaeding et al. 1986). Today, there are no known populations in Colorado. Currently, bonytail are documented to occur in the Green, White, and Yampa rivers in Utah and Wyoming, and as a recent capture confirms, in Utah's Strawberry Reservoir (CPW 2012k).

The FWS designated seven reaches of the Colorado River system as critical habitat for the species, including portions of the Colorado, Green, and Yampa rivers in the Upper Basin and the Colorado River in the Lower Basin, totaling 312 miles of critical habitat for the species (59 FR 13374).

Colorado Pikeminnow

Colorado pikeminnow occur in six rivers in the alternative route study corridors: Green, Yampa, Little Snake, White, Price, and Duchesne rivers. Alternative routes considered for the Project cross designated critical habitat for Colorado pikeminnow in the Yampa, Green, and White rivers in Colorado and Utah. Known spawning areas for the species are located in the Three Fords Canyon and Gray Canyon reaches of the Green River (Carbon and Uintah counties, Utah) and the lower 20 miles of the Yampa River (Moffat County, Colorado).

The FWS designated six reaches of the Colorado River System as critical habitat, including portions of the Colorado, Green, Yampa, White, and San Juan rivers, totaling 1,148 miles of critical habitat for the species (59 FR 13374).

Humpback Chub

Humpback chub mainly occur in river canyons where they use a variety of habitats including deep pools, eddies, upwells near boulders, and areas near steep cliff faces. Young and spawning adults are generally found in sandy runs and backwaters (FWS 2002a). Currently, there are six known self-sustaining populations. Five occur in the Upper and one in the Lower Colorado Basin Recovery Units. No known self-sustaining populations exist in the alternative route study corridors but potentially suitable habitat is present. Thus, this species is carried forward in the analysis.

The FWS designated seven reaches of the Colorado River system as critical habitat including portions of the Colorado, Green, and Yampa rivers in the Upper Basin and portions of the Colorado and Little Colorado rivers in the Lower Basin, totaling 379 miles of critical habitat for the species (59 FR 13374).

June Sucker

The June sucker was proposed for listing as endangered under the ESA in 1984, with critical habitat proposed in the lower Provo and Spanish Fork rivers (49 FR 27183-27188). The listing was finalized in 1986, although the Spanish Fork River was removed from the final critical habitat designation (51 FR 10851-10857). No designated critical habitat is present in or downstream from the Project area. The species may spawn in the lower reaches of the Spanish Fork River and the alternative routes cross the river and its tributaries (Abate 2015).

Razorback Sucker

Razorback Sucker is endemic to the Colorado River Basin, found primarily in Utah. Historically, razorback sucker was widely distributed and abundant in the Colorado River and major tributaries from Utah to northern Mexico.

In the alternative route study corridors, razorback sucker is found in the Green and Yampa rivers. Designated critical habitat in the Green, Yampa, Duchesne, and White rivers also occurs in the alternative route study corridors (FWS 2002b).

Pallid Sturgeon

Pallid sturgeon was listed as endangered in 1990 (55 FR 36641) and a recovery plan was published in 1993 (Dryer and Sandvol 1993); however, critical habitat has not been designated for this species. Pallid sturgeon is included in the analysis due to the consideration of potential water depletions in the Platte River drainage during construction of the Project. Alternative routes of the proposed Project do not cross habitat for this species. This species occurs in the Lower Platte River downstream of the mouth of the Elkhorn River. Pallid sturgeon is a bottom-dweller that prefers areas with strong current and firm sandy bottoms in the main channel of large turbid rivers.

Species Petitioned for Federal Listing

Boreal toad (*Bufo boreas boreas)* and Columbia spotted frog (*Rana luteiventris)* are petitioned for listing under the ESA and are identified by the BLM, USFS, and states as special status species, and will be further described in the following section.

BLM, USFS, and State-Listed Sensitive Species

Special Status Fish Species

Fifteen BLM, USFS, and state-listed special status fish are found in lentic and lotic aquatic habitats in the Project area. Known occurrences and status are listed in Table J-10 of Appendix J; species accounts are included in Appendix J. Two trout species, including the Bonneville cutthroat trout (*Oncorhynchus clarkii Utah)* and Colorado River cutthroat (*Oncorhynchus clarkii pleuriticus*), are listed by the BLM, USFS, and the states of Utah, Wyoming, and Colorado as sensitive species with existing conservation agreements. Bluehead sucker (*Castostomus discobolus*), flannelmouth sucker (*C. latipinnis*), and roundtail chub (*Gila robusta*) have conservation agreements in Utah and are listed sensitive species. Southern Leatherside chub (*Lepidomeda* aliciae) is a BLM-and USFS-listed sensitive species and a Utah state-listed species of concern. These six species are the only sensitive fish species with known occurrences in the study corridor and will be carried forward for analysis. Additionally, least chub (*Iotichthys phlegethontis*) is a BLM- and state-listed species in Utah with existing conservation agreements. It was formerly a candidate species for federal listing but was removed from consideration in August 2014 (79 FR 51042). It occurs in proximity to, but not in, the alternative route study corridor. Least chub is being carried forward for analysis due to the potential for indirect effects on individuals or suitable habitat.

Bluehead Sucker

The bluehead sucker is a BLM sensitive species in Wyoming, Colorado, and Utah as well as a state-listed sensitive species in Wyoming and Utah. Bluehead sucker occur in mountain streams and large rivers that are often turbid or muddy and sometimes alkaline. It is usually found in swift currents but has been found in moderate to still water with very little vegetation (UDWR 1998). Current known distribution of the bluehead sucker includes the Little Snake (Carbon County) and Green (Sweetwater County) river drainages in Wyoming; the Little Snake and Green (Moffatt County), White (Rio Blanco County), and

Colorado (Mesa County) river drainages in Colorado; and the Colorado River drainage including the Colorado (Grand County), Green (Uintah, Emery, and Grand counties), San Rafael (Emery County), Price (Carbon County), and White (Uintah County) rivers in Utah (UDWR 1998). The bluehead sucker is threatened by habitat alteration and loss, introduction of exotic fishes, and hybridization with other species of sucker (UDWR 1998). Populations of the species may be declining (UDWR 1998; WGFD 2010d). Reference centerlines are located in the known range of the bluehead sucker in Wyoming, Colorado, and Utah. The bluehead sucker is known to occur in the Project area.

Bonneville Cutthroat Trout

The Bonneville cutthroat trout is listed with BLM and USFS as a sensitive species. This trout species is managed under a conservation agreement in Utah, which is a voluntary cooperative plan among several resource management agencies designed to identify and resolve threats to the species (Lentsch et al. 2000). The goal of the conservation agreement is to significantly reduce or eliminate the threats to the Bonneville cutthroat trout that may eventually cause it to be federally listed.

Colorado River Cutthroat Trout

The Colorado River cutthroat trout is a BLM, USFS, and state-listed sensitive species in Colorado, Utah, and Wyoming (Colorado River Cutthroat Trout Coordination Team 2006).

Historically the Colorado River cutthroat trout occupied portions of the Colorado River drainage in Wyoming, Colorado, Utah, Arizona, and New Mexico (Behnke 2002). Conservation populations of this species are known to be present in streams and lakes located in five river basins in the alternative route study corridors: Upper and Lower Colorado, Upper and Lower Green, and Yampa river basins.

Flannelmouth Sucker

The flannelmouth sucker is a BLM sensitive species in Wyoming, Colorado, and Utah as well as a state-listed sensitive species in Wyoming and Utah. Flannelmouth sucker inhabit pools or streams and large rivers with little to no vegetation and clear to murky waters over rock, gravel, or mud substrate. The species was once widespread throughout the Colorado River basin but currently occupies only 45 percent of its historic range (WGFD 2010d). Threats to the species include habitat fragmentation and competition and hybridization with non-native fishes (WGFD 2010d). Current known distribution of the flannelmouth sucker includes the Little Snake (Carbon County) and Green (Sweetwater County) river drainages in Wyoming; the Little Snake and Green (Moffatt County) and Colorado (Mesa County) river drainages in Colorado; the White River (Rio Blaco County) in Colorado; and the Colorado River drainage including the Colorado (Grand County), Green (Uintah, Emery, and Grand counties), San Rafael (Emery County), and Price (Carbon County) rivers in Utah (UDWR 1998). Some reference centerlines are located in the known range of the flannelmouth sucker in Wyoming, Colorado, and Utah and the species is known to occur in the Project area.

Least Chub

The least chub is typically found in association with moderate to dense vegetation and in areas with moderate to no current (Sigler and Miller 1996). Substrates of ponds containing least chub are generally composed of silt and organic material; occasionally substrates will include clays. Least chub have historically occurred in these habitats with wide distribution in the Bonneville Basin of northwestern Utah. Least chub have been observed in the Beaver River, Provo River, tributaries of the Great Salt Lake, Sevier Lake, and Utah Lake.

The species is now limited to the Snake Valley of the Bonneville Basin, occurring on a mixture of federal, state, and private lands at five locations. Three populations are in the Snake Valley in Utah's West Desert and two are located on the eastern border of the native range near the Wasatch Range in the Sevier River drainage where the least chub prefers areas of dense vegetation in slow-moving waters with muddy substrates (Bailey et al. 2005; FWS 2012c).

Least chub known populations are not crossed by alternative routes for the proposed Project. However, there are occurrences of the species north of Nephi, Utah, near the Burraston Ponds and associated wetland complex. Tributaries of these waters are crossed by Project alternative routes; thus, this species will be carried forward for analysis in this section.

Roundtail Chub

The roundtail chub is a BLM sensitive species in Wyoming, Colorado, and Utah as well as a state-listed sensitive species in Wyoming and Utah. Roundtail chub are endemic to rivers and streams in the Colorado River drainage (Bosworth 2003). The species is threatened by fragmentation and loss of habitats and competition and predation by nonnative species. Roundtail chub currently occupy 45 percent of their historic range in the Colorado River Basin (WGFD 2010d). Current known distribution of the roundtail chub includes the Little Snake (Carbon County) and Green (Sweetwater County) river drainages in Wyoming (WGFD 2005d), the Little Snake, Green (Moffatt County), and Colorado (Mesa County) river drainages in Colorado; the White River (Rio Blaco County) in Colorado; and the Colorado River Drainage including the Colorado (Grand County), Green (Uintah, Emery, and Grand counties), and San Rafael (Emery County) rivers in Utah (UDWR 1998). Reference centerlines are located in or cross the known range of the roundtail chub in Wyoming, Colorado, and Utah. The species is likely to be present in the Project area. One known occurrence is crossed by the centerline of Link U400 where this link crosses the White River.

Southern Leatherside Chub

The southern leatherside chub (*Lepidomeda aliciae*) is a BLM- and USFS-listed sensitive fish species and a Utah state-listed species of concern. The southern leatherside chub is a small minnow native to streams and rivers of the southeastern portion of the Bonneville Basin. Observations of introduced leatherside chub populations have been found in the Strawberry, Green, and Fremont rivers in the Upper Colorado River Basin (UDWR 2009c). In Utah, the current known distribution includes Utah Lake, the Sevier and San Pitch River drainages as well as Soldier and Thistle creeks (UDWR 2009c). Reference centerlines are located in the known range of the southern leatherside chub in Utah and contain suitable habitat. The species is known to occur in the Project area.

Special-status Amphibian Species

Five BLM, USFS, and/or state-listed amphibian species are known to occur or have the potential to occur in lentic, lotic, and wetland habitats in the alternative route study corridors. These species include the boreal toad, Columbia spotted frog, Great Basin spadefoot toad (*Spea intermontana)*, northern leopard frog (*Rana pipiens*), and wood frog (*Lithobates sylvaticus)*. The Project area is in the known or predicted ranges for the Great Basin spadefoot toad and wood frog but no occurrences of these species were identified in the alternative route study corridors and thus are not carried forward for detailed analysis. Conservation agreements for the boreal toad, Columbia spotted frog, and northern leopard frog exist in Utah, and occurrences of these species have been documented in the alternative route study corridors; therefore, these three species are carried forward for detailed analysis. Detailed species descriptions, life history, and occurrence information for these species is included in Appendix J.

Boreal Toad

The boreal toad is listed as a special status species by the BLM, USFS, and the state governments in all three states crossed by the Project. This species underwent a 12-month review for listing by the FWS under the ESA. Findings of the review indicated the species was not warranted for protection under the ESA. The southern Rocky Mountain population of this species occurs from south-central Wyoming southward through the mountainous regions of Colorado and into north-central New Mexico. The toads inhabit a variety of wet habitats including marshes, wet meadows, streams, beaver ponds, glacial tarns, and lakes interspersed in subalpine forests above 8,600 feet above mean sea level.

Potentially suitable habitat for boreal toad is located near or is crossed by the alternative route study corridors. Natural Heritage data includes four records of this species within 1 mile of the alternative routes for the proposed Project area. Surveys conducted by UDWR in 2008 investigated suitable habitats in the Project area but individuals were not found. Surveys outside of but in proximity to the Project area resulted in detecting individuals in the Strawberry Reservoir area (UDWR 2009c).

Columbia Spotted Frog

The Columbia spotted frog is a BLM and USFS sensitive species in Wyoming, Colorado, and Utah. In Utah, the species is managed under a conservation agreement established in 2005 (Bailey et al. 2006). Habitat for the Columbia spotted frog includes perennial lentic and lotic aquatic habitats along the San Pitch River near Mount Pleasant, north of Fairview, and the West Creek area south of Mona, Utah. Alternative routes considered for the Project cross or are in proximity to suitable habitat for this species.

Northern Leopard Frog

The northern leopard frog, a BLM sensitive species and a state-listed special status species in Wyoming and Colorado, was petitioned for listing under the ESA. Following a 12-month review in 2011, the FWS concluded that protection under the ESA was not warranted (FWS 2011e). The current distribution of the northern leopard frog includes portions of Wyoming, Colorado, and Utah (FWS 2013b).

Habitat for the northern leopard frog includes slow-moving or still water in streams and rivers, wetlands, permanent or temporary pools, beaver ponds as well as earthen stock tanks and borrow pits. The northern leopard frog is experiencing threats from loss of habitat; disease such as chytrid fungus; introduction of non-native, predatory fish (i.e., bass, pike, etc.) and amphibian (bull frog [*Rana catesbeiana*]) species; discharges of point and nonpoint pollutants; and subsequent reductions in water quality. Alternative routes for the proposed Project crosses and are in proximity to known habitat for this species.

Special Status Aquatic Invertebrates

Initially, 13 special status aquatic invertebrate species were identified as potentially occurring in the Project area. Following an analysis of known occurrence data, it was determined that two special status aquatic invertebrate species are known to occur in the alternative route study corridors, the Eureka Mountain snail (*Oreohelix eurekensis)* and the Southern Bonneville springsnail (*Pyrgulopsis transversa*) that are both Utah-listed species of special concern. The remaining 11 special status aquatic invertebrate species have either limited habitat or are not known to occur in the alternative route study corridors. These species are being carried forward for further analysis because suitable habitat for the species is present in portions of the alternative route study corridors and individuals are likely to occur in those habitats.

Game Fish

Analysis of potential impacts of the Project on game fish species is an important inclusion for the analysis of aquatic species in the Project area due to their recreational and economic values as well as the potential effects they could have on other aquatic species. However, spatial data was not made available by the cooperating agencies during the inventory process and game fish will be analyzed on the basis of suitable habitat rather than known occurrences in the study corridor. Game fish species identified in the Project area can be broken into two general categories, cold-water fishes and warm-water fishes. Table 3-144 summarizes the game fish species known to occur or likely to occur in the alternative route study corridors.

TABLE 3-144
GAME FISH KNOWN TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Habitat
Cold-water Game Fish		
Bonneville cutthroat trout	*Oncorhynchus clarki utah*	Streams, lakes/reservoirs
Brook trout	*Salvelinus fontinalis*	Streams, lakes/reservoirs
Brown trout	*Salmo trutta*	Streams, lakes/reservoirs
Colorado River cutthroat trout	*Oncorhynchus clarki pleuriticus*	Streams, lakes/reservoirs
Cutthroat trout	*Oncorhynchus clarki*	Streams, lakes/reservoirs
Mountain whitefish	*Prosopium williamsoni*	Streams
Rainbow trout	*Oncorhynchus mykiss*	Streams, lakes/reservoirs
Snake River cutthroat trout	*Oncorhynchus clarki bouvieri*	Streams, lakes/reservoirs
Kokanee salmon	*Oncorhynchus nerka*	Streams, lakes/reservoirs
Tiger trout (brown x brook hybrid)	*Salmo trutta* x *Salvelinus fontinalis*	Streams, lakes/reservoirs
Warm-water Game Fish		
Black bullhead	*Ameiurus melas*	Lakes/reservoirs
Black crappie	*Pomoxis nigromaculatus*	Lakes/reservoirs
Bluegill	*Lepomis macrochirus*	Lakes/reservoirs
Channel catfish	*Ictalurus punctatus*	Streams, lakes/reservoirs
Green sunfish	*Lepomis cyanellus*	Lakes/reservoirs
Largemouth bass	*Micropterus salmoides*	Lakes/reservoirs
Rock bass	*Ambloplites rupestris*	Lakes/reservoirs
Smallmouth bass	*Micropterus dolomieu*	Streams, lakes/reservoirs
White bass	*Morone chrysops*	Lakes/reservoirs
Wiper (striped x white bass hybrid)	*Morone saxatilis* x *Morone chrysops*	Lakes/reservoirs
Northern pike	*Esox lucius*	Lakes/reservoirs
Walleye	*Sander vitreus*	Streams, lakes/reservoirs
Yellow perch	*Perca flavescens*	Streams, lakes/reservoirs
Smelt	*Osmerus* sp.	Lakes/reservoirs

Other Aquatic Organisms

Non-game Fish

Non-game fish species found in the Project area include suckers, darters, and minnows. Sucker species, family *Catostomidae*, occur in stream or river habitats and include species such as longnose (*C. catostomus*), mountain (*C. platyrhynchus*), white (*C. commersonii*), and desert (*C. clarkia*) suckers. Darter species, family *Percidae*, occur in the Project area and include the Iowa darter (*Etheostoma exile*) and Johnny darter (*E. nigrum*). Minnow species, family *Cyprinidae,* occur in the Project area and include the red shiner (*Cyprinella lutrensis*), brassy minnow (*Hybognathus hankinsoni*), common carp (*Cyprinus carpio*), creek chub (*Semotilus atromaculatus*), emerald shiner (*Notropis atherinoides*), sand shiner (*N. stramineus*), fathead minnow (*Pimephales promelas*), longnose dace (*Rhinichthys cataractae*), speckled

dace (*R. osculus*), redside shiner (*Richardsonius balteatus*), southern leatherside chub (*G. copei*), Utah chub (*G. atraria*), and Virgin spinedace (*Lepidomeda mollispinis*).

Amphibians

Aquatic habitats located in the Project area support amphibians including salamanders, toads, and frogs. Amphibian species require aquatic and semi-aquatic habitats for breeding and often use adjacent terrestrial habitats during nonbreeding periods. Salamander and toad species use burrows and other moist areas in terrestrial habitat to overwinter. Most frog species overwinter in the bottom substrates of their aquatic habitats. Amphibians likely to occur in the Project area include the northern leopard frog (*Rana pipiens*), spotted toad (*B. punctatus*), western toad (*B. boreas*), Woodhouse's toad (*B. woodhousii*), Great Basin spadefoot toad (*Spea intermontana*), and Couch's spadefoot toad (*Scaphiopodidae couchii*).

Invertebrates

Species composition and relative abundance data for invertebrates are not required for the impact analysis. However, a discussion of aquatic habitats and fish without consideration of invertebrate communities potentially occurring in the aquatic habitats crossed by the Project would leave this discussion incomplete. Therefore, the following information is presented to discuss the aquatic invertebrates potentially inhabiting aquatic habitats in the study corridor.

Invertebrate communities are present throughout the year in all perennial waters in the Project area. Invertebrate occurrence in intermittent or ephemeral waters would be limited to the period when water is present. Aquatic invertebrates often provide crucial forage for wildlife, fish, amphibians, and predatory invertebrates. Not only are they crucial elements of the food chain, aquatic invertebrates and especially macro-invertebrates can be used as an indicator of water quality given their distribution, and abundance in a water body (Barbour et al. 1999; Wallace and Webster 1996).

Approximately 40 aquatic invertebrate species (including the 10 special status species) are known to occur or are likely to occur in the Project area based on review of available literature (Appendix J). A feature common to all aquatic invertebrate species is their dependence on aquatic habitats for all or a part of their life cycle. Common aquatic invertebrate species found in the Project area include but are not limited to the following: micro-invertebrate arthropod species such as water fleas, water bears, water mites, freshwater shrimp, midge larva, hydras, and annelids (leeches); macro-invertebrate species such as true flies *(Diptera)*, mayflies *(Ephemeroptera)*, stoneflies *(Plecoptera)*, and caddisflies *(Tricoptera)*; mollusks including gastropods (snails) and bivalves (mussels and clams); and numerous crustaceans with the most notable being crayfish.

Aquatic Invasive Species

Aquatic invasive species are non-native animals, fish, plants, and pathogens that have a harmful effect on endemic fish and aquatic species. Aquatic invasive species were defined in 2008 by the Colorado State Legislature as any exotic or nonnative wildlife or any plant species that have been determined to pose a significant threat to aquatic resources or water infrastructure of the state.

The introduction of aquatic invasive species into an established ecosystem can alter or disrupt existing relationships and ecological processes. Aquatic invasive species are capable of out-competing and even displacing native species usually because of their ability to grow faster and out produce native species, effectively out competing them for light, nutrients, and space. The most destructive aquatic invasive species known from the Project area, the zebra and quagga mussels, not only pose a threat to the natural aquatic habitat they are introduced to, but they also cause severe damage to infrastructure such as dam structures, mooring facilities, irrigation structures, etc., which have been shown to result in substantial

costs in the monitoring and removal of those species. As of August 2012, aquatic invasive species are known to inhabit waters in the states of Colorado and Utah. There are no known infestations of aquatic invasive species in Wyoming. The major aquatic invasive species threatening waters in the Project area are summarized in Table 3-145.

TABLE 3-145
AQUATIC INVASIVE SPECIES OF PARTICULAR CONCERN TO COLORADO, UTAH, AND WYOMING

Common Name	Scientific Name	Species Notes
Plants		
Eurasian watermilfoil	*Myriophyllum spicatum*	Known to occur in Colorado[1] and Utah[2]
Water hyacinth	*Eichornia crassipes*	Known to occur in Colorado
Purple loosestrife	*Lythrum salicaria*	Known to occur in Colorado and Utah
Animals		
Burbot	*Lota lota*	Known to occur in Utah
Rusy crayfish	*Orconectes rusticus*	Known to occur in Colorado
Quagga mussel	*Dreissena bugensis*	Known to occur in Colorado and Utah
Zebra mussel	*Dreissena polymorpha*	Known to occur in Colorado and Utah
New Zealand mudsnail	*Potamopyrgus antipodarum*	Known to occur in Colorado and Utah
Pathogens		
Whirling disease		Known to occur in Colorado and Utah
Septicemia virus		Known to occur in Colorado and Utah

NOTES:
[1]Colorado Lakes and Reservoirs Management Association 2012
[2]National Invasive Species Information Center 2012

3.2.10.4.2 Impact Assessment and Mitigation Planning

For an interdisciplinary comparison of alternative routes and analysis of other potential effects, the methodology for assessing potential impacts generally included (1) identifying the types of potential effects on fish and aquatic resources that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities; (2) determining initial impacts on fish and aquatic resources present in the study corridors; (3) identifying appropriate selective mitigation measures for minimizing some potential adverse effects and determining specific areas where selective mitigation measures should be applied; and (4) disclosing level of potential residual impacts on fish and aquatic resources (i.e., impacts anticipated after application of selective mitigation measures). Design Features of the Proposed Action for environmental protection (Table 2-8) were considered when assessing both initial and residual impacts. Additional discussion of the methods used in analyzing effects of the Project on fish and aquatic resources to support interdisciplinary comparison of alternative routes are discussed in the Effects Analysis section.

Supplemental analyses were deemed necessary to address some of the issues raised by the public and the agencies during scoping. Quantitative or qualitative analyses were performed, depending on information available, to evaluate potential impacts of the Project on fish and aquatic resources, or to meet the requirements of relevant law, regulation, or policy. The methods for these supplemental analyses are discussed in the Effects Analysis section.

Types of Potential Effects

The degree of potential effects on fish and aquatic resources resulting from construction, operation, and maintenance of the Project would depend largely on each resource's particular vulnerability to Project-related disturbance. This analysis assumes that the estimated extent of surface disturbance required to

construct the transmission line tower types described in Section 2.1 would be the same. Therefore, the anticipated impacts on fish and aquatic resources related to surface disturbance would be the same regardless of the tower type selected. The apparent vulnerability of fish and aquatic resources as well as the susceptibility of their habitats to Project-related disturbance was a primary attribute used to assess potential effects and the extent of those effects on fish and aquatic resources. Additionally, the proximity of Project-related disturbance and the spatial orientation (i.e., upstream or downstream) of that disturbance also plays a role in determining the type and degree of potential effects on fish and aquatic resources. For example, impacts occurring directly on occupied habitat and those impacts occurring upstream of occupied habitat for any fish or aquatic species would have a greater effect on those individuals than if impacts were to occur in uplands adjacent to occupied habitat or impacts occurring downstream of occupied habitat.

Types of potential effects on fish and aquatic species were identified based on guidance from federal and state agency biologists, public scoping, and literature reviews of the effects that similar projects have had on fish and aquatic resources. Through those interactions with the public, cooperating agencies, and with peers; it is apparent that impacts on fish and aquatic resources must include both direct effects and indirect effects. These effects are anticipated to be the same for special status species, game fish species, and other aquatic organisms.

Impacts on federally listed fish species would differ depending on the alternative route being analyzed namely because not every alternative route would affect federally listed fish. Quantification of impacts on federally listed fish species as well as the qualification of the level of residual impacts will be detailed in the Results section (Section 3.2.10.5) for each alternative route that crosses critical habitat and is within 1 mile of critical habitats and/or occurrences.

Impacts on BLM, USFS, and state-listed sensitive fish and aquatic species inhabiting lentic, lotic, and wetland habitats in the alternative route study corridors would result from construction, operation, and maintenance of the Project. Impacts on these species are detailed in the results section (Section 3.2.10.5).

Impacts on game fish and other aquatic organisms would be expected to result from construction, operation, and maintenance of the Project. Data specific to game fish has not been made available for analysis at this time. Therefore, a qualitative analysis of impacts on aquatic habitats potentially supporting game fish and other aquatic organisms is included in the Results section (Section 3.2.10.5) and is intended to identify potential impacts on game fish and other aquatic organisms secondarily as a function of those species' habitat requirements.

Where the Project corridor encounters critical habitat or occurrences of federally listed special status species; occurrences of BLM, USFS, or state-listed sensitive species; or potential habitat for game fish and other aquatic organisms; initial impacts would be reduced through proper implementation of selective mitigation measures. Where avoidance is not possible and implementation of selective mitigation measures impracticable; impacts would consist of permanent loss of individuals, loss of suitable habitat, and reductions in population fecundity and long-term species viability.

Direct Effects

Direct effects on fish and aquatic resources would include mortality of individuals and direct removal of aquatic (lentic and lotic) and semi-aquatic (wetland and riparian) habitats resulting from construction, operation, and maintenance of permanent Project facilities including but not limited to permanent access roads, ancillary facilities, fiber optic lines, series compensation stations, and transmission line towers (i.e., individuals crushed by vehicles and grading or blading activities that permanently remove habitat).

Construction of temporary Project facilities could require crossing numerous lotic habitats; potentially a few lentic habitats; and few, if any wetland or riparian habitats supporting sensitive fish and/or aquatic species. Often, these crossings require the placement of fill material (e.g., log bunks, crane pads, rock, soil, bridge pilings, culverts, wing walls, etc.) to provide a structure sufficient to support construction equipment and materials while at the same time reducing potential environmental impacts on fish and aquatic species and their associated aquatic and semi-aquatic habitats. Typically, temporary stream crossings would be used to cross aquatic habitats with little to no stream flow where a crossing would only be needed for the construction phase of the Project or where existing streambed substrate would support construction, operation, and maintenance related traffic. Types of temporary stream crossings would include (1) dry crossings with no bank or channel improvement, (2) mechanically grading banks to a slope sufficient to drive equipment and building materials across the channel (bank recontouring and revegetation would follow the work at the temporary crossing), (3) placement of temporary fill that would be removed following the completion of work at the site, or (4) temporary span structures. While temporary, these crossings would have the potential to affect stream morphology and ecological function but typically for only a short duration.

Indirect Effects

Indirect effects on fish and aquatic resources resulting from construction, operation, and maintenance, of the Project could occur as a result of activities that increase the probability of erosion near aquatic habitats and subsequent sedimentation to those habitats as well as those activities that result in short-term modification of habitats supporting fish, aquatic, and semi-aquatic species.

Ground-disturbing activities that alter natural channel morphology, substrate composition, and stability and those activities that would compact or decompact soils or remove riparian vegetation in proximity to fish and aquatic habitats could result in increased sediment loads, removal of water filtering and shading vegetation (wetlands or riparian vegetation), accidental spills of environmentally harmful materials (fuel, oil, concrete, etc.), and/or introduction of aquatic invasive species. All indirect effects would result in a reduction in fish and aquatic species fitness, reproductive potential (fecundity), survivability, and long-term adaptability.

Surface disturbance associated with to the construction of temporary Project facilities that require crossing lotic, lentic, wetland, and/or riparian habitats supporting fish and other aquatic or semi-aquatic species could result in the type of indirect effects mentioned previously. Often, these crossings require the placement of temporary and permanent fill material (e.g., log bunks, crane pads, rock, soil, bridge pilings, culverts, wing walls, etc.) to provide a structure sufficient to support construction equipment and materials while at the same time minimizing environmental impacts on fish, aquatic, and semi-aquatic species as well as their associated habitats.

Research has shown that road construction and maintenance activities such as the clearing of stream-side vegetation, recontouring of channels, and vehicular travel through streams increased stream temperature and reduced dissolved oxygen content as suspended solids absorb heat from sunlight. Temperatures greater than 21 degrees Celsius (70 degrees Fahrenheit) can severely stress most cold-water fish and aquatic species (Wood and Armitage 1997).

Where temporary stream crossings are needed, modification of stream banks for temporary crossings could require the removal of vegetation that could take many years to recover, depending on the plant species present and creating the potential for long-term bank erosion and sedimentation of aquatic habitats, depending on site-specific conditions.

Generally, indirect effects on fish and aquatic resources would be of short duration and can be mitigated by proper implementation of design features, selective mitigation measures, and reclamation following ground-disturbing activities.

Mitigation Planning and Effectiveness

In addition to the design features of the Proposed Action for environmental protection, selective mitigation measures would be applied where feasible to reduce potential high and moderate adverse impacts on aquatic habitats or where required to comply with law, regulation, or agency policy. Once an alternative route is selected, the Applicant would coordinate with the BLM and other land-management agencies or landowners, as appropriate, to refine the implementation of mitigation at specific locations or areas. As described in Appendix J, the BLM would require the Applicant to monitor the implementation and effectiveness of conservation measures (i.e., design features of the Proposed action for environmental protection, selective mitigation measures, and other measures implemented to avoid, minimize, and mitigate for resource impacts) and would implement adaptive management for aquatic habitats, as needed. Detailed monitoring requirements would be outlined in a biological resource monitoring plan and in a water resources protection plan, which would be developed with the BLM and cooperating agencies and included in the POD. These plans also would include monitoring requirements for federally listed fish or aquatic species, if identified through the Section 7 consultation process.

Design Features of the Proposed Action

Design Features of the Proposed Action (Table 2-8) are measures incorporated into the Project description by the Applicant and employed Project-wide to reduce the potential for initial impacts on occur. Design features of the Proposed Action effective in reducing impacts on wildlife resources include Design Features 3, 26, 27, 28, 30, 33, and 34. In addition to listed design features, the BLM or the appropriate land-management agency would implement resource avoidance measures as needed to meet resource-management objectives if sensitive resources are located near a geotechnical boring location as described in Section 2.4.2.2. Resource-avoidance measures for the geotechnical investigation would include (1) monitor geotechnical investigation activities, (2) adjust activities to occur outside of seasonal restrictions, (3) use alternative access or drilling methods, (4) relocate the borehole, and (5) abandon the geotechnical site.

- **Design Feature 3 (management of special status species)**. Special status species, threatened and endangered species, or other species of particular concern would be considered in accordance with management policies set forth by appropriate land-management or wildlife-management agencies (e.g., BLM, USFS, FWS, state wildlife agencies, etc.). In cases where such species are identified, appropriate action would be taken to avoid adverse impacts on the species and its habitat. Avoidance measures may include altering the placement of roads or towers, adjustments to route alignment, and monitoring activities where practicable as approved by the landowner and Compliance Contractor. This design feature would avoid areas of particular concern due to the inhabitation of special status species or critical habitats reducing the potential for indirect and/or direct effects on special status fish and aquatic resources.
- **Design Feature 26 (vehicle access restriction)**. All construction vehicle movement outside the right-of-way would be restricted to predesignated access, contractor-acquired access, public roads, or overland travel approved in advance by the applicable land-management agency to reduce impacts on aquatic resources and upland adjacent to those resources. Special status species, threatened and endangered species, or other species of particular concern would be considered in accordance with management policies set forth by appropriate land-management or wildlife-management agencies (e.g., BLM, USFS, FWS, state wildlife agencies, etc.). This design

feature would reduce traffic in areas susceptible to erosion and sedimentation to aquatic habitats supporting fish and aquatic resources.

- **Design Feature 27 (construction activity** spatial **restriction)**. The spatial limits of all Project-related construction activities, including vehicle movement, would be predetermined with activity restricted to and confined within those limits. This design feature will minimize the likelihood that construction, operation, and maintenance activities would result in direct or indirect impacts on fish and aquatic resources by limiting the proximity of those activities to sensitive aquatic habitats.
- **Design Feature 28 (personnel instruction)**. All Project personnel would be instructed in the importance, purpose, necessity, and regulations of protection of natural resources. Instruction will also be given for reporting and stop work procedures in the event of a resource conflict. This design feature will minimize impacts on fish and aquatic resources throughout the Project corridor, but especially in areas where aquatic habitats or special status species were not previously known to occur prior to commencement of construction.
- **Design Feature 30 (hazardous materials restrictions)**. - Hazardous materials would be contained and removed to a disposal facility and not drained into the ground, streams, or drainages. Refueling and storing potentially hazardous materials would not occur within a 328-foot (100 meter) radius of a water body (500 feet in Wyoming), a 200-foot radius of all identified private water wells, and a 400-foot radius of all identified municipal or community water wells. Spill preventive and containment measures or practices would be incorporated as needed. This design feature would be used to prevent exposure of aquatic habitats to harmful materials and would minimize the potential for direct and indirect impacts on fish and aquatic resources resulting from Project activities.
- **Design Feature 33 (riparian area avoidance)**. Consistent with BLM Riparian Management Policy, surface disturbing activities within 328 feet (100 meters) of a riparian in Utah and Colorado would be required to meet exception criteria defined by the BLM, such as acceptable measures to protect riparian resources and habitats by avoiding or minimizing stormwater runoff, sedimentation, and disturbance of riparian vegetation, habitats, and wildlife species. In Wyoming, surface-disturbing activities within 500 feet of all perennial waters and/or wetland and riparian areas and 100 feet of all ephemeral channels also would be required to meet exception criteria established in the BLM Rawlins Field Office RMP. Mitigation measures would be developed on a site-specific basis, in consultation with the affected federal land-management agency, and incorporated into the POD. If any disturbance was anticipated within 20 feet of the edge of a riparian area or other wetland habitat, a silt fence or certified weed-free straw wattle would be installed along the travel route on the wetland side unless the wetland is up-gradient. This design feature would be used to protect riparian resources and habitats.
- **Design Feature 34 (invasive species avoidance).** Project activities would adhere to interagency developed methods of avoidance, inspection, and sanitization as described in the *Operational Guidelines for Aquatic Invasive Species Prevention and Equipment Cleaning* (USFS 2009a). If control of fugitive dust near sensitive water bodies were necessary, water would be obtained from treated municipal sources or drafted from sources known to contain no aquatic invasive species. Support vehicles, drill rigs, water trucks, and drafting equipment would be inspected and sanitized, as needed, following interagency-approved operational guidelines. This design feature would be used to prevent the spread of aquatic invasive species.

Selective Mitigation Measures

In addition Design Features of the Proposed Action for environmental protection, selective mitigation measures would be implemented to reduce potential high or moderate impacts on fish and aquatic species.

The selective mitigation measures applicable to reducing residual impacts on fish and aquatic resources include Selective Mitigation Measures 2, 5, 7, and 11, which are described in the following bulleted list.

- **Selective Mitigation Measure 2 (sensitive resource avoidance)**. There will be no blading of new access roads in certain areas of sensitive resources (e.g., perennial streams, riparian areas, wetlands) during construction or maintenance. In these particular areas, existing access (if available) will be used to cross water resources and aquatic habitats and existing or overland access routes are to be used for construction and maintenance in these select areas. Every crossing would be identified and a crossing plan developed to minimize residual impacts on water resources and associated aquatic habitats. To minimize ground disturbance, subsequent erosion and sedimentation, overland routes would be flagged with easily seen markers and the route must be approved in advance. This selective mitigation measure would limit the amount of habitat disturbed, removed, or fragmented.
- **Selective Mitigation Measure 5 (minimize new or improved accessibility)**. All new or improved access (e.g., blading, widening existing access) not required for maintenance would be closed or rehabilitated using the most effective and least environmentally damaging methods, appropriate to that area and developed through consultation with the landowner or land-management agency. Limiting access to construction areas would reduce the likelihood that post-construction use of roads by the general public would persist following development of new or improved access. Reducing traffic on newly disturbed sites will reduce the resulting erosive attributes associated with traffic (soil compaction, decompaction, rutting, etc.). Methods for road closure or management include installing and locking gates, obstructing the path (e.g., earthen berms, boulders, redistribution of woody debris), revegetating and mulching the surface of the roadbed to make it less apparent, restoring the road to its natural contour and vegetation, or constructing waterbars to ensure proper drainage.
- **Selective Mitigation Measure 7 (span and/or avoid sensitive features)**. Within the limits of standard tower design and in conformance with engineering and Applicant requirements; structures would be located to allow conductors to clearly span identified sensitive features. Structures would be placed so as to avoid sensitive features, including, but not limited to, wetlands, riparian areas, aquatic habitats, and occurrences of special status aquatic species. Avoidance measures may include selective tower placement, spanning sensitive features, or realigning access routes. This selective mitigation measure would reduce potential loss, degradation, and fragmentation of sensitive habitats.
- **Selective Mitigation Measure 11 (minimize right-of-way clearing)**. Clearing of the right-of-way would be minimized to avoid sensitive features including, but not limited to, wetlands, aquatic habitats, occurrences of special status aquatic species, areas of steep slopes and fragile soils, etc. In select areas, the right-of-way width may be modified (within the limits of PacifiCorp Vegetation Management Standards and standard tower design) to protect sensitive resources, but current land uses would be allowed to continue unabated, provided the use meets applicable standards. This selective mitigation measure would minimize habitat loss and reduce visual contrast between the cleared areas and the surrounding environment.
- **Selective Mitigation Measure 12 (seasonal and spatial wildlife restrictions)**. Construction and maintenance activities would be restricted in designated areas and during critical periods (e.g., wintering habitats and specific breeding or nesting seasons) (Appendix J, Tables J-13 through J-16). This selective mitigation measure would minimize disturbance to wildlife by limiting human activity, noise, and disturbance during sensitive life-cycle periods and reduce the risk of negative impacts on breeding success and species survival rates.

3.2.10.4.3 Effects Analysis

Methods for Analysis to Support Interdisciplinary Comparison of Alternative Routes

Criteria for Assessing Level of Impacts

Criteria were developed in collaboration with the Agency Interdisciplinary Team to assess the level of a potential adverse effect on federally listed threatened and/or endangered aquatic species associated with implementation of the Project. Criteria developed to assess the level of impacts were based on considerations of fish and aquatic resource vulnerability to impacts, relative fish and aquatic species population abundance and magnitude of anticipated impacts, additional protections including state laws and statutes, and existing conditions. Table 3-146 describes the criteria developed for assessing level of impacts on fish and aquatic species.

TABLE 3-146
CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON FISH AND AQUATIC SPECIES

Level of Impacts	Description
High	▪ Impacts that would severely limit the long-term sustainability of populations (e.g., impacts on only known population) ▪ Loss or adverse modification of occupied habitat or large portions of suitable habitat for local species ▪ Loss or adverse modification of designated critical habitat
Moderate	▪ Impacts that would have adverse effects on aquatic species but would not severely limit the long-term sustainability of populations (e.g., impacts on fish or aquatic species populations somewhat more widely distributed than local species) ▪ Loss or adverse modification of small portions of unoccupied suitable habitat for local species
Low	▪ Impacts that would have only minor adverse effects on species and would not limit the long-term sustainability of populations (e.g., indirect effects or impacts in areas of pre-existing disturbance) ▪ Indirect effects or disturbance in areas of pre-existing disturbance
Nonidentifiable	▪ Locations where effects on fish and aquatic resources would be completely mitigated following implementation of selective mitigation measures

Initial Impacts

Initial impacts are those effects resulting from the implementation of the Project, including Design Features of the Proposed Action for environmental protection (refer to the subheading Mitigation Planning and Effectiveness in Section 3.2.10.2). Initial impacts were assigned to federally listed threatened and endangered fish and aquatic species for a quantitative analysis of impacts on those species. The quantitative approach to assess initial impacts on federally listed threatened and endangered fish and aquatic species is based on the criteria presented in Table 3-146.

Residual Impacts

Residual impacts represent anticipated impacts on federally listed fish and their habitats following implementation of selective mitigation measures described (refer to the subheading Mitigation Planning and Effectiveness in Section 3.2.10.2). The level of potential residual impacts on federally listed fish and their habitats associated with implementation of the Project was assessed using the criteria presented in Table 3-146. Implementation of selective mitigation measures is expected to reduce the level of expected impacts on federally listed fish and their habitats (e.g., moderate initial impacts would be expected to decrease to a low rating following implementation of selective mitigation measures) as follows:

- Avoiding sensitive resources such as designated critical habitat or aquatic habitats upstream from critical habitat (Selective Mitigation Measure 2)
- Minimizing new or improved accessibility and reducing the potential for new access roads or upgrading existing roads, especially where such actions could result in indirect effects on designated critical habitat (Selective Mitigation Measure 5)
- Spanning and/or avoiding sensitive features such as critical habitat or areas where ground disturbance could result in adverse effects on designated critical habitat (Selective Mitigation Measure 7)
- Minimizing, to the extent practicable, right-of-way clearing, especially in proximity to designated critical habitat (Selective Mitigation Measure 11)

Implementing spatial and seasonal wildlife restrictions in designated areas during critical periods (Selective Mitigation Measure 12). Application of these selective mitigation measures individually or in conjunction with others applicable to fish and aquatic resources, specifically to habitats designated as critical to the continued existence of federally listed species, would provide the Applicant with options and tools that would enable the Project to move forward while simultaneously protecting vulnerable species and their habitats.

Methods for Additional Analysis of Potential Impacts

In addition to the analysis conducted to facilitate an interdisciplinary comparison of alternative routes, additional analyses were required to adequately address some issues raised by the public and the agencies during scoping regarding potential impacts on special status fish and aquatic resources or to meet the requirements of relevant law, regulation, or policy.

Element occurrence data from state natural heritage programs were used to determine the presence of federally listed species as well as BLM, USFS, and state-listed sensitive species in the alternative route study corridors. Numbers of element occurrences (hereafter occurrences) in these areas will be reported in text, instead of total populations or numbers of individuals as these data are often not recorded consistently between observers or states. Number of occurrences for each species will be reported for each alternative route by state. Multiple occurrences of the same species located within a quarter mile were counted as a single occurrence to avoid duplicate counting of species found in the same general location with data collected by different observers or at different time periods.

Sufficient data for game fish and other aquatic organisms occurring in the alternative route study corridors could not be obtained for use in this analysis. However, game fish and other aquatic organisms are expected to occur in aquatic habitats found in the alternative route study corridors. The number of aquatic habitats potentially supporting game fish and other aquatic organisms will be reported for each alternative route by state.

Design features and selective mitigation measures pertinent to Project effects on fish and aquatic resources, initial impacts resulting from Project activities, selective mitigation measures employed to reduce the level of initial impacts, and residual impacts on critical habitats supporting the Colorado River endangered fishes are summarized in Table 3-147.

TABLE 3-147
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON FISH AND AQUATIC SPECIES

Fish and Aquatic Resources	Design Feature of the Proposed Action Relevant to Fish and Aquatic Resources	Initial Impact	Selective Mitigation Measure	Residual Impact
Resources Identified for Interdisciplinary Comparison of Alternative Routes				
Federally listed fish	26, 27, 28, 30, 33, 34	Moderate	2, 5, 7, 11	Low
Resources Identified for Additional Analysis				
Sensitive fish	3, 26, 27, 28, 30, 33, 34	Low	2, 5, 7, 11	Nonidentifiable impact
Sensitive amphibians	3, 26, 27, 28, 30, 33, 34	Low	2, 5, 7, 11, 12	Nonidentifiable impact
Game fish	26, 27, 28, 30, 33, 34	Low	2, 5, 7, 11	Nonidentifiable impact
Other aquatic species	26, 27, 28, 30, 33, 34	Low	2, 5, 7	Nonidentifiable impact

3.2.10.5 Results

3.2.10.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.10.5.2 Impacts Common to All Action Alternatives

Construction, operation, and maintenance of any action alternative potentially would result in direct and indirect impacts on general aquatic habitats (excluding designated critical habitats) and indirect impacts on fish and aquatic species. The level of these impacts is nonquantifiable largely due to the insufficiency of reliable data and will be presented in the following sections as a qualitative assessment.

Potential Project-related impacts on USFS MIS, and USFS-sensitive species occurring on the Ashley, Manti-La Sal, and Uinta National Forests in Utah were analyzed separately. Results of that analysis are included in the USFS Fish and Aquatic Resources Report (USFS 2014b).

3.2.10.5.3 345-kilovolt Ancillary Transmission Components

The 345kV segments in proximity of the Clover Substation would be constructed in uplands currently being used for agriculture and livestock grazing. Construction of these three segments would affect 9 intermittent lotic habitats which are tributaries of Currant Creek and the Burraston Ponds. Following proper implementation of selective mitigation measures, low or nonidentifiable impacts on these habitats would be expected. These lotic habitats do not provide suitable habitat for fish or other aquatic species being analyzed in this section.

3.2.10.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The WYCO alternative routes traverse the southern reaches of Wyoming Basin and northern Colorado Plateau ecoregions crossing Sweetwater and Carbon counties in Wyoming, as well as Moffat and Routt counties in Colorado (MV-11a). Habitat for special status fish and amphibian, game fish, and other aquatic organisms include lentic, lotic, and wetland habitats in the Great Divide Closed Basin, Little Snake, Lower White, Lower Yampa, Upper Yampa, Medicine Bow, Muddy, Pathfinder-Seminoe Reservoirs, and Upper North Platte subbasins. The following sections describe fish and aquatic resources occurring along each alternative route and the potential impacts on those resources resulting from the Project. Table 3-148 summarizes miles of residual impacts on federally listed endangered fish as well as

direct and indirect impacts on occurrences of special status aquatic species by state for each of the WYCO alternative routes.

TABLE 3-148
SPECIAL STATUS FISH AND AQUATIC SPECIES OCCURRING IN THE ALTERNATIVE ROUTE STUDY CORRIDORS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	State	Special Status Fish and Aquatic Species	Residual Impact (miles crossed)[1]	Number of Occurrences Crossed by the Alternative Route Study Corridor[2]
WYCO-B (Agency and Applicant Preferred Alternative)	Wyoming	Bluehead sucker, northern leopard frog	0.0	2
	Colorado	Colorado pikeminnow	0.1	1
WYCO-C	Wyoming	None	0.0	0
	Colorado	Colorado pikeminnow	0.1	1
WYCO-D	Wyoming	Bluehead sucker, northern leopard frog, flannelmouth sucker, roundtail chub	0.0	8
	Colorado	Boreal toad, Colorado pikeminnow, Colorado River cutthroat trout, humpback chub, northern leopard frog, roundtail chub	0.2	7
WYCO-F	Wyoming	Bluehead sucker, northern leopard frog, flannelmouth sucker, roundtail chub	0.0	4
	Colorado	Colorado pikeminnow	0.1	1

NOTES:
[1]Residual impacts were only calculated where critical habitat for species listed under the Endangered Species Act is crossed by the reference centerline.
[2]Number of occurrences recorded within 1 mile of the alternative route. Some occurrences may be associated with multiple link numbers.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Alternative WYCO-B in Wyoming is associated with 6 subbasins and directly or indirectly crosses 1 specially designated water, 105 wetlands and riparian areas, 12 lentic waters, and 326 lotic waters, which most notably include the Medicine Bow River and North Platte River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, 2 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative WYCO-B reference centerline in Wyoming as follows: 1 occurrence of northern leopard frog (Links W108 and W116) and 1 occurrence of bluehead sucker (Links W108 and W116) (Table 3-148 and MV-11a).

Environmental Consequences (Wyoming)

No identifiable impacts on federally listed special status species or critical habitats would be anticipated to result from implementation of Alternative WYCO-B in Wyoming (Table 3-148). However, there may

be impacts (water use, etc.) that were not identified with the methods used for interdisciplinary comparison.

Impacts on habitats potentially occupied by BLM, USFS, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Impacts from surface disturbance related to Project construction could modify habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado is associated with three subbasins and directly or indirectly crosses 1 specially designated water, 9 wetlands and riparian areas, 1 lentic water, and 160 lotic waters, which most notably include the Yampa River and Little Snake River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, a single occurrence of a special status fish and aquatic species is recorded within 1 mile of the Alternative WYCO-B reference centerline in Colorado as follows: one occurrence of Colorado pikeminnow (Link C91) where Alternative WYCO-B crosses the Yampa River, which is designated critical habitat for Colorado pikeminnow (Table 3-148 and MV-11a).

Environmental Consequences (Colorado)

Potential impacts on Colorado pikeminnow critical habitat would result from ground-disturbing activities near the Yampa River. Following proper implementation of selective mitigation measures, impacts on Colorado pikeminnow critical habitat associated with Alternative WYCO-B in Colorado would include a 0.1 mile low residual impact (Table 3-148).

Impacts from surface disturbance related to Alternative WYCO-B in Colorado could modify general aquatic and semi-aquatic habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Alternative WYCO-C

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming is associated with 6 subbasins and directly or indirectly crosses 1 specially designated water, 96 wetlands and riparian areas, 9 lentic waters, and 350 lotic waters, which most notably include the Medicine Bow River and North Platte River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, there are no occurrences of special status fish and aquatic species recorded within 1 mile of the Alternative WYCO-C reference centerline in Wyoming (Table 3-148 and MV-11a).

Environmental Consequences (Wyoming)

Alternative WYCO-C in Wyoming would result in no impacts on federally listed special status species or designated critical habitats (Table 3-148).

Impacts on habitats potentially occupied by BLM and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor.

Impacts from surface disturbance related to the Project could modify habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Affected Environment (Colorado)

Alternative WYCO-C in Colorado is associated with 3 subbasins and directly or indirectly crosses 1 specially designated water, 9 wetlands and riparian areas, 1 lentic water, and 160 lotic waters, which most notably include the Little Snake River and North Platte River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, a single occurrence of a special status fish and aquatic species is recorded within 1 mile of the Alternative WYCO-C reference centerline in Colorado as follows: one occurrence of Colorado pikeminnow (Link C91) where Alternative WYCO-C crosses the Yampa River, which is designated critical habitat for Colorado pikeminnow (Table 3-148 and MV-11a).

Environmental Consequences (Colorado)

Environmental consequences for Alternative WYCO-C in Colorado would be the same as WYCO-B in Colorado (Table 3-148).

Alternative WYCO-D

Affected Environment (Wyoming)

Alternative WYCO-D in Wyoming is associated with 6 subbasins and directly or indirectly crosses 12 specially designated waters, 128 wetlands and riparian areas, 19 lentic waters, and 287 lotic waters, which most notably include Muddy Creek, Medicine Bow River, and North Platte River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, 8 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative WYCO-D reference centerline in Wyoming as follows: 2 occurrences of flannelmouth sucker (Links W110, W111, W121, W299, and W300), 2 occurrences of bluehead sucker (Link W110), 2 occurrences of northern leopard frog (Link W110 and W22), and 2 occurrences of roundtail chub (Links C17, C27, W110 and W321) (Table 3-148 and MV-11a).

Environmental Consequences (Wyoming)

Alternative WYCO-D in Wyoming would result in no impacts on federally listed special status species (Table 3-148).

Impacts on habitats potentially occupied by BLM and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Impacts from surface disturbance related to the Project could modify habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Affected Environment (Colorado)

Alternative WYCO-D in Colorado is associated with 4 subbasins and directly or indirectly crosses 1 specially designated water, 31 wetlands and riparian areas, 18 lentic waters, and 304 lotic waters, which most notably include the Elkhead Creek, Little Cottonwood Creek, South Fork Fortification Creek, Fortification Creek, Little Bear Creek, Yampa River, and Little Snake River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4

Alternative WYCO-D in Colorado crosses designated critical habitat for the Colorado pikeminnow at the Yampa River (Links C105 and C106) (Table 3-148and MV-11a). Additionally, 7 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative WYCO-D reference centerline in Colorado as follows: 1 occurrence of boreal toad (Link C13), 1 occurrence of northern leopard frog (Link C100), 1 occurrence of humpback chub (Link 106), 1 occurrence of Colorado River cutthroat trout (Link C13), and 3 occurrences of Colorado pikeminnow (Links C101, C105, and C106) (Table 3-148 and MV-11a).

Environmental Consequences (Colorado)

Impacts on Colorado pikeminnow critical habitat would result from ground-disturbing activities near the Yampa River. Following proper implementation of selective mitigation measures, impacts on Colorado pikeminnow critical habitat associated with Alternative WYCO-D would include a 0.2 mile low residual impact (Table 3-148).

Impacts on habitats potentially occupied by ESA, BLM and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Impacts from surface disturbance related to the Project could modify habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F in Wyoming is associated with 6 subbasins and directly or indirectly crosses 1 specially designated water, 112 wetlands and riparian areas, 11 lentic waters, and 338 lotic waters, which most notably include the Medicine Bow River and North Platte River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, 4 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative WYCO-F reference centerline in Wyoming as follows: 1 occurrence of bluehead sucker (Links W107 and W108), 1 occurrence of flannelmouth sucker (Links W120 and W124), 1 occurrence of northern leopard frog (Links W107 and W108), and 1 occurrence of roundtail chub (Link W124) (Table 3-148 and MV-11a).

Environmental Consequences (Wyoming)

Alternative WYCO-F in Wyoming would result in no impacts on federally listed special status species (Table 3-148).

Impacts on habitats potentially occupied by BLM- and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Impacts from surface disturbance related to the Project could modify habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Affected Environment (Colorado)

Alternative WYCO-F in Colorado is associated with 3 subbasins and directly or indirectly crosses 1 specially designated water, 9 wetlands and riparian areas, 1 lentic water, and 160 lotic waters, which most notably include the Little Snake River and Yampa River. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Additionally, a single occurrence of a special status fish and aquatic species is recorded within 1 mile of the Alternative WYCO-F reference centerline in Colorado as follows: one occurrence of Colorado pikeminnow at the Yampa River near the mouth of Cedar Springs Draw, upstream of Cross Mountain Canyon (Link C91) (Table 3-148 and MV-11a).

Environmental Consequences (Colorado)

Environmental consequences for Alternative WYCO-F in Colorado would be the same as WYCO-B in Colorado (Table 3-148).

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The three COUT BAX routes occur from U.S. Highway 40 in Colorado to Clover, Utah, by way of Baxter Pass. These alternative routes occur south of the Uintah and Ouray Indian Reservation and pass through the town of Green River, Utah (MV-11b). These alternative routes cross the Colorado Plateau, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions. Habitat for special status fish, game fish, and other aquatic organisms include lentic, lotic, and wetland habitats in the Colorado Headwaters-Plateau, Lower Green, Lower White, Price, San Pitch, San Rafael, Upper Colorado-Kane Springs, Utah Lake, and Westwater Canyon subbasins. The following sections describe fish and aquatic resources occurring along each alternative route and the potential impacts on those resources resulting from the Project. Table 3-149 summarizes miles of residual impacts on federally listed endangered fish as well as direct and indirect impacts on occurrences of special status aquatic species by state for each of the COUT BAX alternative routes.

TABLE 3-149
SPECIAL STATUS FISH AND AQUATIC SPECIES OCCURRING IN THE ALTERNATIVE ROUTE STUDY CORRIDORS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	State	Special Status Fish and Aquatic Species	Miles of Residual Impacts[1]	Number of Occurrences Crossed by Alternative Route Study Corridor[2]
COUT BAX-B	Colorado	Colorado pikeminnow, roundtail chub, northern leopard frog	0.1	3
	Utah	Bonytail, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, razorback sucker, northern leopard frog, southern leatherside chub	0.1	13
COUT BAX-C	Colorado	Colorado pikeminnow, roundtail chub, northern leopard frog	0.1	3
	Utah	Bonytail, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, razorback sucker, northern leopard frog, southern leatherside chub	0.1	13

TABLE 3-149
SPECIAL STATUS FISH AND AQUATIC SPECIES OCCURRING IN THE ALTERNATIVE ROUTE STUDY CORRIDORS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	State	Special Status Fish and Aquatic Species	Miles of Residual Impacts[1]	Number of Occurrences Crossed by Alternative Route Study Corridor[2]
COUT BAX-E	Colorado	Colorado pikeminnow, roundtail chub, northern leopard frog	0.1	3
	Utah	Bonneville cutthroat trout, bonytail, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, razorback sucker, northern leopard frog	0.1	13

NOTES:
[1]Residual impacts were only calculated where critical habitat for species listed under the Endangered Species Act is crossed by the reference centerline.
[2]Number of occurrences recorded within 1 mile of the alternative route. Some occurrences may be associated with multiple link numbers.

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B in Colorado is associated with 3 subbasins and directly or indirectly crosses 129 specially designated waters, 30 wetlands and riparian areas, 15 lentic waters, and 386 lotic waters, which most notably include the White River, Douglas Creek, and Whiskey Creek. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Alternative COUT BAX-B in Colorado crosses critical habitat for Colorado pikeminnow in the White River (Link C177) northeast of Rangely, Colorado (MV-11b). Additionally, 3 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT BAX-B reference centerline in Colorado as follows: 1 occurrence of northern leopard frog (Links C177 and C185), 1 occurrence of roundtail chub (Links C177 and C185), and 1 occurrence of Colorado pikeminnow (Link C177 and C185) (Table 3-149 and MV-11b).

Environmental Consequences (Colorado)

Alternative COUT BAX-B in Colorado would result in impacts on critical habitat for Colorado pikeminnow. Following proper implementation of selective mitigation measures, Alternative COUT BAX-B would result in a 0.1 mile low residual impact on designated critical habitat (Table 3-149).

Impacts on habitats potentially occupied by BLM- and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Affected Environment (Utah)

Alternative COUT BAX-B in Utah is associated with 6 subbasins and directly or indirectly crosses 121 specially designated waters, 38 wetlands and riparian areas, 13 lentic waters, and 405 lotic waters, which most notably include Thompson and Floy washes; Deer, Pleasant, Coal Fork, Indian, Hop, Salt, West,

Currant, and Huntington creeks; Green and San Pitch rivers; and Water Hollow. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Alternative COUT BAX-B in Utah crosses critical habitat for Colorado pikeminnow and razorback sucker in the Green River (Link U487). Additionally, 13 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT BAX-B reference centerline in Utah as follows (Table 3-149 and MV-11b):

- 1 occurrence of Colorado River cutthroat trout in Indian Creek (Links U629 and U630)
- 2 occurrences of northern leopard frog in the Green River (Link U487) and in ponds located east of the San Pitch River north of Mount Pleasant, Utah (Links U630 and U631)
- 2 occurrences of Columbia spotted frog in the San Pitch River and adjacent riparian areas, the ponds east of the San Pitch River, and near U.S. Highway 89 north of Mount Pleasant, Utah (Link U630 and U631) in addition to Currant Creek, the West Creek wetland, and in the Burraston Ponds northwest of Nephi, Utah (Link U650)
- 1 occurrence of flannelmouth sucker in Huntington Creek upstream from Huntington, Utah (Links U731 and U732)
- 1 occurrence of southern leatherside chub in the San Pitch River (Links U630 and U631)
- 3 occurrences of Colorado pikeminnow west of Crescent Junction and where the route crosses the Green River, just south of Green River, Utah (Links U486 and U487)
- 2 occurrences of razorback sucker where the route crosses the Green River, just south of Green River, Utah (Link U487)
- 1 occurrence of bonytail where the route crosses the Green River, just south of Green River, Utah (Link U487)

Environmental Consequences (Utah)

Alternative COUT BAX-B in Utah would result in impacts on Colorado pikeminnow and razorback sucker critical habitat in the Green River south of the town of Green River, Utah. Following proper implementation of selective mitigation measures, Alternative COUT BAX-B in Utah would result in a 0.1 mile of low residual impact on designated critical habitats (Table 3-149).

Impacts on habitats potentially occupied by ESA-listed endangered species, as well as BLM, USFS, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-B would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT BAX-B would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT BAX-B would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT BAX-C in Colorado would be the same as Alternative COUT BAX-B in Colorado (Table 3-149 and MV-11b).

Affected Environment and Environmental Consequences (Utah)

Alternative COUT BAX-C in Utah is associated with 6 subbasins and directly or indirectly crosses 121 specially designated waters, 37 wetlands and riparian areas, 12 lentic waters, and 420 lotic waters, which most notably include Thompson and Floy washes; Deer, Pleasant, Coal Fork, Indian, Hop, Salt, West, Currant, and Huntington creeks; Green and San Pitch rivers; and Water Hollow. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Occurrences of special status fish and aquatic species recorded within 1 mile of the Alternative COUT BAX-C reference centerline in Utah would be the same as Alternative COUT BAX-B in Utah (Table 3-149 and MV-11b).

Environmental Consequences (Utah)

The environmental consequences for Alternative COUT BAX-C in Utah would be the same as Alternative COUT BAX-B in Utah.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-C would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT BAX-C would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT BAX-C would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT BAX-E in Colorado would be the same as Alternative COUT BAX-B in Colorado (Table 3-149 and MV-11b).

Affected Environment (Utah)

Alternative COUT BAX-E in Utah is associated with 7 subbasins and directly or indirectly crosses 78 specially designated waters, 45 wetlands and riparian areas, 14 lentic waters, and 440 lotic waters, which most notably include the San Pitch, Green, and Price rivers; Currant, Hop, Upper Huntington, Cottonwood, White Pine Fork, Mud, Gooseberry, and Miller creeks; Mud Water, Bob Wright, and Trail canyons; Floy, Water Hollow, and Thompson washes. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

The reference centerline crosses critical habitat for Colorado pikeminnow and razorback sucker in the Green River (Link U487). Additionally, 13 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT BAX-E reference centerline in Utah as follows (Table 3-149 and MV-11b):

- 2 occurrences of Bonneville cutthroat trout (Link U600)
- 1 occurrence of Colorado River cutthroat trout in tributaries of Gordon Creek including Mud Water and Bob Bishop canyons (Link U537)
- 1 occurrence of northern leopard frog in the Green River (Link U487)
- 2 occurrences of Columbia spotted frog in Currant Creek, the West Creek wetland complex; in the Burraston Ponds northwest of Nephi, Utah (Link U650); and within the Crawford Farm and Nuttall conservation easements (Link U636), which were purchased along the San Pitch River and associated ponds and wetlands by UDWR to protect valuable Columbia spotted frog habitat; these conservation easements are discussed in Section 3.2.15
- 1 occurrence of flannelmouth sucker in the Price River (Link U489)
- 3 occurrences of Colorado pikeminnow west of Crescent Junction and where the route crosses the Green River, just south of Green River, Utah (Links U486 and U487)
- 2 occurrences of razorback sucker where the route crosses the Green River, just south of Green River, Utah (Link U487)
- 1 occurrence of bonytail where the route crosses the Green River, just south of Green River, Utah (Link U487)

Environmental Consequences (Utah)

Alternative COUT BAX-E in Utah would affect designated critical habitat for Colorado pikeminnow and razorback sucker at Link U487 in the Green River south of the town of Green River, Utah (MV-11b). Following proper implementation of selective mitigation measures, impacts on federally listed critical habitat would include a 0.1 mile low residual impacts (Table 3-149).

Impacts on habitats potentially occupied by ESA-listed endangered species, as well as BLM-, USFS-, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT BAX-E would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT BAX-E would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT BAX-E would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The COUT alternative routes occur from U.S. Highway 40 in Colorado to Clover, Utah, by way of the Uinta Basin and cross the Colorado Plateaus, Wasatch and Uinta Mountains, and Central Basin and Range ecoregions (MV-11b). Habitat for special status fish, game fish, and other aquatic organisms include lentic, lotic, and wetland habitats in the Duchesne, Lower Green-Diamond, Lower White, San Pitch, San Rafael, Spanish Fork, Strawberry, Utah Lake, Lower Green-Desolation Canyon, Price, and Willow subbasins. The following sections describe fish and aquatic resources occurring along each alternative route and the potential impacts on those resources resulting from the Project. Table 3-150 summarizes miles of residual impacts on federally listed endangered fish as well as direct and indirect impacts on occurrences of special status aquatic species by state for each of the COUT alternative routes.

TABLE 3-150
SPECIAL STATUS FISH AND AQUATIC SPECIES OCCURRING IN THE ALTERNATIVE ROUTE STUDY CORRIDORS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	State	Special Status Fish and Aquatic Species	Miles of Residual Impacts[1]	Number of Occurrences Crossed by Alternative Route Study Corridor[2]
COUT-A	Colorado	None	0.0	0
	Utah	Bluehead sucker, Bonneville cutthroat trout, bonytail, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, northern leopard frog, razorback sucker, roundtail chub, southern leatherside chub	0.1	21
COUT-B	Colorado	None	0.0	0
	Utah	Bluehead sucker, Bonneville cutthroat trout, bonytail, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, northern leopard frog, razorback sucker, roundtail chub, southern leatherside chub	0.1	25
COUT-C (Agency and Applicant Preferred Alternative)	Colorado	None	0.0	0
	Utah	Bluehead sucker, Bonneville cutthroat trout, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, northern leopard frog, razorback sucker, roundtail chub, southern leatherside chub	0.3	26
COUT-H	Colorado	None	0.0	0
	Utah	Bluehead sucker, Bonneville cutthroat trout, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, northern leopard frog, razorback sucker, roundtail chub	0.3	20

TABLE 3-150
SPECIAL STATUS FISH AND AQUATIC SPECIES OCCURRING IN THE ALTERNATIVE ROUTE STUDY CORRIDORS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	State	Special Status Fish and Aquatic Species	Miles of Residual Impacts[1]	Number of Occurrences Crossed by Alternative Route Study Corridor[2]
COUT-I	Colorado	None	0.0	0
	Utah	Bluehead sucker, Colorado pikeminnow, Colorado River cutthroat trout, Columbia spotted frog, flannelmouth sucker, northern leopard frog, razorback sucker, roundtail chub, southern leatherside chub	0.3	19

NOTES:
[1]Residual impacts were only calculated where critical habitat for species listed under the Endangered Species Act is crossed by the reference centerline.
[2]Number of occurrences recorded within 1 mile of the alternative route. Some occurrences may be associated with multiple link numbers.

Alternative COUT-A

Affected Environment (Colorado)

Alternative COUT-A in Colorado is associated with only with the Lower White subbasin and directly or indirectly crosses 21 specially designated waters, two lentic waters, and 71 lotic waters. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4. Neither critical habitat nor occurrences of special status fish and aquatic species are recorded within 1 mile of this alternative route (Table 3-150 and MV-11b).

Environmental Consequences (Colorado)

Alternative COUT-A in Colorado would result in no impacts on federally listed endangered fish (Table 3-150). Impacts from surface disturbance could modify general aquatic and semi-aquatic habitats, resulting in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Affected Environment (Utah)

Alternative COUT-A in Utah is associated with 6 subbasins and directly or indirectly crosses 288 specially designated waters, 250 wetlands and riparian areas, 41 lentic waters, and 375 lotic waters, which most notably include the Baser, Big Sand, and Red washes; Blind Canyon, Water Hollow; Currant, Dry Gulch, Hop, Lake Fork, Left Fork Spencer, Montes, Red, Salt, Sheep, Soldier, Thistle, Tie Fork, and West creeks; Duchesne, Green, Lake Fork, Strawberry, and Uinta rivers. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

The reference centerline crosses critical habitat in the Green River for razorback sucker and Colorado pikeminnow in the Green River at Link U390. Additionally, 21 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT-A reference centerline in Utah as follows (Table 3-150 and MV-11b):

- 2 occurrences of Colorado pikeminnow in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 2 occurrences of razorback sucker in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 2 occurrences of bluehead sucker in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 1 occurrence of bonytail in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 1 occurrence of roundtail chub in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 3 occurrences of flannelmouth sucker occur in the Horseshoe Bend and Stirrup areas of the Green River (Link 390) and in the Duchesne River (Link U420)
- 5 occurrence of Bonneville cutthroat trout occur in Lake Fork Creek (a tributary to Soldier Creek) (Link U460), in Soldier Creek (Link U460), and Nebo Creek (Link U625) as well as Links U429, U433, and U621
- 2 occurrences of southern leatherside chub in Links U460, U621, U625
- 1 occurrence of Columbia spotted frog in Currant Creek north of Nephi, Utah (Link U650)
- 1 occurrence of Colorado River cutthroat trout in Willow Creek (tributary of Strawberry River) (Link U424)
- 1 occurrence of Northern Leopard Frog in in the Duchesne River (Link U420) and Link 410.

Environmental Consequences (Utah)

Alternative COUT-A in Utah would result in impacts on Colorado pikeminnow and razorback sucker critical habitat at Links U390 and U487 in the Green River (MV-11b). Following proper implementation of selective mitigation measures, Alternative COUT-A in Utah would result in a 0.1 mile low residual impact (Table 3-150).

Impacts on habitats potentially occupied by ESA-listed endangered species, as well as BLM, USFS, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-A would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-A would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-A would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-B in Colorado would be the same as COUT-A in Colorado (Table 3-150 and MV-11b).

Affected Environment (Utah)

Alternative COUT-B in Utah is associated with 7 subbasins and directly or indirectly crosses 334 specially designated waters, 194 wetlands and riparian areas (one of which is forested wetlands associated with the Green River), 30 lentic waters, and 499 lotic waters, which most notably include the Montes, Dry Gulch, Hop, Kyune, Sowers, Argyle, Horse, Willow, Beaver, Indian, Soldier, Sheep, Tie Fork, Thistle, Left Fork Spencer, and Currant creeks; Price, Lake Fork, Duchesne, and Uinta rivers; Jack and Blind canyons; Baser, Big Sand, Cottonwood, and Red washes; and Lateral No. 5. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

The reference centerline crosses critical habitat for Colorado pikeminnow and razorback sucker at the Stirrup area of the Green River (Link U390). Additionally, 25 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT-A reference centerline in Utah as follows (Table 3-150 and MV-11b):

- 2 occurrences of Colorado pikeminnow in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 2 occurrences of razorback sucker in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 3 occurrences of bluehead sucker in the Horseshoe Bend and Stirrup areas of the Green River (Link 390) and Link U527.
- 1 occurrence of bonytail in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 2 occurrence of roundtail chub in the Horseshoe Bend and Stirrup areas of the Green River (Link 390) and Link U527
- 2 occurrences of flannelmouth sucker occur in the Horseshoe Bend and Stirrup areas of the Green River (Link 390)
- 7 occurrence of Bonneville cutthroat trout in Clear Creek (Link U530), Soldier Creek (Link U460 and U539), Nebo Creek (Link U625), Tie Fork Creek (Link U539), Sheep Creek (Link U539), and Lake Fork Creek (Link U460) as well as Link U533 and Link U621
- 2 occurrences of southern leatherside chub in Thistle Creek (Link U625), Soldier Creek (Link U460), and Link U621
- 1 occurrence of Columbia spotted frog frogs in the wetlands supported by Currant Creek and the Burraston Ponds north of Nephi, Utah (Link U650)
- 1 occurrence of Colorado River cutthroat trout in in Tabbyune Creek (Link U530)
- 2 occurrence of Northern Leopard Frog in in the Big Sand Wash area (Link U430) as well as Links U410 and U527

Environmental Consequences (Utah)

Alternative COUT-B in Utah would impact critical habitats for Colorado pikeminnow and razorback chub in the Green River. Following proper implementation of selective mitigation measures, Alternative COUT-B would result in 0.1 mile of low residual impact (Table 3-150).

Impacts on habitats potentially occupied by ESA-listed endangered species, as well as BLM-, USFS-, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the Alternative COUT-B where occurrences or habitats are

documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-B would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-B would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-B would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-C in Colorado is associated with only the Lower White subbasin and directly or indirectly crosses 30 specially designated waters, 2 lentic waters, and 80 lotic waters. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4. Neither critical habitat nor occurrences of special status fish and aquatic species are recorded within 1 mile of this alternative route (Table 3-142 and MV-11b).

Environmental Consequences (Colorado)

The environmental consequences for Alternative COUT-C in Colorado would be the same as COUT-A in Colorado (Table 3-150 and MV-11b).

Affected Environment (Utah)

Alternative COUT-C in Utah is associated with 6 subbasins and directly or indirectly crosses 62 specially designated waters, 57 wetlands and riparian areas, 16 lentic waters, and 353 lotic waters, which most notably include the Argyle, Beaver, Currant, Hop, Horse, Indian, Kyune, Lake Fork, Left Fork Spencer, Minnie Maud, Salt, Sheep, Soldier, Summit, Thistle, Tie Fork, West, and Willow creeks; Blind and Jack canyons; Price and White rivers; and Water Hollow. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Critical habitat for Colorado pikeminnow is crossed by the reference centerline at the White River (Link U300) and critical habitat for Colorado pikeminnow and razorback sucker are crossed by the reference centerline at the Green River (Link U400). Additionally, 26 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT-A reference centerline in Utah as follows (Table 3-150 and MV-11b):

- 7 occurrences of Bonneville cutthroat trout in Tie Fork (Link U539), Sheep (Link U539), and Lake Fork (Link U460) Tabbyune (Link U530), Right Fork of Clear (Link U530), Soldier (Links U530 and U460), and Nebo creeks (Link U625) as well as Links U533 and U621.
- 2 occurrences of bluehead sucker in the Green River (Link U400)
- 2 occurrences of Colorado pikeminnow in the White (Link U300) and Green rivers (Link U400)

- 1 occurrence of Columbia spotted frog in the wetlands supported by Currant Creek as well as in the Burraston Ponds north of Nephi, Utah (Link U650)
- 2 occurrences of flannelmouth sucker in the Green River (Link U400)
- 4 occurrences of northern leopard frog in the Green River (Link U400) and Willow Creek (Link U300)
- 2 occurrences of razorback sucker in the Green River (Link U400) and Link 300.
- 2 occurrences of roundtail chub in the White River (Link U300) as well as Links U516 and U560
- 2 occurrences of southern leatherside chub in Thistle Creek (Link U625) as well as Links U460 and U621
- 2 occurrences of Colorado River Cutthroat Trout Links U516 and U560

Environmental Consequences (Utah)

Alternative COUT-C in Utah would impact Colorado pikeminnow and razorback sucker critical habitats. Following proper implementation of selective mitigation measures, Alternative COUT-C would result in a 0.3 mile low residual impact (Table 3-150).

Impacts on habitats potentially occupied by BLM, USFS, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-C would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-C would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-C would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The 345kV Bears Ears to Bonanza transmission line relocation is located in the Lower White subbasin and is associated with both specially designated impaired waters and intermittent streams. Components that would be relocated do not cross designated critical habitat for federally listed fish and aquatic resources.

Based on the criteria used to assess the level of impacts (Table 3-146) for the EIS, there would be no identifiable impacts from relocating the transmission line components on fish and aquatic resources. The types of impacts associated with relocating the transmission line would be similar to the effects of construction of the 500kV transmission line. The types of potential effects that may occur regarding fish and aquatic resources are described in Section 3.2.10.4.

Alternative COUT-H

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-H in Colorado would be the same as COUT-C in Colorado (Table 3-142 and MV-11b).

Affected Environment (Utah)

Alternative COUT-H in Utah is associated with 7 subbasins and directly or indirectly crosses 75 specially designated waters, 39 wetlands and riparian areas, 19 lentic waters, and 393 lotic waters, which most notably include the Argyle, Cottonwood, Currant, Gooseberry, Hop, Minnie Maud, Mud, North Fork Gordon, Salt, Summit, Upper Huntington, West, White Pine Fork, and Willow creeks; Boarding House, Deep, Mathis, and Trail canyons; Green, Price, and San Pitch rivers. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Critical habitat for Colorado pikeminnow is crossed by the reference centerline at the White River (Link U300) and critical habitat for Colorado pikeminnow and razorback sucker are crossed by the reference centerline at the Green River (Link U400). Additionally, 20 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT-H reference centerline in Utah as follows (Table 3-150 and MV-11b):

- 4 occurrences of bluehead sucker in the Green River (Link U400) and Willow Creek (Link U435 and U545);
- 2 occurrences of Bonneville cutthroat trout in the West Fork of Gooseberry Creek (Link U600) and Fairview Canyon at White Pine Fork (Link U600)
- 2 occurrences of Colorado pikeminnow in the White (Link U300) and Green rivers (Link U400);
- 2 occurrences of Columbia spotted frog in Currant Creek north of Nephi, Utah (Link U650), in the Burraston Ponds north of Nephi, Utah (Links U636 and U650) and within the Crawford Farm and Nuttall conservation easements (Link U636), which were purchased along the San Pitch River and associated ponds and wetlands by UDWR to protect valuable Columbia spotted frog habitat. These conservation easements are discussed in Section 3.2.15.
- 2 occurrences of flannelmouth sucker in the Green River (Link U400)
- 5 occurrences of northern leopard frog in the White River (Link U300), Green River (Link U400), the Price River (Link U546), and Link U545
- 2 occurrences of razorback sucker in the Green River (Link U400) and Link U300
- 1 occurrence of roundtail chub in the White River (Link U300)

Environmental Consequences (Utah)

Alternative COUT-H in Utah would result in impacts on Colorado pikeminnow and razorback sucker critical habitats. Following proper implementation of selective mitigation measures Alternative COUT-H would result in a 0.3 mile low residual impact (Table 3-150).

Impacts on habitats potentially occupied by ESA-listed endangered species, as well as BLM, USFS, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-H would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-H would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-H would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on fish and aquatic resources from the Bears Ears to Bonanza 345kV transmission line relocation for Alternative COUT-H would be the same as Alternative COUT-C.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-I in Colorado would be the same as COUT-H in Colorado (Table 3-150 and MV-11b).

Affected Environment (Utah)

Alternative COUT-I in Utah is associated with 7 subbasins and directly or indirectly crosses 114 specially designated waters, 45 wetlands and riparian areas, 20 lentic waters, and 542 lotic waters, which most notably include the Argyle, Cedar, Coal, Coal Fork, Currant, Deer, Hop, Huntington, Indian, Miller, Minnie Maud, Pleasant, Salt, Soldier, Summit, West, and Willow creeks; Green, Price, San Pitch, and White rivers; Marsing Wash, and Water Hollow. Detailed information regarding aquatic habitat classification and analysis is located in Section 3.2.4.

Critical habitat for Colorado pikeminnow and razorback sucker is crossed by reference centerline at the White River (Link U300) and Green River (Link U400). Additionally, 19 occurrences of special status fish and aquatic species are recorded within 1 mile of the Alternative COUT-I reference centerline in Utah as follows (Table 3-150 and MV-11b):

- 3 occurrences of bluehead sucker in the Green River (Link U400) and Link U498
- 2 occurrences of Colorado pikeminnow in the White River (Link U300), Green River (Link U400)
- 1 occurrence of Colorado River cutthroat trout in Indian Creek (Link U630) and Link U629
- 2 occurrences of Columbia spotted frog in the San Pitch River (Link U631), in Currant Creek north of Nephi, Utah (Link U650), in the ponds east of the San Pitch River, north of Mount Pleasant, Utah (Link U631), the riparian zone associated with the San Pitch River and near U.S. Highway 89, north of Mount Pleasant, Utah (Link U631), the Currant Creek and West Creek wetland complexes and in the Burraston Ponds northwest of Nephi, Utah (Link U650)
- 2 occurrences of flannelmouth sucker in the Green River (Link U400)

- 5 occurrences of northern leopard frog in the White River (Link U300), Little North Creek (Link U631), Green River (Link U400), in the ponds east of the San Pitch River, north of Mount Pleasant, Utah (Link U631) and Link U630
- 2 occurrences of razorback sucker in the Green River (Link U400) and Link U300
- 1 occurrence of roundtail chub in the White River (Link U300).
- 1 occurrence of southern leatherside chub Link U630 and U631

Environmental Consequences (Utah)

Alternative COUT-I in Utah would result in impacts on Colorado pikeminnow and razorback sucker critical habitats and occurrences. Following proper implementation of selective mitigation measures, Alternative COUT-I would result in a 0.3 mile low residual impact (Table 3-150).

Impacts on habitats potentially occupied by ESA-listed endangered species, as well as BLM, USFS, and/or state-listed special status species and other aquatic and/or semi-aquatic species could result from construction, operation, and maintenance of the alternative route where occurrences or habitats are documented in the alternative route study corridor. Modification of habitats would result in a short-term reduction of habitat quality and quantity and potentially could result in mortality of individuals.

Results of Additional Analysis Conducted by the U.S. Forest Service

The USFS evaluated whether implementation of Alternative COUT-I would be in conformance with USFS policies pertaining to management of USFS sensitive and MIS species and standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. The results of this evaluation were documented in the Fish and Aquatic Resources Specialist Report (MIS and sensitive species) available for review and download from the Project website and in the Administrative Record (LRMP compliance evaluation). The evaluation determined that implementation of Alternative COUT-I would be in conformance with standards, guidelines, and management objectives pertaining to fish and aquatic resources contained in applicable USFS LRMPs. For USFS sensitive species, the analysis found that Alternative COUT-I would either have no effect or may affect individuals but would not cause a trend towards federal listing or loss of viability for all USFS sensitive species in the Project area. For MIS species, the analysis found that the project would not affect the existing forest-wide population trends for all MIS species in the Project area (USFS 2015c).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on fish and aquatic resources from the Bears Ears to Bonanza 345kV transmission line relocation for Alternative COUT-I would be the same as Alternative COUT-C.

3.2.10.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A is located on the Wyoming/Colorado state line in the Little Snake Subbasin where the landscape is dominated by sagebrush, grassland, and pinyon-juniper habitats. The siting area is located on the south slope of the Powder Rim and is primarily comprised of the Cherokee Creek and Powder Wash drainages. Siting Area A contains perennial and intermittent lentic and lotic systems, riparian areas, and wetlands located in drainages that convey water south into the Little Snake River. No occurrences of special status fish and aquatic species were inventoried in Siting Area A; but due to the presence of suitable habitat, various fish and other aquatic and/or semi aquatic species likely occur in the area.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Powder Wash series compensation station are included in the disturbance analysis for Alternative WYCO-B (Table 3-148). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B is located in Colorado in the Little Snake Subbasin where the landscape is dominated by sagebrush, grassland, and pinyon-juniper habitats. The siting area is generally located in Nine Mile Basin where Shafer's Draw, Nipple Gulch, and South Nipple Gulch convey water into the Little Snake River. Siting Area B contains perennial and intermittent lentic and lotic systems and is situated along approximately 14 miles of the Little Snake River. No occurrences of special status fish and aquatic species were inventoried in Siting Area B; but due to the presence of suitable habitat, various fish and other aquatic and/or semi aquatic species likely occur in the area.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Nine Mile Basin series compensation station are included in the disturbance analysis for Alternative WYCO-B (Table 3-148). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Siting Area C – Maybell

Affected Environment

Siting Area C is located in Colorado in the Little Snake and Lower Yampa subbasins where the landscape is dominated by sagebrush, grassland, and pinyon-juniper habitats adjacent to agricultural areas. Siting Area C contains perennial and intermittent lentic and lotic systems, wetlands, riparian areas, and specially designated waters that convey water to the Yampa River. No occurrences of special status fish and aquatic species were inventoried in Siting Area C; but due to the presence of suitable habitat, various fish and other aquatic and/or semi aquatic species likely occur in the area. Additionally, the siting area is situated along approximately 6 miles of the Yampa River where the river is listed as critical habitat for Colorado pikeminnow.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Maybell series compensation station are included in the disturbance analysis for Alternative WYCO-B (Table 3-148). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and

aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Siting Area D is located in Colorado in the Lower Yampa subbasin where the landscape is dominated by sagebrush and grassland habitats adjacent to agricultural areas. Siting Area D contains perennial and intermittent lentic and lotic systems, wetlands, riparian areas, and a spring that are in watersheds that convey water to the Yampa River. No occurrences of special status fish and aquatic species were inventoried in Siting Area D; but due to the presence of suitable habitat, various fish and other aquatic and/or semi aquatic species likely occur in the area. Additionally, the siting area is situated along approximately 1.5 miles of the Yampa River where the river is designated critical habitat for Colorado pikeminnow.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Bell Rock series compensation station are included in the disturbance analysis for Alternative WYCO-D (Table 3-148). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E

Siting Area G – Green River

Affected Environment

Siting Area G is located in the Lower Green subbasin, just west of the town of Green River, Utah, where the landscape is dominated by sagebrush and salt desert habitats. The Green River series compensation station siting area contains intermittent lotic systems, wetlands, and riparian areas. Saleratus Wash supports a large contiguous wetlands and riparian area. Cottonwood and Fivemile washes also could be affected, but these drainages receive sparse precipitation and thus have little riparian vegetation associated with them. Siting Area G is located in the upper reaches of watersheds that convey water to the Green River. No occurrences of special status fish and aquatic species were inventoried in Siting Area G; but due to the presence of suitable habitat, various fish and other aquatic and/or semi aquatic species likely occur in the area. Additionally, the siting area is located upstream from the Green River where those waters are designated as critical habitat for Colorado pikeminnow and razorback sucker.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Green River series compensation station are included in the disturbance analysis for Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E (Table 3-149). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Siting Area F is located in the Duchesne subbasin just south of the town of Roosevelt, Utah, where the landscape is dominated by sagebrush and salt desert habitats adjacent to agricultural and residential areas. Siting Area F contains a large number of perennial and intermittent lentic lotic systems, including Dry Gulch, Cottonwood, and Montes creeks, Lateral C Canal, the Uinta River, Bottle Hollow Reservoir, associated riparian areas, and many areas supporting wetlands located in drainages that convey water into the Uinta River and shortly thereafter, into the Duchesne River. No occurrences of special status fish and aquatic species were inventoried in Siting Area F; but due to the presence of suitable habitat, various fish and other aquatic and/or semi aquatic species likely occur in the area. Additionally, the siting area is located upstream from the Duchesne River where those waters are designated as critical habitat for razorback sucker.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Roosevelt series compensation station are included in the disturbance analysis for Alternatives COUT-A (Table 3-150). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B would have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Siting Area E is located in the Lower White subbasin in Utah where the landscape is sparsely vegetated and semi-arid and dominated by sagebrush and salt desert shrub habitats. Siting Area E contains few intermittent lentic and lotic systems and is generally located in the Coyote Wash drainage that conveys water into the White River. No occurrences of special status fish and aquatic species were inventoried in Siting Area E.

Environmental Consequences

The potential effects on fish and aquatic resources from the construction of the Bonanza series compensation station are included in the disturbance analysis for Alternatives COUT-C (Table 3-150). Placement and design of the station would be done in a manner that would largely avoid fish and aquatic resources to the extent feasible. Areas where ground-disturbing activities associated with construction, operation, and maintenance of the station could not be avoided could result in minor impacts on fish and

aquatic resources. Following proper implementation of design features of the Proposed Action, selective mitigation measures, and site-specific design features detailed in the POD, potential impacts on fish and aquatic resources would be mitigated or reduced to minor levels.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.11 Land Use

3.2.11.1 Introduction and Regulatory Framework

Land-use resources include existing land use, future land use, authorized projects, and zoning and general plan management direction. Land-use resources were identified and evaluated for all jurisdictions occurring in the 2-mile-wide alternative route study corridors.

Issues raised by the public and agencies during Project scoping and preparation of the EIS related to potential impacts on land-use resources are identified and evaluated by alternative route in this section (Section 3.2.11.4). Other land-use-related resources in the Project area are identified and evaluated in the following sections:

- Parks, Preservation, and Recreation Resources (Section 3.2.12)
- Transportation and Access (Section 3.2.13)
- Congressional Designations (Section 3.2.14)
- Special Designations and Other Management Areas (Section 3.2.15)
- Lands with Wilderness Characteristics (Section 3.2.16)
- Inventoried Roadless Areas and Unroaded/Undeveloped Areas (Section 3.2.17)

3.2.11.1.1 Regulatory Framework

Various regulatory systems are in place throughout the Project area that direct management to all levels of jurisdiction (federal, state, and local). BLM-, NPS-, and USFS-administered lands occurring in the Project area are managed by direction provided in the relevant management plans (e.g, RMPs and LRMPs) that establish the goals and objectives for the management of resources. The approved management plans and their amendments relevant to the Project area are listed in Section 1.7.3.

In each respective state in the Project area, state-owned lands are managed under the Wyoming OSLI, the Colorado State Land Board, and the Utah SITLA, as applicable. In addition, some lands owned by the State of Utah are managed by the UDWR, who also manage lands as WMAs (Section 3.2.15), and the Utah Division of Forestry Fire and State Lands (FFSL), who owns and manages some sovereign lands. Each state entity manages various active leases for present and future development, as well as other activities that occur on the lands.

The *Colorado State Trust Lands Guide* (Colorado Department of Natural Resources 2008) provides information about the nearly 3 million acres of state trust lands in Colorado. It includes guidelines for use, descriptions of the various areas available under the State Trust Lands program, and maps to designated areas.

Privately owned lands are regulated by local zoning ordinances and general plans. The Colorado State Constitution provides counties with the rights to develop zoning ordinances, as found in Titles 16, 24, 29, 30, 34, 38, and 43 (Colorado Department of Local Affairs 2008). The Utah Land Use Development Management Act (10 Utah State Code 09a [municipal] and 17 Utah State Code 27a [county]) requires counties and incorporated municipalities to develop a zoning map, zoning ordinance, and general plan. There is no land-use management act for Wyoming.

3.2.11.2 Issues Identified for Analysis

Several issues were raised by the public and agencies (including BLM and USFS realty specialists, recreation planners, and other agency staff and planners and representatives from cooperating agencies) during the Project scoping period and data inventory phases of this EIS. The issues and information related to potential impacts on land use are included below and were used to guide the focus and level of detail of the NEPA analysis. This section is organized to reflect the issues identified for existing land use, future land use, authorized projects, and zoning and general plan management direction.

In addition to issues raised by the public and agencies during the Project scoping period, other issues were identified during the data inventory and assessment and are described in Tables 3-151 through 3-154.

Many issues presented by the public and agencies have been addressed with the addition, subtraction, and alteration of the alternative routes since the Project scoping period and the Agency Interdisciplinary Team meetings.

Issues Related to Existing Land Use

TABLE 3-151
EXISTING LAND USE ISSUES

Issue Raised	Concern	General Location/Description	Relevant Alternative Routes
Agriculture (includes center-pivot, irrigated, pasture land, dryland)	Loss of income (especially when agricultural practices are the primary source of income), reduced property value, damage to natural springs, and loss of related farming infrastructure (e.g., a barn or storage facility)	Throughout the study corridors	All WYCO, COUT BAX, COUT
Airports and landing strips	Towers interfering with airport and landing strip operations	Throughout the study corridors	All WYCO, COUT BAX, COUT
Commercial	Reduced property value	Throughout the study corridors	All WYCO, COUT BAX, COUT
Existing rights-of-way	Siting the Project near existing over-head utilities and impacts on the properties near those existing rights-of-way	Throughout the study corridors	All WYCO, COUT BAX, COUT
Grazing allotments and rangeland areas (fences, cattle guards, other related infrastructure)	Project interference with grazing allotments and operation of associated infrastructure, including lambing and calving areas	Throughout the study corridors	All WYCO, COUT BAX, COUT
Industrial	Project interference with industrial land uses and operation	Throughout the study corridors	All WYCO, COUT BAX, COUT

TABLE 3-151
EXISTING LAND USE ISSUES

Issue Raised	Concern	General Location/Description	Relevant Alternative Routes
Incorporated areas (e.g., Rawlins, Baggs, Hanna) and communities (e.g., Fort Steele)	Proximity of the Project to the boundaries of the incorporated areas and communities, and the potential of the Project to affect existing communities' ability to expand	Along Interstate 80 in south-central Wyoming, through western Colorado and along U.S. Highway 89 and other areas in Utah	All WYCO, COUT BAX, COUT
Mining Operations	Interruption of existing surface mining operations and subsidence from formerly (coal) mined sites.	Mining operations located in south-central Wyoming and western Colorado	All WYCO and COUT
Oil and gas projects	Project impacting the Anadarko and Chevron oil and gas fields and the Greater Natural Buttes Project	Located in northeast Utah, south of the City of Vernal	All COUT BAX and COUT
Pipeline projects (water and other resources)	Siting the Project near existing underground utilities and impacts on the property	Throughout the study corridors	All WYCO, COUT BAX, COUT
Prisons	Project crossing in proximity to the Wyoming State Penitentiary	South of Rawlins, Wyoming and Interstate 80	All WYCO
Reservoirs and dams	Project in proximity to Strawberry Reservoir in Utah	Wasatch County, Utah	COUT-A
Residential	Presence of transmission towers on property, visual impacts, reduced property values, health concerns, private land rights, lower quality of life, noise disturbance, and limiting use of property	Throughout the study corridors, specifically recreational cabins and dispersed residential	All WYCO, COUT BAX, COUT
Schools	Project in the vicinity of schools and other educational facilities	Throughout the study corridors	All WYCO, COUT BAX, COUT
State Trust Land	Project may interfere with current land uses and active leases Refer to the Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridor discussions under each alternative for a description of the state trust lands crossed by each alternative route	Throughout Utah and Colorado in the study corridors	All COUT BAX and COUT
Uranium tailings	Effects of the Project on the uranium tailings buried adjacent to the Project	Near Crescent Junction, Utah where Interstate 70 and U.S. Highway 191 intersect	All COUT BAX

TABLE 3-151 EXISTING LAND USE ISSUES			
Issue Raised	**Concern**	**General Location/Description**	**Relevant Alternative Routes**
Project would be outside of designated utility corridor or in a corridor designated as underground or pipeline	Plan amendment may be required if the Project is located outside of designated utility corridor crossing federal land	Refer to Tables 3-179, 3-184, and 3-189) for information regarding Land Ownership, Parallel Linear Facilities, and Utility Corridors, related to the study corridors	All WYCO, COUT BAX, COUT

Issues Related to Authorized Projects

TABLE 3-152 AUTHORIZED PROJECT ISSUES			
Issue Raised	**Concern**	**General Location/Description**	**Relevant Alternative Routes**
Conflicts with authorized reservoirs and water projects	Project could limit development of the Narrows Dam and Reservoir (which has been authorized for development)	Sanpete County, Utah	COUT BAX-E, COUT-H
Conflicts with authorized residential developments	Project could limit possibilities for development of residential property and reduce property values and income based on current plans for property	Throughout the study corridors	All WYCO, COUT BAX, COUT
Conflicts with authorized land use (authorized development projects) including, but not limited to, airports, agriculture, commercial, industrial (e.g., mine expansion projects, oil and gas facilities), pipelines, proposed or designated rights-of-way or corridors, recreational cabins, and wind energy development	Project could limit possibilities of development in certain areas, may stop a project, or reduce property values and income based on current plans for property	Throughout the study corridors	All WYCO, COUT BAX, COUT

Issues Related to Future Land Use

TABLE 3-153
FUTURE LAND USE ISSUES

Issue Raised	Concern	General Location/Description	Relevant Alternative Routes
Conflicts with future land use (proposed development projects) including, but not limited to, airports, agriculture, commercial, industrial (e.g., mine expansion projects, oil and gas facilities), pipelines, proposed or designated rights-of-way or corridors, recreational cabins, and wind energy development	Project could limit possibilities of development in certain areas, may stop a project, or reduce property values and income based on current plans for property	Throughout the study corridors	All WYCO, COUT BAX, COUT
Conflicts with future residential developments	Project could limit possibilities for development of residential property and reduce property values and income based on current plans for property	Throughout the study corridors	All WYCO, COUT BAX, COUT
Proposed nuclear power plant	Project could affect the proposed Blue Castle Holdings project	Near City of Green River, Utah	All COUT BAX
Conflicts with the proposed Uintah Basin Railroad	Project could interfere with construction of and/or management of the proposed railroad.	Duchesne and Uintah counties, Utah	All COUT alternative routes

Issues Related to Zoning and General Plan Management Direction

TABLE 3-154
ZONING AND GENERAL PLAN MANAGEMENT DIRECTION ISSUES

Issues Raised	Concern	General Location/Description	Relevant Alternative Routes
Conflicts with city or county land-use plan designations and current zoning areas (e.g., residential, parks/ preservation/open space, commercial, agriculture, proposed or designated rights-of-way or corridors, etc.)	Conflicts between the Project and regulations, plans and guidelines of the cities and counties in the study corridors. These conflicts may include master/general plan designations and current zoning areas, based on municipal ordinances and maps.	Throughout the study corridors	All WYCO, COUT BAX, COUT

3.2.11.3 Regional Setting

Diverse land uses occur in the Project area. Typical development patterns in the 2-mile-wide alternative route study corridors include rural residential, agricultural, commercial, and industrial uses. Focused

development occurs along major highways and railroad lines. Vast remote, vacant, and undeveloped lands occur throughout the Project study corridors.

The majority of lands in the study corridors are federally administered lands, managed by the BLM or USFS.

3.2.11.3.1 Wyoming

The predominant land uses in Sweetwater and Carbon counties in Wyoming include open rangeland with interspersed oil and gas developments. Cattle and other livestock graze throughout these areas. Some irrigated and dryland agriculture operations occur near the North Platte River, in the Fort Steele area off the north side of I-80, and near the populated areas of the towns of Hanna, Baggs, and Dixon and south of the City of Rawlins.

From the planned Aeolus Substation, south along U.S. Highway 30 to Hanna, the open rangeland is interspersed with a small amount of residential and commercial development. The Town of Hanna has a population of approximately 800. The land uses in the Hanna area are mainly residential with some commercial and a large underground coal mine (Hanna Coal Mine).

The community of Fort Steele, the Town of Sinclair, and the City of Rawlins are situated along I-80 and include residential, commercial, and industrial development. The Sinclair oil refinery is located in the Town of Sinclair.

South of I-80, along Wyoming Highway 789, oil and gas development exists on both the west and east side of the highway to the Town of Baggs. The towns of Baggs and Dixon are located on the Wyoming/Colorado border and have populations of approximately 340 and 80, respectively. Rural residential and agricultural plots stretch between the two towns, and extend to the west and east. Irrigated and dryland farm practices are the main agricultural uses with some areas used for grazing.

3.2.11.3.2 Colorado

The study corridors in Moffat, Routt, Rio Blanco, Garfield, and Mesa counties in Colorado have a diverse landscape with development ranging from open rangeland and agricultural uses to rural residential and oil and gas development. The terrain includes large stretches of plateau areas, rolling hills, and some steep mountain terrain.

From the Wyoming/Colorado border proceeding south along Colorado State Highway 13, oil and gas development is mixed with rural residential and ranching operations. North of the City of Craig, a greater concentration of residential development begins with ranchettes varying in size scattered on both the west and east side of the highway. Irrigated and dryland farmland and grazing occur in this vicinity.

Colorado State Highway 13 connects to U.S. Highway 40, which proceeds west through Craig before continuing south of Craig. With a population of approximately 9,500, Craig has a mix of residential, commercial, and light industrial facilities. The Craig-Moffat County Airport is located southeast of Craig.

U.S. Highway 40 proceeds west through rolling terrain until it reaches the Town of Maybell, where it turns to the south and eventually to the west toward the Colorado/Utah border. The Town of Maybell has an approximate population of 70 and consists of residences with a few commercial businesses. To the west of the Town of Maybell, U.S. Highway 40 passes by Deerlodge Road, which is the southern entrance of Dinosaur National Monument, and then continues west through the Town of Dinosaur before coming to the Colorado/Utah state border. Irrigated and dryland farmlands, and rural residential properties are scattered throughout the landscape along U.S. Highway 40 to the state border.

On the western edge of the city limits of Craig, Colorado State Highway 13 continues south, passing through areas of steeper terrain and paralleling a portion of the Yampa River, west of the Tri-State Generation and Transmission's Craig Station. Irrigated agricultural plots and rural residences are scattered across the landscape. Colorado State Highway 13 passes through the Town of Meeker before it connects with Colorado State Highway 64, west of town, and turns back to the south. The Town of Meeker has an approximate population of 2,200 with a mix of residential properties and commercial facilities.

Colorado State Highway 64 proceeds west, paralleling the White River. Open rangeland and rural residences are spread out along Colorado State Highway 64 with small clusters of residences and farmland (both irrigated and dryland) periodically occurring. Colorado State Highway 64 passes through the Town of Rangely where the population is approximately 2,600 with residential, commercial, and some light industrial uses located in the town's limits. South of Rangely towards Fruita, there is steep mountainous terrain, including Baxter Pass. From Baxter Pass to the south, there is dense oil and gas development along the state border to I-70, north of Fruita.

3.2.11.3.3 Utah

Similar to Colorado, the study corridors in Uintah, Grand, Duchesne, Carbon, Emery, Wasatch, Utah, Sanpete, and Juab counties in Utah have a diverse landscape with development that ranges from semi-urban to agricultural, rural residential, oil and gas development, and open rangeland with large expanses of undeveloped land. The terrain includes large stretches of plateau areas, rolling hills, and some steep mountain terrain. Proceeding west from Colorado, the 2-mile-wide alternative route study corridors, in general, split to the north along U.S. Highway 40, to the south along I-70, and centrally from the community of Bonanza to Helper City.

The northern alternative routes proceed from the Utah/Colorado border toward the communities of Fort Duchesne and Roosevelt City. The alternative routes then continue along U.S. Highway 40 toward the Town of Fruitland before turning southwest through the Uinta National Forest to the Clover Substation.

Along the northern alternative routes, there are many areas of irrigated and dryland farmland and scattered rural residences south of the City of Vernal and near the community of Jensen (located along the Green River). The populations of Vernal and Jensen are approximately 9,200 and 400, respectively with residential, commercial, and industrial development occurring primarily in Vernal. Along U.S. Highway 40 toward Strawberry Reservoir, numerous formal and dispersed recreation opportunities exist. Proceeding west across the Uinta portion of the Uinta-Wasatch-Cache National Forest the terrain is steep and heavily wooded with dispersed recreation areas, and motorized and non-motorized trails.

The southern alternative routes proceed from the Utah/Colorado border along I-70 to the City of Green River, Utah (passing through generally flat open terrain), where the routes split with one portion proceeding toward Huntington City, through the Manti-La Sal National Forest to the City of Fountain Green, and terminating at the Clover Substation. The second portion proceeds north toward the ghost town of Woodside along U.S. Highway 6 before proceeding west, south of the City of Wellington through irrigated agricultural areas. The alternative routes then progress north, west of the City of Price, which has a population of 8,700 and passes through a variety of residential, commercial, and industrial land uses. Irrigated and dryland farming are scattered along the city limits and U.S. Highway 6. The routes proceed west to the Clover Substation, passing through rural residential and agricultural areas (including irrigated and dryland farmland and grazing lands).

The central alternative routes proceed from the Utah/Colorado border toward Bonanza, through open rangeland and existing and future oil and gas development areas, heading in a southwestern direction

through the Uintah and Ouray Indian Reservation. The study corridors cross through dense existing and future oil and gas development areas in relatively flat terrain after passing out of the Uintah and Ouray Indian Reservation, continue through the Ashley National Forest turning south toward Price, and then proceed west toward the Clover Substation passing through the Manti-La Sal National Forest.

3.2.11.4 Study Methodology

This section discusses the study methodologies used for the major land-use categories analyzed in the 2-mile-wide alternative route study corridors:

- Existing land use
- Authorized projects
- Future land use
- Zoning and general plan management direction

All land-use categories were inventoried in a 2-mile-wide alternative route study corridor (1 mile on either side of the reference centerline of the alternative routes) to identify land uses that could be affected both directly and indirectly by Project construction, operation, and maintenance.

Existing land uses were inventoried by reviewing and interpreting aerial photography, followed by verifying the data through field reconnaissance in 2009, 2011, and 2013.

Authorized projects also were inventoried for the Project study area. Authorized projects are development that have not been built but have been authorized by the applicable decision-maker to be constructed at any time. Authorized projects were not included in the existing land use impact assessment because, in general, these projects only have large development boundaries and the exact area where development may occur is not yet defined. If authorized projects were to be included in the existing land use impact analysis, the assessed levels and extent of impacts would be overestimated and would not reflect the actual land-use development that would occur. Authorized projects in the right-of-way are listed for each alternative route. Authorized projects also are discussed in the Chapter 4 cumulative analysis as past and present projects.

Future projects and information for planned and proposed projects were collected from federal, state, county, and local governments, as well as from private entities proposing projects on private or public lands.

Zoning and general plan management direction was inventoried by reviewing all city and county general/comprehensive plans and zoning ordinances, as available. After review of the plans and/or zoning ordinances, a generalized zoning data layer was compiled using city and county general plan mapping data. Where general plan mapping data was not available, zoning ordinance mapping data was used.

The generalized zoning data layer was created by interpreting the land-use designations in the city or county plan/ordinance and grouping them into similar categories. For example, a variety of similar designations are used by municipalities for park/preservation areas (i.e., open space, greenbelt, or preservation area). All areas throughout the 2-mile-wide alternative route study corridors with designations closely matching park/preservation were generalized to one category: Park/Preservation. All zoning or general plan designations that were similar were grouped as appropriate.

Inventory data for all types of land uses listed above also were obtained from various materials and information provided by federal, state, and local agencies (counties and other departments), including the following:

- BLM, NPS, and USFS land and resource management plans and information concerning land-use classifications (plans provided in Section 1.7.3)
- Wyoming State Division of Land, Colorado Division of Parks and Wildlife and State Land Board, and Utah State Parks and SITLA (plans provided in Section 3.2.14)
- City and county land-use plans, including existing land use, zoning, and general plan data (plans provided below under Zoning and General Plan Management Direction)
- Private development plans, including energy development projects and residential developments
- Aerial photography of the alternative routes using images from the 2009 National Agriculture Imagery Program (NAIP)
- BLM –LR2000, which provides lease information on BLM lands

For graphic representation of the locations of existing land use; authorized projects; future land use; and zoning and general plan management direction, refer to MV-13 through MV-16. Further information on data inventoried is discussed below.

3.2.11.4.1 Inventory

This section discusses the inventory of land uses occurring in the 2-mile-wide alternative route study corridors. Although the following inventory lists many resources in the 2-mile-wide alternative route study corridors, only those resources potentially crossed or paralleled by the Project reference centerline or right-of-way are discussed and analyzed in detail in the Results section. The inventory data corresponds to the detailed impact analysis found in Section 3.2.11.5.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors

Land Jurisdiction

The study corridors cross portions of 2 counties in Wyoming, 5 counties in Colorado, and 9 counties in Utah, and include a variety of ownership and management entities including federal, state, and local land-management agencies. In addition, there are 7 incorporated cities and towns and 3 unincorporated communities in the study corridors.

Federal, state, and local agencies with land ownership or management responsibilities in the 2-mile-wide alternative route study corridors are listed in Tables 3-155 through 3-157.

TABLE 3-155
FEDERAL LAND JURISDICTION AND OWNERSHIP

Agency	Office/Management Responsibility		
	Wyoming	Colorado	Utah
U.S. Department of the Interior			
Bureau of Land Management	Rawlins Field Office	Little Snake, White River, and Grand Junction Field Offices	Vernal, Salt Lake, Fillmore, Richfield, Price, and Moab Field Offices
Bureau of Indian Affairs	–	–	Uintah and Ouray Indian Reservation
National Park Service	–	Dinosaur National Monument	–

TABLE 3-155 FEDERAL LAND JURISDICTION AND OWNERSHIP			
Agency	**Office/Management Responsibility**		
U.S. Department of Defense			
Military Reservations and U.S. Army Corps of Engineers	–	–	White Sands Missile Range, Green River Launch Complex
U.S. Department of Agriculture			
U.S. Forest Service	–	–	Ashley, Uinta, and Manti-La Sal National Forests

TABLE 3-156 STATE LAND JURISDICTION AND OWNERSHIP	
Department	**Management Responsibility**
Wyoming	
Wyoming Game and Fish Department	State wildlife, hunting and fishing opportunities and wildlife habitat management areas
Wyoming Office of State Lands and Investments	State properties, investments, and lands (both surface and subsurface)
Wyoming Department of Transportation[1]	State highways, roads, bridges, repairs, and maintenance
Colorado	
Colorado Division of Parks and Wildlife	State properties, including conservation easements on some private lands and state wildlife areas
Colorado State Land Board	State properties, investments, and lands (both surface and subsurface)
Colorado Department of Transportation[1]	State highways, roads, bridges, repairs, and maintenance
Utah	
State of Utah School and Institutional Trust Lands Administration	State properties, investments, and lands (both surface and subsurface)
Utah Division of Forestry, Fire, and State Lands	State forests, rangelands, sovereign lands and watersheds for its citizens and visitors
Utah Division of State Parks and Recreation	State parks, off-highway vehicle, boating, and trails programs
Utah Department of Transportation[1]	State highways, roads, bridges, repairs, and maintenance
Utah Division of Wildlife Resources	State wildlife, hunting and fishing opportunities and wildlife management areas
NOTE: [1]Transportation and access are addressed in Section 3.2.13.	

TABLE 3-157 LOCAL LAND JURISDICTION AND OWNERSHIP	
County	**Cities/Towns**
Wyoming	
Carbon	Town of Hanna
	City of Rawlins
Sweetwater	None
Colorado	
Garfield	None
Mesa	None

TABLE 3-157 LOCAL LAND JURISDICTION AND OWNERSHIP	
County	**Cities/Towns**
Moffat	Town of Dinosaur
Rio Blanco	Town of Rangely
Routt	None
Utah	
Carbon	Helper City
Duchesne	Roosevelt City
Emery	None
Grand	None
Juab	Nephi City
Sanpete	Mount Pleasant City
Uintah	Town of Ballard
	Community of Fort Duchesne
Utah	None
Wasatch	None

State Trust Lands

The state trust land leases in Wyoming, Colorado, and Utah will be discussed in the Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors section under each alternative route in the Results section (refer to Section 3.2.11.5). The state trust land leases will not be analyzed using initial and residual impacts as these lands and leases are not indicative of actual land use, but of land ownership. The impacts on the surface disturbance and uses on these lands will be captured and analyzed in the existing land use discussion of impacts. These leases will also be analyzed in Chapter 4 as part of the cumulative effects analysis under authorized and pending projects in the Project area.

Wyoming

State trust lands cover approximately 3.6 million acres and are granted by the federal government to the State of Wyoming under various acts of the U.S. Congress (Public Lands Interpretive Association 2014a). The funds generated by these lands, which are leased or sold or that users are charged to access or recreate on, are reserved for the sole benefit of public schools and certain other designated public institutions in Wyoming. Restrictions related to the development and construction of linear energy facilities on state trust lands will be assessed on a case-by-case basis by the State Land Board.

Colorado

State trust lands in Colorado are managed by the State Board of Land Commissioners (also known as the State Land Board), including approximately 3 million acres of surface land and 4 million acres of mineral rights established in 1876 under the Colorado Constitution Article IX Section 10 (Colorado Department of Natural Resources 2008). To generate revenue for public education and some State institutions (i.e., public buildings, penitentiaries, and universities), the federal government gave this land to Colorado for the state to lease the land for activities including agricultural purposes (such as grazing), mineral development, commercial development, and leasing lands for recreational activities. Seasonal stipulations and restrictions may apply regarding construction in some of these areas.

Utah

State trust lands managed in Utah are administered by SITLA, which was designated under the Utah Constitution Title 53C. This title established an administration and board to manage lands that Congress

granted to Utah to support schools and other beneficiary institutions, under the Utah Enabling Act of 1894 (State of Utah 2012a). State trust lands make up approximately 7 percent of the land in the State, including approximately 3.5 million surface land acres and 1.0 million acres of mineral only lands, providing financial benefits to 12 recipients; 95 percent goes to the Common Schools Trust, benefiting public schools in the state. Income is generated from these lands by renting and selling land for uses that include mineral extraction, agricultural practices such as grazing or growing crops, and commercial and industrial development. Restrictions related to the development and construction of linear energy facilities on SITLA land will be assessed on a case-by-case basis by SITLA.

Table 3-158 displays the state trust lands found in the study corridors for the Project.

TABLE 3-158
STATE TRUST LANDS AND
STATE INSTITUTIONAL TRUST LANDS ADMINISTRATION BY STATE

Name	Description	Relevant Alternative Routes
Wyoming – State Trust Lands		
State trust lands	State lands in Wyoming managed as state trust lands (e.g., typical state trust land leases including rights-of-way, oil and gas leases, and coal and hard rock leases)	All WYCO
Colorado – State Trust Lands		
Oil and gas leases	Owned by Cinco Land and Exploration Inc.; Langham Petroleum LLC; Quicksilver Resources Inc.; Antelope Energy Company LLC; Axia Energy LLC; Beartooth Oil and Gas Company; Gulfport Energy Corporation; QEP Energy Company; Yates Petroleum Corporation	All WYCO and COUT
Bakers Peak	Used for hunting Pronghorn antelope, mule deer, elk, sage-grouse, rabbit, and coyote (12,393 acres)	WYCO-D
Bald Mountain	Exchange of use on the land, part private land and part state trust land; State trust land used for hunting Pronghorn antelope, mule deer, elk, sage-grouse, rabbits, and small game (6,266 acres)	All WYCO
Elk Springs #3	Used for hunting Pronghorn antelope, mule deer, mountain lion, and small game (640 acres)	All WYCO
Pole Gulch	Used for hunting big game and small game (11,026 acres)	WYCO-D
South Nipple Rim	Used for hunting elk, mule deer, pronghorn antelope, and coyote (19,962 acres)	All WYCO except WYCO-D
Thornburg Draw	Used for hunting elk, mule deer, pronghorn antelope, and small game (640 acres)	WYCO-D
Twenty Mile	Exchange of use on the land, part private land and part state trust land; state trust land used for hunting mule deer, elk, and small game (1,206 acres)	WYCO-D
Utah – State Institutional Trust Lands Administration		
Gilsonite	Gilsonite mining leases in Uintah County	COUT-C, COUT-H, COUT-I
Mineral contracts	Mineral related contracts including potash and metalliferous mineral; 11 leases along the various alternative routes	All COUT BAX
Oil and gas contracts	Oil and gas related contracts and/or leases; 152 leases along the various alternative routes	All COUT BAX and COUT
Oil shale contracts	6 oil shale related contracts and/or leases crossed	COUT-C, COUT-H, COUT-I
Range Improvement contracts	Activities such as lop and scatter and stock watering lines; 9 leases along the various alternative route	All COUT BAX, COUT-H, COUT-I

TABLE 3-158 STATE TRUST LANDS AND STATE INSTITUTIONAL TRUST LANDS ADMINISTRATION BY STATE		
Name	**Description**	**Relevant Alternative Routes**
Special-use contracts	Special-use contracts including industrial uses, development predesignation, and agricultural uses; as few as 1 and as many as 33 leases occur along the various alternative routes	All COUT BAX and COUT alternative routes

Parallel Linear Energy Facilities

Existing linear energy-related facilities in the study corridors include transmission lines and pipelines. Table 3-159 provides a description of the major transmission line rights-of-way (230kV and greater) relevant to the study corridors. Table 3-160 provides a description of the owners of the major pipelines (greater than 6 inches) paralleled by the Project (refer to Maps 2-2a, 2-2b, and Map 3-7 for the locations of these facilities).

TABLE 3-159 MAJOR TRANSMISSION LINE RIGHTS-OF-WAY		
Linear Facility Name	**Links Paralleled**	**Alternative Routes Paralleled**
Difficulty to Miners 230-kilovolt (kV)	W15, W16, W21, W22	All WYCO
Miners to Foote Creek 230 kV	W22	All WYCO
Miners to Sinclair 230kV	W21, W22, W35	WYCO-B, WYCO-C, WYCO-F
Sinclair to Bar X 230kV	W30, W32, W101, W102, W128	All WYCO
Hayden to Artesia 138kV	C100, C101, C105, C106, C170, C171, C173, C174	All WYCO, COUT BAX, and COUT
Hayden to Craig 230kV	C101, C105	WYCO-D
Craig to Ault 345kV	C101, C105	WYCO-D
Craig to Bears Ears 345kV	C101, C105	WYCO-D
Craig to Rifle 230kV	C101, C105	WYCO-D
Craig to Rifle 345kV	C101, C105, C106,	WYCO-D
Craig PP - Craig Sub 1	C101, C105	WYCO-D
Craig PP - Sub 2	C101, C105	WYCO-D
Craig PP - Sub 3	C101, C105	WYCO-D
Craig Sub 1 - Sub 2	C101, C105	WYCO-D
Deseret Line	C177, C185	All COUT BAX
Rangely to Artesia 138kV	C188, U241, U242,	All COUT
Rangely to Meeker 138kV	C177, C185, C195	All COUT BAX
Bears Ears to Bonanza 345kV	C91, C92, C101, C105, C106, C170, C171, C173, C174, C175, C177, C186, C187, C188, U242, U260, U280, U285, U290	All WYCO, COUT BAX, COUT
Artesia to Vernal 138kV	U241	COUT-A, COUT-B, COUT-C
Bonanza to Rangely 138kV	U242, U242, U260, U280, U285, U290	COUT-C, COUT-H, COUT-I

TABLE 3-159
MAJOR TRANSMISSION LINE RIGHTS-OF-WAY

Linear Facility Name	Links Paralleled	Alternative Routes Paralleled
Bonanza to Vernal 138kV	U241, U260, U290, U310	All COUT
Camp Williams to Sigurd Reroute 1 and 2 – 345kV	U650	All COUT BAX and COUT
Carbon to Helper 138kV	U435, U545, U546	COUT-H
Jerusalem to Nebo 138kV	U631, U636, U637, U638, U639, U650	All COUT and COUT BAX
McFadden to Huntington Plant 138kV	U498, U628, U629, U765	COUT BAX-B, COUT BAX-C, COUT-I
Mona to Bonanza 345kV	U241, U260, U290, U310, U390, U391, U410, U420, U421, U424, U425, U426, U427, U428, U429, U430, U433, U460, U539, U621, U625, U631, U636, U637, U638, U639, U650	All COUT BAX and COUT
Mounds SW PK to Moab 138kV	U487, U488, U489, U734	All COUT BAX
Mounds SW PK to Helper 138kV	U489, U492, U494, U495, U545, U546	COUT BAX-E, COUT-H, COUT-I
Nebo to Martin Marietta 138kV	U650	All COUT BAX and COUT
Spanish Fork to Carbon 138kV	U433, U435, U460, U524, U527, U530, U533, U539, U545, U560	COUT-A, COUT-B, COUT-C, COUT-H
Mounds SW PK to East Carbon 138kV	U489	COUT BAX-E
Spanish Fork to Emery 345kV	U433, U530, U533, U537, U539, U544, U548, U585, U586, U587, U600, U628, U731, U765	All COUT BAX and COUT
Spanish Fork to Huntington 345kV	U433 U498, U530, U533, U537, U539, U544, U548, U585, U586, U587, U600, U628, U629, U765	All COUT BAX and COUT
Mona to Huntington 345kV	U629, U630, U631, U636, U637, U638, U639, U650	All COUT BAX and COUT
Mona to Oquirrh 500kV	U650	All COUT BAX and COUT
Sigurd to Mona 345kV	U650	All COUT BAX and COUT
Upalco to Ashley 138kV	U420, U430	COUT-A, COUT-B
Upalco to Panther 138kV	U406, U430, U431, U432, U434, U435, U436, U438, U442, U445, U504, U508, U523, U524, U525, U545	COUT-B, COUT-C, COUT-H, COUT-I
Huntington to Pinto 345kV	U487, U488, U498, U628, U629, U728, U729, U730, U732, U733, U734, U765	All COUT BAX, COUT-I
Wellington-Coal Creek SW RK	U492	COUT-I
Huntington to Emery 345kV	U498, U628, U629, U731, U765	COUT BAX- B, COUT BAX-C, COUT-I, COUT-I

Map 3-7

Alternative Routes Parallel to Existing Transmission Lines or Pipelines

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Alternative Routes Parallel to Existing Transmission Lines or Pipelines[1]

- Alternative Route
- Alternative Route Parallel to 345kV Transmission Line
- Alternative Route Parallel to 230kV Transmission Line
- Alternative Route Parallel to 138kV Transmission Line
- Alternative Route Parallel to Pipeline (6" or greater)

Other Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Series Compensation Station Siting Area

General Reference

- City or Town
- State Boundary
- County Boundary
- Interstate Highway
- U.S. Highway
- State Highway

SOURCES:
Transmission Lines as digitized by EPG, POWERmap Platts 2009;
Pipelines as compiled by EPG, BLM 2006, 2012, 2013, 2014, USFS 2002, PennWell MAPSearch 2011, POWER Engineers, portions were digitized, Bing 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013: State and County Boundaries, ESRI 2013;
Highways, Roads, and Railroads, ESRI 2013

NOTES:
[1]Alternative routes parallel to existing transmission lines or pipelines are displayed graphically and are generally identified where utilities (138-kilovolt [kV] to 345kV transmission lines and pipelines) are parallel within approximately 3,000 feet of all alternative routes.
- In the graphic depiction of structure types, the position of the structures within the corridor is not to scale. The proposed structures are 500kV structures.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Miles

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TABLE 3-160
OWNERS OF MAJOR PIPELINES PARALLELED BY THE ALTERNATIVE ROUTES

Owner	Relevant Alternative Routes											
	WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Private					✓	✓	✓					
Anadarko Petroleum Corporation	✓	✓								✓	✓	✓
Chevron Corporation								✓	✓	✓	✓	✓
Devon Energy Corporation	✓	✓	✓	✓								
El Paso Corporation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Energy Transfer Partners LP					✓	✓	✓					
Enterprise Products Partners LP					✓	✓	✓	✓	✓	✓	✓	✓
General Electric Company	✓	✓	✓	✓								
Kinder Morgan Inc.	✓	✓	✓	✓								
MidAmerican Energy Holdings Company			✓									
OneOk Inc.	✓	✓	✓	✓								
Plains All American GP LLC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Questar Corporation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sinclair Oil Corporation	✓	✓	✓	✓								
Source Gas LLC					✓	✓	✓					
Williams Companies Inc.					✓	✓	✓	✓	✓	✓	✓	✓
Xcel Energy Inc.			✓		✓	✓	✓					

Utility Corridors

There are two types of designated utility corridors in the study corridors: the DOE WWEC and individual federal agency RMP corridors. These corridors are shown on Maps 2-2a and 2-2b.

Department of Energy West-wide Energy Corridors

As directed by Congress in Section 368 of Energy Policy Act of 2005, codified in 42 U.S.C 15926[4], participating agencies examined the energy infrastructure issues in the west and proposed to designate energy corridors on federal land for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities in 11 western states (including Wyoming, Colorado, and Utah).

Several agencies also proposed to amend their respective land-use management plans or similar land-use plans, as appropriate, to include the designated energy corridors on land administered by their agency, if designated corridors occur on those lands. The BLM Fillmore Field Office did not amend the House Range RMP, due to a moratorium on planning.

In July 2012, the Obama administration agreed to settle a 2009 lawsuit against the Departments of Interior, Agriculture, and Energy filed in the U.S. District Court for the Northern District of California by 15 plaintiffs regarding the DOE WWECs. The lawsuit claimed that the utility corridors encouraged coal-

[4] P.L. 109-58, title III, §368, Aug. 8, 2005, 119 Stat. 727.

fired power in the West and, in several areas, ignored or underserved renewable energy resources (DOE and BLM 2008).

The settlement requires the BLM, USFS, and DOE look at each corridor and evaluate how it facilitates renewable energy, avoids environmentally sensitive areas, and prevents a dense web of transmission and pipeline infrastructure. The settlement gives the BLM and USFS the authority to reassess the corridors and revise, delete, or potentially add new corridors. Specific corridors outlined in the settlement have environmental concerns identified by conservation groups (hereafter referred to as corridors of concern). The Project alternative routes currently located in the corridors of concern (Table 3-161) will require additional assessment to ensure all impacts are addressed. Other Project alternative routes are being analyzed in addition to the alternative routes in the WWECs.

TABLE 3-161
WEST-WIDE ENERGY CORRIDORS OF CONCERN
COINCIDING WITH PROJECT ALTERNATIVE ROUTES

Concern(s)	General Location	Relevant Alternative Routes	Reason for Locating Alternative Route in the Corridor
Corridor Number 66-212			
Access to coal-fired power plant and impacts on national historic places, America's byways, Old Spanish National Historic Trail, Bureau of Land Management (BLM) wilderness study area, Utah-proposed wilderness, critical habitat; adjacent to Arches National Park	Grand, Carbon, and Utah counties, Utah	All COUT BAX, COUT-B, COUT-C, COUT-H, COUT-I	To be located in areas managed by the BLM Moab and Price Field Offices as designated utility corridors To parallel existing 138-kilovolt (kV) and 46kV transmission lines
Corridor Number 126-258			
Access to coal-fired power plant	Uintah County, Utah	COUT-A, COUT-B, COUT-C	To parallel existing 345kV transmission line
Corridor Number 66-259			
Access to coal-fired power plant	Wasatch and Utah counties, Utah	COUT-A, COUT-B, COUT-C	To be located in the BLM Salt Lake Field Office and Uintah National Forest designated utility corridor/window and parallel existing 345kV transmission line

SOURCE: Exhibit A to Settlement Agreement, *The Wilderness Society et al. v. United States Department of the Interior et al*., Case No. 3:09-cv-030480-JW (Northern District of California) (The Wilderness Society 2012)
NOTE: Other West-wide Energy Corridors coincide with project alternative routes but are not reported here because they are not corridors of concern.

Bureau of Land Management and U.S. Forest Service Designated Utility Corridors

In addition to the DOE WWECs, the BLM and USFS have utility corridors designated under their related RMPs and LRMPs. In the 2-mile-wide study corridors, the BLM has designated corridors in the field offices of Rawlins in Wyoming; Little Snake, Grand Junction, and White River in Colorado; and Moab, Price, and Vernal in Utah. The USFS has designated corridors in the Uinta and Manti-La Sal National Forests. There are various types of designations for these corridors, including overheard utilities only, underground utilities only, and overhead and underground utilities. These corridors are shown on Maps 2-2a and 2-2b.

Existing Land Use

General Developed Land Uses

Table 3-162 lists the types of general development in the 2-mile-wide alternative route study corridors by alternative route that potentially could be affected by the Project.

TABLE 3-162
GENERAL DEVELOPED LAND USES

Type of Development	Description	Relevant Alternative Routes
Agriculture (irrigated, including center-pivot; rangeland; dryland)	Agricultural uses in the study corridors include dryland farmland, irrigated farmland, agriculture stockyards, outstructures, fallow farmland, farm complexes, horse farms, and rangeland. Agriculture is a major source of income for private landowners and provides benefits to cities, towns, and counties throughout the Project study area.	All WYCO, COUT BAX, COUT
Commercial	Commercial uses in the study corridors include restaurants, gas stations, banks, grocery stores, motels and hotels, service stations, retail businesses, office buildings, mixed-use development, and other businesses. The concentrations of commercial use mainly occur near population centers and along major transportation corridors.	All WYCO, COUT BAX, COUT
Industrial	Industrial uses in the study corridors include light and heavy industrial areas, oil and gas extraction, coal mining, gravel extraction, landfills, salvage yards, sewage and water treatment plants, tailing ponds, warehouse business, manufacturing companies, storage facilities, and other industrial uses.	All WYCO, COUT BAX, COUT
Public/Quasi-public	Public/Quasi-public uses in the study corridors include prisons, government buildings, cemeteries, museums, community centers, places of worship, and hospitals. Public/quasi-public uses occur near populated areas in all three states.	All WYCO, COUT BAX, COUT
Rangeland	Rangeland uses that occur in the study corridors include livestock grazing and hunting of animals. These areas are sometimes grassy, but often sparsely vegetated and are usually not maintained to sustain livestock (unlike areas that are maintained by using irrigation, spraying for weeds, etc.)	All WYCO, COUT BAX, COUT
Residential	Residential uses in the study corridors includes low-, medium-, and high-density[1] single-family residential[1], multi-family residential (e.g., apartment complex), rural residential, and mobile home parks. Residences are found throughout with concentrated areas near population centers.	All WYCO, COUT BAX, COUT

TABLE 3-162
GENERAL DEVELOPED LAND USES

Type of Development	Description	Relevant Alternative Routes
School and Educational Facilities	School and educational facilities in the study corridors include primary schools, secondary schools, and colleges. Schools and educational facilities are typically located near population centers.	WYCO-D, all COUT BAX and COUT
Utilities (substations, renewable and fossil fuel power plants)	Utilities in the study corridors include power plants, substations, wind farms, pipelines, pipeline pump stations, canals, dams, water towers, and wells. Utility land uses are found throughout the study corridor.	All WYCO, COUT BAX, COUT

NOTE:
[1]For the purpose of this inventory, residential densities were defined as:
- Rural residential/low density – 0 to 2 dwelling units per acre
- Medium density – 3 to 8 dwelling units per acre
- High density – 9 or more dwelling units per acre

Grazing Allotments

Grazing allotments cover large areas of BLM- and USFS-administered lands in the 2-mile-wide alternative route study corridors. Grazing allotments are designated primarily for grazing cattle and sheep. The BLM objective for grazing lands is to ensure the long-term health and productivity of these lands and to create multiple environmental benefits that result in healthy watersheds (BLM 2015c). Livestock grazing is managed in accordance with Rangeland Health Standards. The number of authorized animal unit months on BLM-administered lands can vary depending on factors such as drought, wildfire, and market conditions (BLM 2015c).

USFS range management objectives are similar to BLM objectives with the earliest publication of grazing controls on USFS land dating back to 1905. USFS (2013c) objectives for range management include:

- Managing range vegetation to protect basic soil and water resources, providing for ecological diversity, improving or maintaining environmental quality, and meeting public needs for interrelated resource uses.
- Integrating management of range vegetation with other resource programs to achieve multiple use objectives contained in Forest LRMPs.
- Providing for livestock forage, wildlife food and habitat, outdoor recreation, and other resource values dependent on range vegetation.
- Contributing to the economic and social well-being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood.
- Providing expertise on range ecology, botany, and management of grazing animals.

States also lease land for grazing and have similar systems in place for the proper management of grazing leases. Grazing also is a major land-use activity on private land. Table 3-163 identifies the grazing allotments by jurisdiction. Appendix M provides additional information for allotments crossed by the alternative routes.

TABLE 3-163
GRAZING ALLOTMENTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR

Managing Agency	Number of Allotments Crossed by Project	Total Allotment Acres	Total Acres Affected by Project	Relevant Alternative Routes
Wyoming Bureau of Land Management Field Offices				
Rawlins Field Office	57	1,641,369	376,830	All WYCO
Wyoming State Land				
Wyoming Office of State Lands and Investments	30	18,934	11,946	All WYCO
Colorado Bureau of Land Management Field Offices				
Grand Junction Field Office	3	120,608	26,969	All COUT BAX
Little Snake Field Office	41	607,195	120,071	All WYCO
White River Field Office	25	788,079	122,385	All WYCO, COUT BAX, COUT
Colorado State Land				
Colorado State Land Board	33	110,005	35,994	All WYCO, COUT BAX, and COUT
Utah Bureau of Land Management Field Offices				
Fillmore Field Office	2	5,823	621	All COUT BAX and COUT
Moab Field Office	13	774,385	93,987	All COUT BAX
Richfield Field Office	4	9,174	8,300	All COUT BAX and COUT
Price Field Office	60	785,532	259,243	All COUT BAX, COUT-B, COUT-C, COUT-H, COUT-I
Salt Lake Field Office	2	956	644	All COUT BAX, COUT-A, COUT-B, COUT-C
Vernal Field Office	32	1,030,787	177,418	All COUT
Utah State Land				
State Institutional Trust Lands Administration	121	388,999	112,179	All COUT BAX and COUT
National Forests				
Ashley National Forest	10	140,640	24,266	All COUT
Manti-La Sal National Forest	26	260,889	43,816	All COUT BAX and COUT
Uinta National Forest	13	190,353	32,010	All COUT BAX and COUT

NOTE: The numbers above do not include the Watershed Closure unit in the Uinta-Wasatch-Cache National Forest and the Unallotted unit in the Bureau of Land Management White River Field Office.

Communication Facilities

Numerous types of communication facilities, including Antenna Structure Registration, cellular towers, FM radio towers, Land Mobile communication towers, Land Mobile private communication towers, microwave towers, TV National Television System Committee towers, and other communication facilities were identified during the detailed land-use inventory (Table 3-164, MV-13a and MV-13b). Communication facilities are owned and operated by several public and private companies.

TABLE 3-164
COMMUNICATION FACILITIES BY STATE

Link	Number of Facilities	Relevant Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Wyoming													
W102	2		✓										
W108	2	✓			✓								
W109	5			✓									
W110	3			✓									
W111	1			✓									
W16	1			✓									
W22	15			✓									
W27	1		✓										
W30	32	✓	✓	✓	✓								
W32	8	✓	✓	✓	✓								
W35	16	✓	✓	✓	✓								
W36	16	✓	✓	✓	✓								
W409	1		✓										
Colorado													
C100	5			✓									
C101	1			✓									
C13	5			✓									
C173	15	✓	✓	✓	✓								
C174	15	✓	✓	✓	✓								
C175	16	✓	✓	✓	✓								
C177	3					✓	✓	✓					
C185	6					✓	✓	✓					
C186	10								✓	✓	✓	✓	✓
C195	9					✓	✓	✓					
C196	9					✓	✓	✓					
C197	9					✓	✓	✓					
Utah													
U241	4								✓	✓	✓		
U242	3											✓	✓
U260	6										✓		
U300	9										✓	✓	✓
U310	2								✓	✓			
U400	12										✓	✓	✓
U401	15										✓	✓	✓
U410	12								✓	✓			
U421	1								✓				
U425	1								✓				
U426	4								✓				
U430	6									✓			
U435	5											✓	
U460	18								✓	✓	✓		
U486	75					✓	✓	✓					

TABLE 3-164
COMMUNICATION FACILITIES BY STATE

Link	Number of Facilities	Relevant Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
U487	42					✓	✓	✓					
U488	12						✓	✓					
U489	7							✓					
U492	1												✓
U495	1							✓					
U527	7									✓			
U530	12									✓	✓		
U533	12									✓	✓		
U535	4												
U539	10									✓	✓		
U545	10											✓	
U546	9											✓	
U548	3											✓	
U600	12							✓				✓	
U621	18								✓	✓	✓		
U625	27								✓	✓	✓		
U629	9					✓	✓						✓
U630	9					✓	✓						✓
U650	40					✓	✓	✓	✓	✓	✓	✓	✓

Forestry and Woodland Products

Collection of firewood, Christmas trees, wood for fence posts, pine nuts, timber, and other special forest products is permitted on BLM and USFS lands. Table 3-165 provides a description of the allowable collection of forestry and woodland products on the lands managed by each agency's RMP.

TABLE 3-165
FORESTRY AND WOODLAND PRODUCTS BY STATE

Managing Agency	Plan Source Information	Allowable Collection Area or Acres Available	Products
Wyoming			
Bureau of Land Management (BLM) Rawlins Field Office	Rawlins Resource Management Plan (RMP)	196,000	Fuel-wood, posts and poles, Christmas trees, and wildings
Colorado			
BLM Grand Junction Field Office	Grand Junction RMP	112,000	Firewood and timber
BLM Little Snake Field Office	Little Snake RMP	Forested lands in the 1.3 million acres managed by the Little Snake Field Office	Firewood, Christmas trees, and timber

TABLE 3-165 FORESTRY AND WOODLAND PRODUCTS BY STATE			
Managing Agency	**Plan Source Information**	**Allowable Collection Area or Acres Available**	**Products**
BLM White River Field Office	White River RMP	27,000	Timberland – 400 acres available for harvest at a 100-year rotation rate Woodland – 27,600 acres available for commercial harvest at a 100-year rotation rate
Utah			
BLM Fillmore Field Office	House Range RMP	75,000	Fuel-wood and posts
BLM Moab Field Office	Moab RMP	1,166,000	Woodland harvest and gathering
BLM Price Field Office	Price RMP	Areas controlled by permitting that specifies area, timing, and type of product according to USFS prescriptions and the Woodlands Management Plan for the harvest of forest and woodland products	Fuel-wood, timber, posts, nuts, and Christmas trees
BLM Richfield Field Office	Richfield RMP	Areas specified by permit for commercial and noncommercial use of forest and woodland products where sustainable and compatible with restoring, maintaining, and improving woodland health in areas specified by permit Wilderness study areas, the 12 lands with wilderness characteristics (78,600 acres), and suitable Wild and Scenic River corridors closed to commercial and noncommercial use of forest and woodland products	Fuel-wood, timber, posts, pine nuts, and Christmas trees
BLM Vernal Field Office	Vernal RMP	546,000	Fuel-wood, biomass, posts, pine nuts, Christmas and ornamental live trees, and other special forest products
BLM Salt Lake Field Office	Pony Express RMP	Harvest of saw timber for commercial or individual use not allowed anywhere on public land in the Pony Express Resource Area except for maintenance practices such as thinning, disease control, wildlife improvements, and watershed enhancement Harvest of pinyon pine for use as Christmas trees, either commercially or individually, at the discretion of the Authorized Officer	Christmas trees, firewood, fence posts

TABLE 3-165 FORESTRY AND WOODLAND PRODUCTS BY STATE			
Managing Agency	**Plan Source Information**	**Allowable Collection Area or Acres Available**	**Products**
		All other areas of juniper forest on public land in the Pony Express Resource Area remain open to harvesting of firewood, fence posts, Christmas trees or any other juniper products as defined in the Tooele County *Woodland Management Plan and the Utah Supplemental Guidance: Management of Woodland Resources*	
Ashley National Forest	Ashley National Forest LRMP	530,000	Fuel-wood, posts, pine nuts, and Christmas trees
Manti-La Sal National Forest	Manti-La Sal LRMP	368,000	Classified as tentatively suited for timber production
Uinta-Wasatch-Cache National Forest	Uinta Final Environmental Impact Statement LRMP	39,000	Timber harvest activities implemented primarily to address forest health concerns, such as insect and disease infestations and hazardous fuels

Minerals and Mining

Many types of mineral and mining operations are in the 2-mile-wide alternative route study corridors. The main types of mining are liquid extraction (oil and gas), mining extraction (gravel, coal, hardrock), and gas extraction (natural gas).

Liquid extraction occurs throughout the study corridors with large authorized oil and gas leases occurring in central Wyoming, western Colorado, and eastern Utah. Mining extraction is also prevalent with major coal mining operations such as Black Butte, Deserado, ColoWyo, Bonanza, Tri-State Generation and Transmission's Craig Station, and reclaimed mines (e.g., Hanna Coal Mine), occurring in the 2-mile-wide alternative route study corridor.

Mineral materials in the study corridors are used for the construction of roads, highways, and commercial and residential development. The BLM has active contracts for private extraction of sand, gravel, and building stone, as well as free-use permits (agreements between government and nonprofit organizations to extract and use mineral materials for nonindustrial and commercial purposes) with state and local governments.

Mining claims also are present in the study corridors. Claims would be identified once a an alternative route is selected.

Superfund and Hazardous Waste Sites

A superfund site is identified by the EPA as an uncontrolled or abandoned place where hazardous waste is located that may possibly affect local ecosystems or people. There are no EPA-listed superfund or hazardous waste sites located in the 2-mile-wide alternative route study corridors (EPA 2013b).

Authorized Projects

Authorized Residential/Mixed-use Residential Subdivisions

Table 3-166 lists authorized residential and mixed-use residential subdivisions in the 2-mile-wide alternative route study corridors by alternative route that potentially could be affected by the Project.

TABLE 3-166
AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS

Subdivision Name	Description[1]	Relevant Alternative Routes
Airport Estates Subdivision	68 lots proposed for mixed-use residential and recreational development with a few existing structures on the western edge of the City of Roosevelt	COUT-A, COUT-B
Arch View Ranchettes Subdivision	5 lots for mixed-use residential and recreational development, approximately 15 miles west of the City of Duchesne; no residences have been built to date	COUT-A
Brad Knight Subdivision	5 lots to be used for residential development with 4 existing residences, approximately 2 miles south of Roosevelt City	COUT-A, COUT-B
Brad Mikesell Subdivision	A 3 lot subdivision located between County Road #D and Argyle Canyon County Road #23, 1.25 miles east of U.S. Highway 191	COUT-B
Bridgeland BV – Chevron Subdivision	2.73 acre subdivision located north of Bridgeland, Utah on the west side of County Road #80	COUT-B
Castle Gate Addition Subdivision	Residential subdivision with the majority of the lots built out, in the western portion of Helper City limits	COUT-H
Cedar Mountain No. 6 and 6A Subdivision	195 lots of mixed-use residential and recreational development, approximately 22 miles west of Duchesne	COUT-A
Cedar Mountain No. 8 Subdivision	33 lots of mixed-use residential and recreational development, approximately 6 miles west of Duchesne	COUT-A
Cedar Mountain No. 9 Subdivision	322 lots of mixed-use residential and recreational development with a few existing structures, approximately 13 miles west of Duchesne	COUT-A
Clear Creek Subdivision	Residential subdivision, approximately 4 miles south of the Town of Scofield	COUT BAX-E, COUT-H
D. J. Crozier Land and Livestock LLC Subdivision	4 lot subdivision located in Section 2, Township 3 south, Range 2 west in Duchesne County	COUT-A, COUT-B
Dale Gines Subdivision	10 lots of residential development with 5 existing residences, approximately 6 miles north of Duchesne	COUT-A
David Thacker Subdivision	2 parcel subdivision located in Section 28 and 33, Township 2 South, Range 3 West in Duchesne County	COUT-A

TABLE 3-166
AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS

Subdivision Name	Description[1]	Relevant Alternative Routes
Deer Acre Plat "B" Subdivision	Residential subdivision with 2 houses built, on the eastern edge of the municipal boundary of Nephi City	All COUT BAX and COUT
Deer Field Subdivision	8 lots of residential development with 1 existing residence, approximately 25 miles west of Duchesne	COUT-A
Duncan – Price Subdivision	2 lot subdivision located in the SouthWest quarter of the SouthWest quarter of Section 1, Township 3 South, Range 2 West in Duchesne County	COUT-A, COUT-B
Elk Tracks at Golden Eagle Subdivision	Mixed-use residential development with a few existing structures, approximately 5 miles northwest of Duchesne	COUT-A
Fitch's Subdivision	Residential subdivision on the western portion of the city limits of Helper	COUT-H
Fruitland Ranchettes Subdivision	4 lots of residential development with 1 existing building being used as a sales office, approximately 5 miles northwest of Duchesne	COUT-A
Giocoletto Subdivision	Residential subdivision on the northern portion of the city limits of Helper	COUT-H
Golden Eagle Subdivision	9 lots (40-acre lots) and 1 existing residence, approximately 6 miles west of Duchesne	COUT-A
Great Basin Estates I Subdivision	50 lots mixed-use residential and recreational development with a few existing structures, approximately 7 miles northwest of Duchesne	COUT-A
Hidden Meadow Subdivision	38 lot residential development with 1 existing residence and a large riding arena, approximately 24 miles west of Duchesne	COUT-A
Highland Estates Subdivision	9-lot (approximately 1 acre each) residential development with 5 existing residences, approximately 2 miles south of Roosevelt City	COUT-A, COUT-B
Ioka Meadows Subdivision	12 lot residential development with 6 existing residences, approximately 2 miles southwest of Roosevelt City	COUT-A, COUT-B
Ivan German Subdivision	1 parcel subdivision on the southside of Cobble Hollow Drive in Duchesne County	COUT-A, COUT-B
Jerry Thacker Subdivision	2 parcel subdivision on the northside of 2000 south in Section 28, Township 2 South and Range 3 West in Duchesne County	COUT-A
Kelly R. Kielbasa Subdivision	6 lot subdivision located approximately 9 miles west of Myton and approximately 10 miles east of Duchesne on the east side of Antelope Canyon Road	COUT-B

TABLE 3-166
AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS

Subdivision Name	Description[1]	Relevant Alternative Routes
Lake Pointe Ranches Subdivision	10 lot subdivision located in the South half of Section 16, Township 3 South, Range 5 West in Duchesne County	COUT-A
Lane Yack Subdivision	9 lot subdivision located in Section 33, Township 2 South, Range 1 West and Section 4, Township 3 South, Range 1 West in Duchesne County	COUT-A, COUT-B
Lazy JP Ranchettes Subdivision	14 lot residential development with 2 existing residences, approximately 23 miles west of Duchesne	COUT-A
Ledge Rock Cove Subdivision	6 lot residential development with 3 existing residences, approximately 6 miles west of Roosevelt City	COUT-A
Leon Clayburn Subdivision	2 parcel subdivision located in Section 35, Township 3 South, Range 3 West in Duchesne County	COUT-B
Mike Kendall	2 parcel subdivision located in Section 34, Township 2 South, Range 5 West in Duchesne County	COUT-A
Moondance Ranch Phases I and II Subdivision	Residential and recreational development (40-acre lot size), approximately 6 miles southeast of Duchesne	COUT-B
Mount Baldy Subdivision	Residential development with existing structures, approximately 7 miles northeast of Fountain Green	COUT-A, COUT-B, COUT-C
Neal Potter Subdivision	4 parcel subdivision located in Section 4, Township 3 South, Range 1 West in Duchesne County	COUT-A, COUT-B
New Helper Townsite Subdivision	Residential development on the northern portion of the city limits of Helper	COUT-H
Nicole O'Driscoll	2 parcel subdivision located in Section 4, Township 3 South, Range 2 West in Duchesne County	COUT-A, COUT-B
Pheasant Run Subdivision	11 lots (approximately 1 acre each) of residential development, approximately 3 miles from Roosevelt City	COUT-A, COUT-B
Private Estates Subdivision	4 parcel subdivision located in Section 4, Township 3 South, Range 4 West in Duchesne County	COUT-A
Randall Hanberg Subdivision	2 parcel subdivision south of U.S. Highway 40 in Section 10, Township 4 South, Range 3 West in Duchesne County	COUT-B
Richard and Connie Johnson Subdivision	2 parcel subdivision in the Northeast quarter of Section 14, Township 3 South, Range 9 West in Duchesne County	COUT-A
River Bend Estates Subdivision	4 lot residential development in Duchesne County.	COUT-A

TABLE 3-166
AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS

Subdivision Name	Description[1]	Relevant Alternative Routes
River Breeze Estates Subdivision	4 lots of residential development with 1 existing residence, approximately 5 miles north of Duchesne.	COUT-A
River Heights Estates Subdivision	10 lot subdivision located in Section 34, Township 2 south, Range 5 West in Duchesne County	COUT-A
Robbers Roost Subdivision	46 lots with 4 developed lots (mainly vacant), approximately 25 miles west of Duchesne	COUT-A
Silver Moon Subdivision	Residential and recreational subdivision with a few existing structures, approximately 5 miles southeast of Duchesne	COUT-B
Soldier Summit Estates Subdivision	Residential development with 1 existing residence, approximately 13 miles north of Scofield	COUT-A, COUT-B, and COUT-C
Squire Subdivision	4 lot subdivision located in Section 7, Township 3 South, Range 1 West in Duchesne County	COUT-A, COUT-B
Sundown Ridge Subdivision	25 lot residential development with 12 existing residences, approximately 26 miles west of Duchesne	COUT-A
Sunrise Estates	34 lots with 12 developed lots and 2 existing residences, approximately 4 miles southwest of Roosevelt City	COUT-A, COUT-B
Tabby Shadows Subdivision	Residential and recreational subdivision with a few existing structures, approximately 15 miles west-northwest of Duchesne	COUT-A
Taylor Subdivision	4 parcel subsdivision located on the southside of 4,000 south, south of Ioka, Utah	COUT-B
Uintah Haven Subdivision	8 lot residential development with no existing structures, approximately 5 miles north of Duchesne	COUT-A
Uintah Mountain Vista Subdivision	8 lot subdivision in the SouthWest quarter of Section 36, Township 2 south, Range 2 W in Duchesne County	COUT-A, COUT-B
Valle Del Padre Subdivision	Residential and recreational subdivision, approximately 25 miles west of Duchesne	COUT-A
View Subdivision	Residential subdivision (½-acre lot size), approximately 2 miles south of Roosevelt City	COUT-A, COUT-B
Vista Valley Subdivision	Residential (1/5-acre lot size) and recreational development with a few existing structures, approximately 18 miles west of Duchesne	COUT-A
Vonsville Subdivision	Residential and commercial development, approximately 1 mile southwest of Roosevelt City	COUT-A, COUT-B

TABLE 3-166
AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS

Subdivision Name	Description[1]	Relevant Alternative Routes
Wasatch Meadow Subdivision	11 lots of residential development with 1 existing residence, approximately 26 miles west of Duchesne	COUT-A
West Star Properties Subdivision	Mixed-use residential development with 3 lots and one existing residence, approximately 20 miles west of Duchesne	COUT-A
Willis Hansen Subdivision	2 parcels subdivision located in Section 9, Township 3 South, Range 1 West in Duchesne County	COUT-A, COUT-B
Young Meadows Subdivision	31 lot residential development with 2 existing residences, approximately 20 miles west of Duchesne	COUT-A

NOTE: [1]The number of homes that have been built per subdivision is based on information received in the fall and winter of 2012.

Authorized Projects

Table 3-167 lists other authorized projects in the study corridor that could be potentially affected by the Project. As discussed previously, these projects have not yet been built but could be constructed any time and, for purposes of this analysis, are being considered an existing land use. The other authorized projects crossed are listed by alternative route in Section 3.2.11.5.

TABLE 3-167
AUTHORIZED PROJECTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR

Project Name	Description	Relevant Alternative Routes
Anadarko Atlantic Rim Natural Gas Project	Oil and/or gas development in Carbon County, Wyoming, south of Interstate 80, east of Wyoming Highway 789	All WYCO
Anadarko Petroleum Corporation Ferron Natural Gas Project	Oil and/or gas development north of Price, Utah	COUT BAX-C, COUT BAX-E, COUT-I
Andalex Resources Inc. Centennial Mine	Coal mine 6 miles northeast of Helper, Utah	COUT-I
Berry Petroleum South Unit Oil and Gas Development	Oil and/or gas development between Antelope and Sowers Canyon in the Duchesne Ranger District	COUT-B
Bill Barrett Corporation Blacktail Ridge	Oil and/or gas development in Duchesne County, 8 miles east of Fruitland and 2 miles north of U.S. Highway 40	COUT-A
Bill Barrett Corporation Blacktail Ridge and Lake Canyon Exploration and Development Agreements	Oil and/or gas development west of Duchesne, Utah	COUT-A
Blue Mountain Energy Inc. Deserado Mine	Coal mine near the Moffat and Rio Blanco county lines	All COUT BAX, all COUT
Bureau of Land Management (BLM) Vernal Field Office	Gilsonite mining leases in BLM Vernal Field Office	All COUT

TABLE 3-167
AUTHORIZED PROJECTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR

Project Name	Description	Relevant Alternative Routes
Canyon Fuel Company LLC Skyline Mine	Coal mine 3 miles west of Clear Creek, Utah	COUT BAX-E, COUT-H
Canyon Fuel Company Soldier Canyon Mine	Coal mine 12 miles northeast of Wellington, Utah	COUT-I
Carbon County, Utah Proposed ATV Trail	An ATV trail in Carbon County that would be used by all types of motorized land uses.	COUT-I
Clouse No. 1 and No. 2 Simple Land Divisions	Proposed land division in Mesa County; Clouse No. 1 exemption plat directly attached to Clouse No. 1 Simple Land Division	All COUT BAX
Duchesne County EP Energy Belcher Industrial Subdivision	Industrial subdivision in Duchesne County.	COUT-A
Duchesne County Victory Pipeline	Approximately 29-mile-long water pipeline in Duchesne County designed to transport water from the Starvation Reservoir Water Treatment Plant to Roosevelt	COUT-A, COUT-B
Encana North Chapita Wells Natural Gas Development	Oil and/or gas development 6 miles northwest of Bonanza, Utah	COUT-C, COUT-H, COUT-I
EOG Resources Inc. Chapita Wells-Stagecoach Area Natural Gas Development	Oil and/or gas development 10 miles southeast of Ouray, Colorado	COUT-C, COUT-H, COUT-I
Emery County Lease – Mancos Hills Industrial Park	Industrial park in Emery County.	COUT-BAX-C, COUT-BAX-E
Flat Canyon Coal Lease Tract	Coal mine 5 miles west of Clear Creek	COUT BAX-E, COUT-H
Flat Irons Resource LLC No. 1-4 Compressor Plant	Compressor plant 15 miles southwest of Mack, Colorado	All COUT
Flatirons Resource LLC No. 1-4 Helium Well Project Pipeline	Industrial pipeline 15 miles southwest of Mack, Colorado	All COUT BAX
Gasco Energy Inc. Uinta Natural Gas Development Project	Oil and/or gas development T9-11S, R14-19E	COUT-C, COUT-H, COUT-I
Hiawatha Coal Company Inc. Hiawatha Mine	Coal mine 15 miles southwest of Price, Utah	COUT BAX-E
Intermountain Power Agency Wildcat Loadout	Coal mine 3 miles west of U.S. Highway 6, on Consumers Road near Helper, Utah	COUT-H
Interwest Mining Company Deer Creek Coal Mine, Coal Exploration	Coal mine T16S, R6E, Sec. 22-27	COUT BAX-B, COUT BAX-C, COUT-I
Kerr-McGee Oil and Gas Onshore LP Greater Natural Buttes Project	Oil and/or gas development in T8S, R20-23E T9S, R20-24E T10S, R20-23E T11S, R12-22E	COUT-C, COUT-H, COUT-I
Mona South Pumped Storage Project	Pumped storage project in Wide Canyon, 4 miles southwest of Mona	All COUT BAX, all COUT

TABLE 3-167
AUTHORIZED PROJECTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR

Project Name	Description	Relevant Alternative Routes
Narrows Proposed Reservoir and associated facilities	Bureau of Reclamation and Sanpete Water Conservancy District proposed reservoir and associated facilities, approximately 669 acres	All COUT BAX, COUT-H, COUT-I
Newfield Gusher Development	Oil and/or gas development 5 miles northeast of Randlett, Utah	COUT-A, COUT-B
North Alger II Oil and Gas Development	Oil and/or gas development in T10S, R19E, Sec. 27-28, 34-35 T11S, R19E, Sec 1	COUT-C, COUT-H, COUT-I
Coal and Non-Coal Mine Development	Throughout the Wyoming and Utah portion of the 2-mile-wide study corridor	All WYCO, COUT BAX, COUT
Oil and gas development leases (BLM])	Throughout the BLM White River Field Office	All WYCO, all COUT BAX
Oil and gas development leases (BLM)	Throughout the BLM Little Snake Field Office	All WYCO
	Throughout the BLM Grand Junction Field Office	All COUT BAX
	Throughout the BLM Vernal Field Office	All COUT-BAX, all COUT
	Throughout the BLM Richfield Field Office	All COUT BAX, COUT-H, COUT-I
	Throughout the BLM Price Field Office	All COUT BAX, COUT-H, COUT-I
	Throughout the BLM Moab Field Office	All COUT BAX
Oil and gas development leases (State)	Throughout the Wyoming portion of the Project study area	All WYCO
	Throughout the Colorado portion of the Project study area	All WYCO, all COUT
Oil and gas development leases (State)	Throughout the Utah portion of the Project study area	All COUT, all COUT BAX
Oil Shale and/or Tar Sands development leases	Throughout the Utah portion of the Project study area	COUT-C, COUT-H, COUT-I
PacifiCorp Seven Mile Hill Wind Energy Facility	Wind energy facility 42 miles northeast of Rawlins, Wyoming	All WYCO
PacifiCorp Energy Gateway West Transmission Project	A proposed approximately 1,000-mile-long, 500kV transmission project that begins at the Windstar Substation near the Dave Johnston Power Plant in Wyoming to the Hemingway Substation near Melba, Idaho	All WYCO
PacifiCorp Standpipe Substation	Substation 2 miles southeast of Hanna, Wyoming	WYCO-D
Petro-Canada Resources (USA) Inc. Rye Patch Environmental Assessment	Oil and/or gas development 21 miles south of Duchesne, Utah	COUT-C, COUT-H, COUT-I
Power Company of Wyoming Chokecherry and Sierra Madre Wind Farm	Wind energy facility south of Interstate 80 and Rawlins, Wyoming	All WYCO

TABLE 3-167 AUTHORIZED PROJECTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR		
Project Name	**Description**	**Relevant Alternative Routes**
Questar Exploration and Production Company Greater Deadman Bench	Oil and/or gas development 8 miles northeast of Ouray, Colorado	COUT-A, COUT-B, COUT-C
Red Leaf Resources Oilshale Project	Oil shale and/or tar sands project in Uintah County	COUT-C, COUT-H, COUT-I
Roosevelt Pipeline	Pipeline that extends from Roosevelt, Utah, to the west 9 miles	COUT-A, COUT-B
Seep Ridge Road	Highway/road from Ouray, Colorado to Uintah county line	COUT-C, COUT-H, COUT-I
Sunnyside Cogeneration Associates Star Point Waste Fuel	Coal mine 3 miles of Hiawatha, Utah	COUT BAX-E
Utah National Guard Engineering Battalion Training Area	Military Training/Testing Site 6 miles east of Price, Utah	COUT-I
Victory Pipeline I, Duchesne County	Pipeline approximately 29 miles long; a water pipeline in Duchesne County; designed to transport water from Starvation Reservoir treatment plant to Roosevelt, Utah	COUT-A, COUT-B
Wasatch Natural Resources Long Canyon Coal Lease	Coal mine 3 miles east of Scofield along a north-south trending ridge east parallel to Pleasant Valley/Scofield	COUT BAX-E, COUT-H
White Sands Missile Launch Facility	Military training/testing site near Green River, Utah	All COUT BAX
XTO Energy Riverbend Directional Infill	Oil and/or gas development T10S, R19-20E	COUT-C, COUT-H, COUT-I

Future Land Use

Future land uses in the 2-mile-wide alternative route study corridors were identified by reviewing agency project lists, as well as information provided by agencies, and consist of numerous proposed developments. These developments are listed in Table 3-168 and include both approved and proposed projects. For subdivisions that are partially built out, the number of structures existing as of November 2011 are mentioned in the table.

TABLE 3-168 FUTURE LAND USE BY STATE		
Project Name	**Description of Project**	**Relevant Alternative Route(s)**
Multi-State Project		
TransWest Express Transmission Line	A proposed approximately 725-mile-long, 600-kilovolt (kV) high-voltage direct-current transmission line with a 3,000-megawatt capacity that begins in Wyoming and terminates in Nevada	All WYCO, COUT BAX, COUT
Wyoming		
BP Continental Divide-Creston Natural Gas Project	Oil and/or gas development 25 miles west of Rawlins, Wyoming in Carbon and Sweetwater counties	All WYCO

TABLE 3-168 FUTURE LAND USE BY STATE		
Project Name	**Description of Project**	**Relevant Alternative Route(s)**
Rosebud Mine	Proposed coal mine northeast of the Town of Hanna by Ambre Energy; exploratory drilling planned in the existing reclaimed mine area	All WYCO
Hogback Ridge (Whirlwind I)	Wind energy facility 2 miles southwest of Rawlins	All WYCO
Colorado		
There are no future land use projects identified in Colorado.		
Utah		
Emery County Potential Wind Farm	Possible wind farm location in Emery County	COUT BAX-C
Moonlake Electric Company Bonanza to Upalco Transmission Line	138kV transmission line; first stage to Pelican then on to Upalco with a switching station near Ft. Duchesne to sectionalize the new line and the existing line.	COUT-A, COUT-B
Strawberry Highlands Subdivision	Residential subdivision with a golf course, approximately 30 miles west of Duchesne	COUT-A
Uinta Express Pipeline - East Canyon Route	Pipeline would span 120 to 135 miles, comprised of 12-inch underground pipe	COUT-A, COUT-B
Woodside Carbon Sequestration Site	Potential carbon-sequestration site and associated facilities	COUT BAX-C, COUT BAX-E

Zoning and General Plan Management Direction

To determine management direction from local municipalities in the study corridor, the general/ comprehensive plan and zoning ordinances were reviewed. Zoning and general plan uses, in the 2-mile-wide alternative route study corridors, are predominantly grazing, agricultural activities, parks/ preservation areas, and industrial uses (e.g., urbanized, commercial, residential, etc.) uses generally occur near cities and towns.

A generalized zoning data layer was compiled using city and county general plan mapping data. Where general plan mapping data was not available, zoning ordinance mapping data was used. The following is a list of each general/comprehensive plan and/or zoning ordinance for each municipality in the 2-mile-wide alternative route study corridors reviewed for data inventory. Cities in the alternative route study corridors are located under the applicable County. An asterisk symbol (*) is placed next to the plans or ordinances used for impacts and mapping in the generalized zoning section.

Wyoming

- Carbon County Comprehensive Land Use Plan (2012)
- Carbon County Zoning Resolution (2004, 2009, 2010, 2011)*
  - Zoning Ordinance of Baggs, Wyoming (1982)*
  - Town of Hanna Zoning Ordinance (2007)*
  - City of Rawlins Master Plan Update (1999)
  - Rawlins Municipal Code (2010)
- Sweetwater County Comprehensive Plan (2003, 2012)
- Sweetwater County Growth Management Plan and Agreement (2003, 2011)*

Colorado

- Garfield County Comprehensive Plan 2030 (2010)
- Garfield County Land Use Resolution (2008)*
- Mesa County Master Plan (2000)
- Mesa County Land Development Code (2011)*
- Moffat County/City of Craig Master Plan (2003)
- The Moffat County Zoning and Resolution Map (1995)*
  - City of Craig Land Use Code (2007)
  - Town of Dinosaur Zoning Ordinance (1983)
- Rio Blanco County Master Plan (2011)
- Rio Blanco County Land Use Resolution (2002)
  - Town of Rangely Comprehensive Plan 2004 to 2024 (2004)
  - Rangely Municipal Code (2007)*
  - Town of Meeker Comprehensive Plan (2005)
  - The Meeker Zoning Ordinance (2006)
- Routt County Master Plan (2003)
- Routt County Zoning Regulations (1972)*

Utah

- Carbon County Master Plan (1997)
- The Development Code of Carbon County, Utah (2003)*
  - Helper City, Utah General Plan (2005)
  - City of Helper Zoning Ordinance (2004)*
  - Price City General Plan (2009)
  - The Land Use Development and Management Act of Price City (2010)
- 2008 Daggett County General Plan Update & Regional Planning Guide (2009)
- The 1994 Amended Zoning Ordinance for the Unincorporated Area of Daggett County (2009)
- Duchesne County General Plan (1997, 1998, 2005)
- Duchesne County Zoning Ordinance Amendment (2005)*
  - Duchesne City, Utah City Code (2012)
  - Myton City General Plan (2006)
  - Roosevelt City General Plan (2010)
  - Uniform Zoning Ordinance of Roosevelt City Corporation (2007)*
- Emery County General Plan (1996, 1999)
- Emery County Zoning Ordinance (2009)*
  - City of Green River General Plan (2005)
  - Castle Dale Zoning Map (No Date)*
  - Green River, Utah City Code (2010)*
  - Huntington General Plan (2007)*
  - Huntington City Approved Expansion Area Map (2008)
  - Orangeville City General Plan (1999)
- Grand County Utah General Plan 2012 (2012)
- Grand County Land Use Code (2008)*
- Juab County General Plan (1996)
- Land Use Ordinance of Juab County, Utah (2007)*
  - Nephi City General Plan (1996)
  - Land Use Ordinance of Nephi City, Utah (2007)*
- Sanpete County General Plan Update 2020 (2010)

- Sanpete County Land Use Ordinance (2001, 2010)*
  - Fairview City General Plan (2001)
  - Moroni City Zoning Map (2003)
  - Mount Pleasant General Plan 2007 to 2017 (2007)
  - Mount Pleasant City Zoning Regulations (1999)*
- Uintah County General Plan (2005)
- Uintah County Transportation Master Plan (2010)
- Uintah County Land Use Plan (2010)
- Uintah County Land Use Ordinance (2011)*
  - Ballard City General Plan (2008)
  - Ballard City Land Use Ordinances (2009)*
  - Naples City General Plan (2000)
  - Naples City Land Use Ordinance (2008)
- Utah County General Plan (2006, 2007)
- Utah County Land Use Ordinance (2010)*
- Wasatch County General Plan 2001-2016 (2001)
- Wasatch County Land Use and Development Code (2004)*

Zoning and general plan management direction in the 2-mile-wide alternative route study corridors are listed in Table 3-169.

TABLE 3-169
ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS

Land Use Code (Description)	Generalized Zoning Layer (MV-16a and MV-16b)	Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Wyoming													
Carbon County Zoning Resolution (2004, 2009, 2010, and 2011)													
C-2 (Highway Commercial)	Commercial	✓	✓	✓	✓								
MH (Heavy Industrial)	Industrial			✓									
RAM (Ranching, Agriculture, Mining)	Agriculture	✓	✓	✓	✓								
RD (Residential single-family)	Residential	✓	✓	✓	✓								
RRA (Rural Residential Agriculture)	Residential	✓	✓	✓	✓								
Town of Hanna Zoning Ordinance (2007)													
C (Commercial Business)	Commercial			✓									
I (Industrial Business)	Industrial			✓									
R (Residential)	Residential			✓									
Zoning Resolution of Sweetwater County, Wyoming (2003 and 2012)													
A (Agriculture)	Agriculture	✓	✓	✓	✓								
MD-1 (Mineral Development)	Industrial	✓	✓	✓	✓								

TABLE 3-169
ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS

Land Use Code (Description)	Generalized Zoning Layer (MV-16a and MV-16b)	Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Colorado													
Garfield County Land Use Resolution (2008)													
PL (Public Lands)	Public/Quasi-public					✓	✓	✓					
R (Rural)	Residential					✓	✓	✓					
Mesa County Land Development Code (2011)													
AFT (Agriculture)	Agriculture					✓	✓	✓					
The Moffat County Zoning and Resolution Map (1995)													
A (Agriculture)	Agriculture	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B (Business)	Commercial			✓					✓	✓	✓	✓	✓
HI (Heavy Industrial)	Industrial			✓									
O (Open)	Parks/Preservation			✓									
R-1 (Low Density Residence)	Residential			✓									
R-2 (Medium Density Residence)	Residential			✓									
R-R (Rural Residence)	Residential			✓									
Rangely Municipal Code (2007)													
Country	Residential					✓	✓	✓					
Industrious	Industrial					✓	✓	✓					
Suburban	Residential					✓	✓	✓					
Rio Blanco County Land Use Resolution (2002)													
A (Agriculture)	Agriculture					✓	✓	✓	✓	✓	✓	✓	✓
MC (Mixed Commercial)	Commercial					✓	✓	✓					
R (Residential, Residential High Density, Residential Medium Density)	Residential					✓	✓	✓					
RR (Rural Residential)	Residential					✓	✓	✓					
Routt County Zoning Regulations (1972)													
Commercial	Commercial			✓									
Agriculture	Agriculture			✓									
Utah													
Ballard City Land Use Ordinances (2009)													
A (Agriculture)	Agriculture								✓	✓			
Residential	Residential												
The Development Code of Carbon County, Utah (2003)													
C-1 (Retail Commercial)	Commercial												✓
C-2 (Wholesale Commercial)	Commercial												✓
HMC (Historic Mining Camp)	Residential							✓				✓	
I-1 (Light Industrial)	Industrial												✓
I-2 (Heavy Industrial)	Industrial												✓
M&G (Mining and Grazing)	Agriculture							✓				✓	✓
MR (Mountain Range)	Agriculture							✓		✓	✓	✓	✓
R-1-20,000 (Residential Zone)	Residential												

TABLE 3-169
ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS

Land Use Code (Description)	Generalized Zoning Layer (MV-16a and MV-16b)	Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
R-4-8,000 (Residential Zone)	Residential												
RA-20 (Residential Agricultural)	Residential							✓					
RR-1 (Rural Residence)	Residential											✓	✓
RR-2.5 (Rural Residence, 2.5 acre)	Residential												✓
RR-5 (Rural Residence, 5 acre)	Residential							✓					✓
WS (Water Shed)	Parks/Preservation								✓		✓	✓	✓
Duchesne County Zoning Ordinance Amendment (2005)													
A-10 (Agriculture, 10 acre minimum)	Agriculture								✓	✓	✓	✓	✓
A-5 (Agriculture, 5 acre minimum)	Agriculture								✓	✓			
A-2.5 (Agriculture, 2.5 acre minimum)	Agriculture								✓	✓	✓	✓	✓
Commercial	Commercial								✓	✓			
Industrial	Industrial								✓	✓			
Emery County Zoning Ordinance (2009)													
A-1 (Agriculture)	Agriculture					✓	✓	✓					✓
H-C (Not defined in zoning code)	Agriculture							✓					
I-1 (Industrial)	Industrial					✓	✓	✓					
M (Mountain)	Rangeland					✓	✓	✓				✓	✓
M&G (Mountain)	Rangeland					✓	✓	✓					✓
Grand County Land Use Code (2008)													
HC (Highway Commercial)	Commercial					✓	✓	✓					
LI (Light Industrial)	Industrial					✓	✓	✓					
NC (Neighborhood Commercial)	Commercial					✓	✓	✓					
RG (Range and Grazing)	Agriculture					✓	✓	✓					
SLR-1 (Small Lot Residential)	Residential					✓	✓	✓					
SLR-2 (Small Lot Residential)	Residential					✓	✓	✓					
Helper City Zoning													
CC-1 (Commercial)	Commercial											✓	
GC-1 (General Commercial)	Commercial											✓	
I-1 (Industrial)	Industrial											✓	
LI-1 (Light Industrial)	Industrial											✓	
R-1-30,000 (Residential)	Residential											✓	
R-1-8,000 (Residential)	Residential											✓	
R-1-5,000 (Residential)	Residential											✓	
R-2-3,000 (Residential)	Residential											✓	
Juab County Zoning													
A-160 (Not defined in zoning code)	Agriculture					✓	✓	✓	✓	✓	✓	✓	✓
A1-50	Agriculture												

TABLE 3-169
ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS

Land Use Code (Description)	Generalized Zoning Layer (MV-16a and MV-16b)	Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
A-60 (Not defined in zoning code)	Agriculture					✓	✓	✓	✓	✓	✓	✓	✓
GMRF-160 (Grazing, Mining, Recreation, and Forestry District)	Recreation					✓	✓	✓	✓	✓	✓	✓	✓
Land Use Ordinance of Nephi City, Utah (2007)													
CC (Central Commercial District)	Commercial					✓	✓	✓	✓	✓	✓	✓	✓
CU (Combined Use)	Agriculture					✓	✓	✓	✓	✓	✓	✓	✓
CU-2 (Combined Use District II)	Mixed Use					✓	✓	✓	✓	✓	✓	✓	✓
HC-2 (Highway Commercial District II)	Commercial					✓	✓	✓	✓	✓	✓	✓	✓
ID (Industrial Development)	Industrial					✓	✓	✓	✓	✓	✓	✓	✓
R-1 (Residential)	Residential					✓	✓	✓	✓	✓	✓	✓	✓
R-1-8 (Residential)	Residential					✓	✓	✓	✓	✓	✓	✓	✓
R-1H (Residential)	Residential					✓	✓	✓	✓	✓	✓	✓	✓
R-2-8 (Residential)	Residential					✓	✓	✓	✓	✓	✓	✓	✓
Mount Pleasant City Zoning Regulations (1999)													
CG (General Commercial)	Commercial					✓	✓						✓
R-A (Residential Agricultural)	Residential					✓	✓						✓
SL/AB (Sensitive Lands)	Agriculture					✓	✓						✓
Sanpete County Land Use Ordinance (2001 and 2010)													
A (Agriculture)	Agriculture					✓	✓	✓	✓	✓	✓	✓	✓
B (Business/Commercial)	Commercial					✓	✓						✓
PF (Public Facilities)	Public/Quasi-public					✓	✓						✓
RA-1 (Residential-Agricultural)	Residential					✓	✓					✓	✓
RA-2 (Residential-Agricultural)	Residential					✓	✓					✓	✓
SL (Sensitive Lands)	Parks/Preservation					✓	✓					✓	✓
Uintah County Land Use Ordinance (2011)													
A-1 (Agriculture)	Agriculture								✓	✓			
MG-1 (Mineral and Grazing)	Rangeland					✓	✓	✓	✓	✓	✓	✓	✓
Uniform Zoning Ordinance of Roosevelt City Corporation (2007)													
R-1-6 (Residential Single-family)	Residential								✓	✓			
R-R-1 (Rural Residential)	Agriculture								✓	✓			
Utah County Land Use Ordinance (2010)													
CE-1 (Critical Environmental)	Parks/Preservation								✓	✓	✓		
CE-2 (Critical Environmental)	Parks/Preservation								✓	✓	✓		
HS-1 (Highway Services)	Commercial								✓	✓	✓		
M&G-1 (Mining and Grazing)	Agriculture								✓	✓	✓		
RA-5 (Agricultural)	Residential								✓	✓	✓		

TABLE 3-169
ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS

Land Use Code (Description)	Generalized Zoning Layer (MV-16a and MV-16b)	Alternative Routes											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Wasatch County Land Use and Development Code (2004)													
HS (Highway Services)	Commercial								✓	✓	✓		
P-160 (Preservation)	Parks/Preservation								✓	✓	✓		
SR (Strawberry Recreation Zone)	Residential Mixed Use								✓				

Energy Zones

Several counties in the Project study area have created energy zones in their jurisdictions to maximize efficient and responsible development of energy and mineral resources. Uintah, Carbon, Duchesne, and Emery counties in Utah, and Sweetwater County in Wyoming, have adopted an energy zone component to the counties' ordinances, and all of the counties have incorporated a map illustrating the energy zones. These energy zones are typically designed as overlay zones to existing zones and general/comprehensive plan designations. The energy zones are not analyzed or displayed on any maps in this EIS because they are irrelevant to the proposed action.

3.2.11.4.2 Impact Assessment and Mitigation Planning

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project would result in both direct and indirect effects on land-use resources. Direct effects associated with construction, operation, and maintenance activities could include:

- Loss of existing agricultural, commercial, industrial, and residential areas (long-term)
- Loss of rangeland for livestock grazing associated with clearing pulling and tensioning sites, staging areas, access roads, tower sites, and a batch plant (short- and long-term)
- Potential spread of noxious and invasive species on grazing land, interference with livestock management, interference of access to livestock operations, and mortality of livestock from increased traffic (short-term)
- Conflicts with future energy facilities, including the design, construction, and operation of these facilities (long-term)
- Limiting future development of agricultural, industrial, and residential areas (long-term)

Criteria for Assessing Level of Impacts

Criteria were developed to assess the level of potential effects on land-use resources associated with implementation of the Project (Tables 3-170 to 3-171). The assessment of impacts on each category of existing land use, authorized land use, and future land use was based on the relationship between the level of a potential effect on each use to estimated disturbance associated with Project construction, operation, and maintenance.

The methodology for assessing the potential impacts on land-use resources (existing, authorized, and future) associated with implementing the Project generally includes:

- Identifying the types of potential effects that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities
- Classifying the relative level of impacts to potential environmental effects
- Developing criteria for assessing the level of a potential effect
- Assessing the initial impacts
- Identifying the appropriate selective mitigation measures for minimizing potential adverse effects
- Determining specific areas where selective mitigation should be applied
- Disclosing potential residual impacts (refer to Tables 3-170 to 3-171 for details)

Existing Land Use and Authorized Projects

TABLE 3-170
CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON EXISTING LAND USE AND AUTHORIZED PROJECTS

Level of Impacts	Description
High	▪ Areas where the Project would conflict physically and create a direct long-term conflict with existing residential, commercial, industrial, or agricultural uses (i.e., displacement of homes, businesses, or center-pivot irrigation agriculture fields)
Moderate	▪ Areas where the Project would create an indirect conflict with residential, commercial, industrial, or noncenter-pivot or flood irrigation agricultural uses ▪ Areas where the Project would create short-term impacts on agricultural operations ▪ Areas where the transmission lines would require expansion of the existing right-of-way in existing commercial, industrial, or residential areas
Low	▪ Areas used for grazing ▪ Areas where the Project would not conflict with existing development, structures, or jurisdictional restrictions, such as undeveloped land ▪ Areas where land use is compatible with a transmission line such as industrial areas, rangeland, vacant/undeveloped land, etc.

Future Land Use

TABLE 3-171
CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON FUTURE LAND USE

Level of Impacts	Description
High	▪ Areas where the Project would conflict physically with planned residential subdivisions at the final plat approval stage ▪ Approved industrial or commercial project areas that would conflict physically with the Project
Moderate	▪ Areas where transmission lines would require new or expansion of the existing right-of-way in a proposed recreation area or proposed residential area (approved/concept plans)
Low	▪ Areas where the Project would not conflict with existing or future development, structures, or jurisdictional restrictions, such as undeveloped land ▪ Areas where future land use is compatible with a transmission line, such as linear features or existing or proposed utilities

Zoning and General Plan Management Direction

Zoning and general plan management direction was reviewed to determine preliminary permitting requirements for electric transmission lines in each jurisdiction. The potential permitting requirements

(i.e., permitted, conditionally permitted, or not permitted) based on this review are reported by alternative in the results section.

The zoning and general plan management direction described relate to the generalized definitions of the zone or general plan designation found in each municipality's zoning ordinance or general/comprehensive plan. Other uses may occur or be allowed on the land in these zones or designations (e.g., residences located in an agricultural zone); however, impacts on an existing land use or future land use are captured in the existing land use and future land use sections.

Mitigation and Effects Analysis

Assessment of Initial Impacts

To determine initial impacts that could result from implementation of the Project, the level of a potential effect on a land-use resource was assessed. The level was determined based on the compatibility of the land-use resource with construction of a new transmission line. The initial impacts were assigned using the criteria presented in Tables 3-170 to 3-171.

Mitigation Planning and Effectiveness

In addition to the design features of the proposed action (Table 2-8), selective mitigation measures (Table 2-13) also would be used to minimize adverse impacts on land-use resources; these are described in Tables 3-172 to 3-174.

TABLE 3-172
SELECTIVE MITIGATION FOR EXISTING LAND USE

Mitigation Number	Description of Mitigation	Example of Application
7	Span and/or avoid sensitive features	Placing structures in a manner that would span over a residence, commercial building, oil/gas well pad, cemetery, center-pivot irrigated field, utility, communication facility, road, or other existing land use
11	Minimize right-of-way clearance	Vegetation clearing of the right-of-way would be minimized to avoid sensitive features such as farmland, irrigated farmland, and center-pivot irrigated farmland

TABLE 3-173
SELECTIVE MITIGATION FOR AUTHORIZED PROJECTS

Mitigation Number	Description of Mitigation	Example of Application
5	Minimize new and improved accessibility	Relocating a portion of an alternative route to avoid an authorized trail to avoid unauthorized access to new areas
7	Span and/or avoid sensitive features	Placing structures in a manner that would span over an authorized residential subdivision
9	Maximize the span between the transmission towers	Locate structures the maximum distance possible across an authorized trail or residential subdivision

TABLE 3-174 SELECTIVE MITIGATION FOR FUTURE LAND USE		
Mitigation Number	**Description of Mitigation**	**Example of Application**
5	Minimize new and improved accessibility	Relocating a portion of an alternative route to avoid a planned recreation site, campground, or trail to avoid unauthorized access to new areas
7	Span and/or avoid sensitive features	Placing structures in a manner that would span over a planned residential subdivision, commercial area, industrial project, school, or other proposed project

There are no selective mitigation measures identified for generalized zoning and general plan management direction because the decision for permitting is the responsibility and determination of each jurisdiction crossed by the alternative route.

Residual Impacts

Tables 3-175 to 3-177 summarize the initial impacts on existing land use, authorized projects, and future land use; the selective mitigation measures listed in Table 2-13 applied to mitigate potentially adverse effects on those resources; and the remaining residual impacts. Section 3.2.11.5 reports on the high or moderate residual impact mileages that would occur after selective mitigation is applied. Tables 3-175 to 3-177 report the initial and residual impacts that will occur after considering the application of design features the Applicant has committed to as standard practice during construction, operation, and/or maintenance as applicable (refer to Section 2.4.8). For example, it would be standard practice for the Applicant to repair fences, gates, and walls to the original condition as required by the landowner or land-management agency in the event they are damaged (Design Feature 22, Table 2-8).

TABLE 3-175 SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON EXISTING LAND USE			
Resource[1]	**Initial Impacts**	**Selective Mitigation Measures Applied**	**Residual Impacts**
Agriculture			
Center-pivot irrigated agriculture	High	11	Moderate
Dryland farmland	Moderate	11	Low
Irrigated agriculture	High	11	Moderate
Outstructures	Moderate	11	Low
Farm complex (non-residential)	High	11	Moderate
Cemetery	High	7	Moderate
Communication facility (cellular/digital towers)	High	7	Low
Extraction mining (active pit, coal, gravel)	High	7	Low
Flood-control facility (canal, dam)	High	7	Low
Grazing allotments (selective mitigation measures not determined necessary)	Low	–	Low
Industrial (general, light)	Low	–	Low
Landfill	Moderate	7	Low
Oil/gas extraction	High	7	Low
Pipeline and pipeline pump station	High	7	Low
Power plant/wind farm	High	7	Low
Residential (single-family dwellings, mobile homes, apartment complexes)	High	7	Moderate
Transmission line (selective mitigation measures not necessary)[2]	Low	–	Low

TABLE 3-175
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON EXISTING LAND USE

Resource[1]	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Vacant/undeveloped (selective mitigation measures not necessary)[2]	Low	–	Low
Water tower/water/wastewater treatment plant	Moderate	7	Low

NOTES:
[1]Only resources crossed by the alternative routes are listed in this table.
[2]Low initial impacts are anticipated, considering application of design features of the Proposed Action for environmental protection (refer to Section 2.4.8).

TABLE 3-176
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON AUTHORIZED PROJECTS

Resource[1]	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Residential (under construction)	High	7	Moderate
Residential (final plat)	High	7	Moderate
Residential Mixed Use subdivision (under construction)	High	7	Moderate
Mining-Extraction (under construction)	High	7	Low
Mining Extraction (final plat)	Moderate	7	Low
Extraction – Gas (under construction)	High	7	Low
Military Facilities (under construction)	High	7	High
Industrial (under construction)[2]	Low	–	Low
Utilities (under construction)[2]	Low	–	Low
Pipeline (Under Construction)	High	7	Low
Pipeline (final plat)	Moderate	7	Low
Transmission Line (Final Plat)[2]	Low	–	Low
Flood Control Facility (under construction)	High	7	Low
Transportation-ground (under construction)[2]	Low	–	Low
Planned Road Alignment (under construction)[2]	Low	–	Low
Transmission Line (final plat)[2]	Low	–	Low
Recreation trail (final plat)	Moderate	5,7,9	Low

NOTES:
[1]Only resources crossed by the alternative routes are listed in this table.
[2]Low initial impacts are anticipated, considering application of design features of the Proposed Action for environmental protection (refer to Section 2.4.8).

TABLE 3-177
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON FUTURE LAND USE

Resource[1, 2]	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Gas extraction (preliminary plat) (selective mitigation measures not necessary)	Low	–	Low
Mining extraction (preliminary plat) (selective mitigation measures not necessary)[3]	Low	–	Low
Non-developable open space (preliminary plat)	Moderate	5, 7	Low
Pipeline (approved/concept plan) (selective mitigation measures not necessary)[3]	Low	–	Low

TABLE 3-177
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON FUTURE LAND USE

Resource[1, 2]	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Transmission line (general plan and preliminary plat) (selective mitigation measures not necessary) [3]	Low	–	Low
Utilities (final plat, preliminary plat, approved/concept plan) (selective mitigation measures not necessary) [3]	Low	–	Low

NOTES:
[1]Only resources crossed by the alternative routes are listed in this table.
[2]A development status code was assigned to future land uses to aid in the determination of the level of initial and residual impacts. The development status codes are defined as follows:

- **General plan:** a future land use that has been designated as a compatible use in a municipality's planning document (i.e., general, master, or comprehensive plans).
- **Approved/concept plan:** a future land use with a development plan that has received the necessary approvals from the respective municipality but has not yet begun the surveying and preliminary plat process.
- **Preliminary plat:** a future land use that has a drawing with surveyed boundaries of a proposed development showing such details as the general layout of streets and/or alleys, lots, blocks, and other covenants and/or elements to be applicable to the development. This preliminary document furnishes a basis for the approval, approval with modifications, or disapproval by the municipality of the general layout of the development.
- **Final plat:** a future land use with a finalized drawing of the development that has been approved by the applicable municipality decision-makers. Development can move forward with other permitting to begin construction.
- **Under construction:** a future land use where a development is under construction but the development area is not entirely built out (i.e., a subdivision where plots have been purchased and some homes are being built, but not all).

[3]Low initial impacts are anticipated, considering application of design features of the Proposed Action for environmental protection (refer to Section 2.4.8).

As noted above, there are no initial or residual impacts or selective mitigation measures identified for generalized zoning and general plan management direction because the decision for permitting is the responsibility and determination of each jurisdiction crossed by the alternative route.

3.2.11.5 Results

The summary of inventory and impact results includes the affected environment and environmental consequences for each alternative route. The term reference centerline is used to describe impacts on the existing land uses, authorized projects, future land uses, and zoning and general plan management direction. Reference centerline also refers to impacts in the Project's associated 250-foot-wide right-of-way. When discussing where the reference centerline crosses an existing land use, authorized project, future land use, and/or zoning and general plan management direction; the term crossing also includes where the reference centerline may be adjacent to a project or facility.

3.2.11.5.1 No Action Alternative

Under this alternative, existing, authorized, and future land uses would remain as they presently exist, and no impacts would occur from the Project.

3.2.11.5.2 Impacts Common to All Action Alternatives

Grazing Allotments

Grazing is a primary use of public and private lands throughout the Project area and is a major source of income for private landowners in the Project study area. Rights-of-way across grazing allotments and rangeland would be obtained through right-of-way grants, special-use authorization, or easements

negotiated between the Applicant and various federal, state, and local governments; other companies; and private landowners.

The short- and long-term impacts that may occur on these grazing allotments are discussed in this section, and the socioeconomic impacts on grazing are discussed in Section 3.2.22.

Short-term impacts would result from temporary construction disturbance (structure work areas, wire tensioning/pulling sites, wire-splicing sites, multipurpose construction yards, helicopter fly yards, guard structures, and temporary access roads [refer to Table 2-1]) due to the:

- Potential spread of noxious and invasive plant species,
- Interference with livestock management,
- Interference of access to livestock operations, and
- Increased mortality of livestock from increased traffic.

Long-term impacts on grazing would result from permanent construction disturbance due to loss of vegetation on land occupied by structure pad areas, communication regeneration stations, substations and series compensations stations, and permanent access roads. Short- and long-term impacts on grazing would occur in upland rangeland habitat. Riparian grazing habitats would be avoided.

Residual impacts on grazing allotments and rangeland crossed by the reference centerline in each of the alternative route study corridors would be low after the application of design features (refer to Section 2.4.8). A summary of the key design features designed to alleviate impacts on grazing allotments are as follows (refer to Table 2-8 for detailed information). Also note, during construction and maintenance of the Project, coordination with the BLM, USFS, other land-management agencies, and/or private landowners will occur.

- **Design Feature 1.** In construction areas where recontouring is not required, vegetation would be left in place wherever possible, and the original contour would be maintained to avoid excessive root damage and allow for resprouting in accordance with the reclamation plan.
- **Design Feature 2.** A Reclamation, Revegetation, and Monitoring Framework Plan will be developed and incorporated into the POD. The Reclamation, Revegetation, and Monitoring Framework Plan would instruct the Applicant to immediately stabilize the site following ground disturbance to control and limit plant invasive species and would require monitoring of reclamation success.
- **Design Feature 5.** A Noxious Weed Management Plan would be developed to prevent the spread of noxious weeds.
- **Design Feature 17.** The soil surface would be seeded and left rough to help reduce potential for weeds and wind erosion.
- **Design Feature 18.** Grading would be minimized by driving overland in areas approved in advance by the land-management agency in predesignated work areas whenever possible.
- **Design Feature 22.** Any fences, gates, and/or walls would be replaced, repaired, or reclaimed to their original condition as required by the landowner or land-management agency in the event they are removed, damaged, or destroyed by construction activities. Cattle guards or permanent access gates would be installed where new permanent access roads cut though fences on land administered by an affected federal agency or other grazing lands, which would reduce increased mortality of livestock from increased traffic and access. Calving, lambing, and trailing areas (pathways over which livestock are moved to facilitate proper grazing management) would be avoided in the Project right-of-way and ancillary facilities. Calving season generally occurs

between December and February. Lambing season generally occurs between March and June. Trailing areas (areas where livestock producers move livestock across lands to facilitate proper grazing management) can occur throughout the Project area and timing may vary throughout the year. Prior to construction, the Applicant would coordinate with the applicable land-management agency or private landowner to avoid areas used for calving, lambing, and trailing during construction.

- **Design Feature 26.** All construction-vehicle movement outside the right-of-way would be restricted to predesignated access, contractor-acquired access, public roads, or overland travel approved in advance by the applicable land-management agency, unless authorized by the CIC.
- **Design Feature 27.** The spatial limits of construction activities, including vehicle movement, would be predetermined with activity restricted to and confined within those limits.
- **Design Feature 32.** Watering facilities (tanks, natural springs and/or developed springs, water lines, wells, etc.) would be repaired or replaced if they are damaged or destroyed by construction activities to their predisturbed condition as required by the landowner or land-management agency.
- **Design Feature 39.** To minimize vehicle collisions with wildlife, a speed limit of 15 mph would be employed on overland access routes.

Long-term impacts on grazing, such as loss of vegetation, would be low due to the minimal extent of disturbance on rangeland from construction and operation of the Project. Impacts could be minimized through soil and vegetation reclamation practices as well as the resumption of grazing after construction and reclamation. Table 3-178 identifies the amount of disturbance (in acres) anticipated for each alternative route and the percentage of the grazing allotments disturbed (refer to Appendix M for detailed information for each allotment).

In addition to impacts on grazing allotments, short- and long-term impacts could occur on active lambing and/or calving areas. Short-term impacts could include:

- A reduction or loss of lambing/calving areas due to construction activities that take place in or near these areas.
- Mothers abandoning their young due to disturbance and noise from construction and maintenance equipment, resulting in increased mortality.
- Separation of cattle/ewes from water or food sources due to construction activities. Such separation would cause the cattle/ewes to move and consequently separate mothers from their young, resulting in increased mortality.

Short-term impacts would be minimized by performing construction activities when calving and lambing is not occurring and avoiding calving and lambing areas in the Project right-of-way and/or in associated ancillary facilities. Long-term impacts on these calving and lambing operations would be low due to the minimal extent of disturbance on these calving and lambing areas from Project operation and maintenance. Construction timing stipulations for the selected alternative route will be addressed in the POD.

TABLE 3-178
TOTAL BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND STATE GRAZING ALLOTMENTS FOR THE ALTERNATIVE ROUTES

Alternative Route	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Alternative WYCO-B (Agency and Applicant Preferred Alternative)					
BLM Total	1,544,415	198.4	2,202	913	0.0
State Total	60,259	13.4	148	61	0.0
Grand Total	**1,581,590**	**201.4**	**2,235**	**926**	**0.0**
Alternative WYCO-C					
BLM Total	1,605,223	202.5	2,248	931	0.0
State Total	60,734	13.6	151	63	0.0
Grand Total	**1,642,398**	**205.5**	**2,281**	**945**	**0.0**
Alternative WYCO-D					
BLM Total	1,238,191	204.8	2,273	901	0.0
State Total	56,867	23.6	261	104	0.0
Grand Total	**1,269,702**	**215.1**	**2,387**	**946**	**0.0**
Alternative WYCO-F					
BLM Total	1,569,394	211.0	2,342	971	0.0
State Total	61,059	13.5	149	62.0	0.0
Grand Total	**1,606,581**	**214.0**	**2,375**	**984**	**0.0**
Alternative COUT BAX-B					
BLM Total	1,386,887	218.0	22	1,221	0.0
USFS Total	111,406	19.8	13	111	0.0
State Total	118,604	28.3	34	158	0.0
Grand Total	**1,515,570**	**93.1**	**6**	**521**	**0.0**
Alternative COUT BAX-C					
BLM Total	1,516,006	219.3	2,435	1,206	0.0
USFS Total	111,406	19.8	220	109	0.0
State Total	127,640	30.9	343	170	0.0
Grand Total	**1,644,806**	**243.2**	**2,699**	**1,337**	**0.0**
Alternative COUT BAX-E					
BLM Total	1,508,882	229.9	2,551	1,241	0.0
USFS Total	22,394	11.3	126	61	0.0
State Total	131,712	20.9	232	113	0.0
Grand Total	**1,580,524**	**246.1**	**2,731**	**1,329**	**0.0**
Alternative COUT-A					
BLM Total	381,416	64.8	719	427	0.0
USFS Total	198,337	19.8	219	130	0.0
State Total	28,951	7.0	78	46	0.0
Grand Total	**589,059**	**84.5**	**938**	**558**	**0.0**
Alternative COUT-B					
BLM Total	420,056	74.8	853	449	0.0
USFS Total	200,660	15.3	174	92	0.0
State Total	43,956	12.1	138	73	0.0
Grand Total	**641,047**	**93.1**	**1,062**	**559**	**0.0**
Alternative COUT-C (Agency and Applicant Preferred Alternative)					
BLM Total	783,850	126.2	1,401	947	0.0
USFS Total	179,965	5.4	60	41	0.0
State Total	70,294	20.4	227	153	0.0
Grand Total	**1,034,109**	**134.2**	**1,688**	**1,006**	**0.0**

TABLE 3-178
TOTAL BUREAU OF LAND MANAGEMENT, U.S. FOREST SERVICE, AND STATE GRAZING ALLOTMENTS FOR THE ALTERNATIVE ROUTES

Alternative Route	Total Acres of Allotment	Miles Crossed	Acres of Temporary Disturbance[1]	Acres of Permanent Disturbance[2]	Percent of Allotment Disturbed[3]
Alternative COUT-H					
BLM Total	871,168	133.1	1,478	932	0.0
USFS Total	22,394	11.3	126	79	0.0
State Total	65,964	17.3	192	121	0.0
Grand Total	**905,960**	**145.6**	**1,616**	**1,019**	**0.0**
Alternative COUT-I					
BLM Total	946,459	153.7	1,706	1,030	0.0
USFS Total	111,406	19.8	220	133	0.0
State Total	102,222	32.6	362	218	0.0
Grand Total	**1,088,260**	**182.4**	**2,025**	**1,222**	**0.0**

NOTES:
[1]Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire tensioning/pulling sites, wire splicing sites, multipurpose construction yards, helicopter fly yards, guard structures, and temporary access roads (refer to Table 2-1).
[2]Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures (pads), communication regeneration stations, series compensation stations, and permanent access roads (refer to Tables 2-1, 2-2, and 2-3).
[3]All percentages of allotments disturbed are less than 0.1 percent. Due to rounding, the percentages show as 0.0 percent.
The grand total acreage and the miles crossed do not equal a sum of each agency's total allotment acreage or miles crossed due to overlap of allotment boundaries.
BLM = Bureau of Land Management
USFS = U.S. Forest Service

Minerals and Mining

The Project could affect minerals and mining land operations in the following ways:

- Loss of mineral resources caused by construction activities
- Limit and/or prevent existing and/or future development and extraction of mineral resources resulting from the presence of permanent facilities

Section 3.2.2.1.3 addresses the types of minerals that may be affected by the Project. Avoidance of mineral and mining operations where possible was a criterion in the Applicant's engineering study to identify locations where transmission lines could be sited and constructed. It is industry standard to site transmission lines 200 feet away from existing oil and/or gas well pads. In the event mineral extraction operations cannot be avoided during siting and final engineering, the Applicant will compensate lease holders.

If mineral extraction leases cannot be avoided, valid existing rights will be addressed. Valid existing rights are the legal rights or interest associated with a land or mineral estate. These rights cannot be divested from the estate until the interest expires or is relinquished. For minerals, valid existing rights govern authorizations for activities on existing mineral leases and mining claims. The rights vary, but generally involve the right to explore, produce, and develop within the constraints of the law and other regulations and policy at the time the lease/claim was established or authorized (BLM 2008e). In an instance where the Project could not avoid a mineral extraction operation, a mineral entry would take precedence over other land uses. The granting of a utility right-of-way would not overrule the mineral owners' right to develop and extract minerals in the right-of-way identified.

Impacts on oil and/or gas and other mineral extraction also are discussed by alternative in Section 3.2.11.5.4.

3.2.11.5.3 345-kilovolt Ancillary Transmission Components

The 345kV ancillary transmission components of the Project (Segments 4a, 4b, and 4c) would cross two grazing allotments for 5.9 miles on Links U640, U642, U643, and U644 in the BLM Fillmore Field Office (refer to Appendix M) for existing land use, the proposed Juab County Loop for 0.1 mile on Links U640 and U642 in future land use, and agriculture use for 6.6 miles on Links U640, U642, U643, and U644 in planned land use.

All residual impacts would be low. Impacts resulting from construction of Segments 4a and 4b (Links U640 and U642) would be minimal due to disturbance occurring where there is already an existing transmission line corridor. Impacts on Segment 4c (Links U643 and U644) resulting from construction would be mitigated to result in a low residual impact.

3.2.11.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Table 3-179 reports land jurisdiction, state trust lands, parallel linear facilities within 1,500 feet of the alternative routes and utility corridors for the WYCO alternative routes. The baseline resource inventory and residual impacts for the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes are presented in Tables 3-180 to 3-183.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative WYCO-B in Wyoming.

Alternative WYCO-B cross various types of state trust lands with uses that include rights-of-way for; highways, telephone and telegraph lines; telecommunication lines;; coal and hardrock leases,; natural gas, gas, and oil pipelines; power lines; and oil and gas leases.

Alternative WYCO-B in Wyoming crosses agriculture (outstructures and farm complexes), a residence, communication facilities, industrial, oil/gas extraction, pipelines and/or pipeline pump stations, grazing allotments, transmission lines, vacant/undeveloped, and the Seven Mile Hill wind farm.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-B in Wyoming crosses agriculture (outstructures and farm complexes), communication facilities, oil/gas extraction, pipelines and/or pipeline pump stations, grazing allotments, transmission lines, vacant/undeveloped, and the Seven Mile Hill wind farm.

TABLE 3-179
ALTERNATIVE ROUTE COMPARISON FOR LAND JURISDICTION, STATE TRUST LANDS, PARALLEL LINEAR FACILITIES, AND UTILITY CORRIDORS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Land Jurisdiction						State Trust Lands	Parallel Linear Facilities (within 1,500 feet) (miles)[1, 2, 3]					In West-wide Energy Corridor Utility Corridor (miles)	In Bureau of Land Management and U.S. Forest Service Designated Utility Corridors (miles)
		Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private		500-kilovolt	345-kilovolt	230-kilovolt	138-kilovolt	Pipeline		
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	129.0	0.0	0.0	13.3	0.0	63.9	12.5	0.0	21.5	3.3	21.6	57.8	26.3	20.4
Wyoming	*141.0*	*80.7*	*0.0*	*0.0*	*4.5*	*0.0*	*55.7*	*3.2*	*0.0*	*0.0*	*3.3*	*0.0*	*40.5*	*11.6*	*3.0*
Colorado	*65.3*	*48.3*	*0.0*	*0.0*	*8.8*	*0.0*	*8.2*	*9.3*	*0.0*	*21.5*	*0.0*	*21.6*	*17.3*	*14.7*	*17.5*
WYCO-C	210.0	127.8	0.0	0.0	13.4	0.0	68.7	12.8	0.0	21.5	7.3	21.6	95.4	54.0	26.0
Wyoming	*144.7*	*79.5*	*0.0*	*0.0*	*4.6*	*0.0*	*60.5*	*3.5*	*0.0*	*0.0*	*7.3*	*0.0*	*78.1*	*39.3*	*8.6*
Colorado	*65.3*	*48.3*	*0.0*	*0.0*	*8.8*	*0.0*	*8.2*	*9.3*	*0.0*	*21.5*	*0.0*	*21.6*	*17.3*	*14.7*	*17.5*
WYCO-D	249.4	106.5	0.0	0.0	23.7	0.0	119.2	26.6	0.0	59.2	29.9	66.9	76.5	70.8	69.3
Wyoming	*134.9*	*67.6*	*0.0*	*0.0*	*6.3*	*0.0*	*61.0*	*3.9*	*0.0*	*0.0*	*27.3*	*0.0*	*35.5*	*34.6*	*32.8*
Colorado	*114.5*	*38.9*	*0.0*	*0.0*	*17.4*	*0.0*	*58.2*	*22.7*	*0.0*	*59.2*	*2.6*	*66.9*	*41.0*	*36.2*	*36.6*
WYCO-F	218.8	141.7	0.0	0.0	13.4	0.0	63.6	12.6	0.0	21.5	3.3	21.6	59.3	26.3	20.4
Wyoming	*153.5*	*93.4*	*0.0*	*0.0*	*4.6*	*0.0*	*55.4*	*3.3*	*0.0*	*0.0*	*3.3*	*0.0*	*42.0*	*11.6*	*3.0*
Colorado	*65.3*	*48.3*	*0.0*	*0.0*	*8.8*	*0.0*	*8.2*	*9.3*	*0.0*	*21.5*	*0.0*	*21.6*	*17.3*	*14.7*	*17.5*

NOTES:
[1]Number of miles is approximate, rounded to the nearest 0.1, and may include where a linear facility crosses a Project centerline. These numbers may change and are current as of June 2013.
[2]The numbers summed in the individual categories (e.g., 138kV, 230kV, 345kV, etc.) may not equal the total miles due to potential overlap between linear facilities.
[3]To ensure that all parallel linear facilities within 1,500 feet were captured, report included linear facilities within 2,000 feet of the Project centerline.

TABLE 3-180
ALTERNATIVE ROUTE COMPARISON FOR EXISTING LAND USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Existing Land Use Crossed (miles)														Residences within 0.25 mile[1]	Residences in the right-of-way[1]	Residual Impacts (miles)		
		Agriculture	Cemetery	Communication Facility	Extraction Mining (active pit, coal, and gravel)	Flood-control Facility (canal and dam)	Industrial (general and light)	Landfill	Gas Extraction Wells	Pipeline	Power Plant\Wind Farm	Grazing Allotments	Residential	Pipeline Pump Station	Transmission Line			Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.6	13.4	1.1	201.7	0.1	0.0	1.2	5.0	1.0	206.5	0.2	0.0
Wyoming	*141.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.1*	*0.0*	*0.6*	*10.9*	*1.1*	*140.6*	*0.1*	*0.0*	*1.0*	*4.0*	*1.0*	*140.5*	*0.1*	*0.0*
Colorado	*65.3*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*2.5*	*0.0*	*61.1*	*0.0*	*0.0*	*0.2*	*1.0*	*0.0*	*61.0*	*0.1*	*0.0*
WYCO-C	210.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.3	32.8	1.1	205.7	0.1	0.0	1.2	5.0	1.0	205.5	0.2	0.0
Wyoming	*144.7*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*30.3*	*1.1*	*144.6*	*0.1*	*0.0*	*1.0*	*4.0*	*1.0*	*144.5*	*0.1*	*0.0*
Colorado	*65.3*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*2.5*	*0.0*	*61.1*	*0.0*	*0.0*	*0.2*	*1.0*	*0.0*	*61.0*	*0.1*	*0.0*
WYCO-D	249.4	15.0	0.0	0.1	0.3	0.1	0.0	0.3	0.7	17.4	3.8	215.9	0.3	0.0	12.6	55.0	1.0	227.5	6.8	0.0
Wyoming	*134.9*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.6*	*9.9*	*3.8*	*134.8*	*0.1*	*0.0*	*1.8*	*17.0*	*1.0*	*134.7*	*0.1*	*0.0*
Colorado	*114.5*	*15.0*	*0.0*	*0.0*	*0.3*	*0.1*	*0.0*	*0.3*	*0.1*	*7.5*	*0.0*	*81.1*	*0.2*	*0.0*	*10.8*	*1.0*	*0.0*	*92.8*	*6.7*	*0.0*
WYCO-F	218.8	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	13.5	1.1	214.2	0.1	0.0	1.2	5.0	1.0	214.0	0.2	0.0
Wyoming	*153.5*	*0.0*	*0.0*	*0.1*	*0.0*	*0.1*	*0.1*	*0.0*	*0.0*	*11.0*	*1.1*	*153.1*	*0.1*	*0.0*	*1.0*	*4.0*	*1.0*	*153.0*	*0.1*	*0.0*
Colorado	*65.3*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*2.5*	*0.0*	*61.1*	*0.0*	*0.0*	*0.2*	*1.0*	*0.0*	*61.0*	*0.1*	*0.0*

NOTES:
[1]Existing residences in alternative route rights-of-way and within 0.25 mile of reference centerlines were calculated with residence structure point data collected by EPG. Residence structure point data was collected through interpretation of aerial imagery and/or field verification.
Due to overlap of some existing land uses, the total miles of residual impacts are less than if all existing land use impacts were added together.

TABLE 3-181
ALTERNATIVE ROUTE COMPARISON FOR AUTHORIZED USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Authorized Use (miles crossed)												Residual Impacts		
		Extraction – Gas	Extraction Mining	Flood Control Facility	Industrial	Military Facilities	Pipeline	Planned Road Alignment	Recreation Trail	Residential	Residential Mixed Use	Transmission Line	Utilities	Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	11.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	7.5	30.5	0.0	0.0
Wyoming	*141.0*	*7.4*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*10.6*	*7.5*	*26.2*	*0.0*	*0.0*
Colorado	*65.3*	*4.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.3*	*0.0*	*0.0*
WYCO-C	210.0	12.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	7.5	30.9	0.0	0.0
Wyoming	*144.7*	*7.8*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*10.6*	*7.5*	*26.6*	*0.0*	*0.0*
Colorado	*65.3*	*4.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.3*	*0.0*	*0.0*
WYCO-D	249.4	30.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	10.3	50.1	0.0	0.0
Wyoming	*134.9*	*14.7*	*1.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*9.8*	*10.3*	*34.5*	*0.0*	*0.0*
Colorado	*114.5*	*15.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*15.6*	*0.0*	*0.0*
WYCO-F	218.8	11.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	7.5	30.6	0.0	0.0
Wyoming	*153.5*	*7.5*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*10.6*	*7.5*	*26.3*	*0.0*	*0.0*
Colorado	*65.3*	*4.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.3*	*0.0*	*0.0*

NOTE: Due to overlap of some authorized land uses, the total miles of residual impacts are less than if all authorized land use impacts were added together.

TABLE 3-182
ALTERNATIVE ROUTE COMPARISON FOR FUTURE LAND USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Extraction		Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/ Concept Plan)	Transmission Line (Preliminary Plat)	Transmission Line General Plan	Utilities		Residual Impacts		
		Gas (Preliminary Plat)	Mining (Preliminary Plat)					Preliminary Plat	Approved/ Concept Plan	Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	36.5	0.0	0.0	0.0	69.4	0.0	18.2	0.0	121.2	0.0	0.0
Wyoming	*141.0*	*36.5*	*0.0*	*0.0*	*0.0*	*21.5*	*0.0*	*18.2*	*0.0*	*73.3*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*	*0.0*	*47.9*	*0.0*	*0.0*	*0.0*	*47.9*	*0.0*	*0.0*
WYCO-C	210.0	42.3	0.0	0.0	0.0	52.1	0.0	12.9	0.0	106.9	0.0	0.0
Wyoming	*144.7*	*42.3*	*0.0*	*0.0*	*0.0*	*4.2*	*0.0*	*12.9*	*0.0*	*59.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*	*0.0*	*47.9*	*0.0*	*0.0*	*0.0*	*47.9*	*0.0*	*0.0*
WYCO-D	249.4	38.9	2.3	0.0	0.0	44.9	0.0	12.9	0.0	92.7	0.0	0.0
Wyoming	*134.9*	*38.9*	*2.3*	*0.0*	*0.0*	*10.3*	*0.0*	*12.9*	*0.0*	*58.1*	*0.0*	*0.0*
Colorado	*114.5*	*0.0*	*0.0*	*0.0*	*0.0*	*34.6*	*0.0*	*0.0*	*0.0*	*34.6*	*0.0*	*0.0*
WYCO-F	218.8	49.6	0.0	0.0	0.0	69.1	0.0	18.2	0.0	119.5	0.0	0.0
Wyoming	*153.5*	*49.6*	*0.0*	*0.0*	*0.0*	*21.2*	*0.0*	*18.2*	*0.0*	*71.6*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*	*0.0*	*47.9*	*0.0*	*0.0*	*0.0*	*47.9*	*0.0*	*0.0*

NOTE: Due to overlap of some future land uses, the total miles of residual impacts are less than if all future land use impacts were added together.

TABLE 3-183
ALTERNATIVE ROUTE COMPARISON FOR ZONING AND GENERAL PLAN MANAGEMENT DIRECTION INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Zoning and General Plan Management Direction									Preliminary Permitting Review		
		Agriculture	Commercial	Industrial	Mining, Agriculture, Grazing	Parks/ Preservation	Public/ Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Permitted	Conditionally Permitted	Not Permitted
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	152.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0	118.8	0.0
Wyoming	*141.0*	*87.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*34.0*	*53.5*	*0.0*
Colorado	*65.3*	*65.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*65.3*	*0.0*
WYCO-C	210.0	177.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	110.8	0.0
Wyoming	*144.7*	*111.9*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*66.4*	*45.5*	*0.0*
Colorado	*65.3*	*65.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*65.3*	*0.0*
WYCO-D	249.4	188.8	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	12.8	176.4	0.0
Wyoming	*134.9*	*74.3*	*0.0*	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.2*	*0.0*	*12.8*	*61.9*	*0.0*
Colorado	*114.5*	*114.5*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*114.5*	*0.0*
WYCO-F	218.8	143.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.4	118.5	0.0
Wyoming	*153.5*	*78.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*25.4*	*53.2*	*0.0*
Colorado`	*65.3*	*65.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*65.3*	*0.0*

Authorized Projects

Alternative WYCO-B cross the following authorized projects:

- Anadarko Atlantic Rim Natural Gas Project
- PacifiCorp Seven Mile Hill Wind Energy Facility
- Power company of Wyoming Chokecherry Wind Farm
- State oil and/or gas leases

Future Land Use

Alternative WYCO-B in Wyoming crosses the TransWest Express transmission line, Hogback Ridge (Whirlwind 1) wind energy project, Rosebud coal boundary, and the Continental Divide – Creston Junction oil and gas project.

Zoning and General Plan Management Direction

Alternative WYCO-B crosses lands zoned for agriculture in Carbon and Sweetwater counties.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-B in Wyoming would have a total of 0.1 mile of moderate residual impacts that occur where the reference centerline crosses center-pivot agriculture. There are no high residual impacts on existing land use.

Approving the Project could require affected existing and future pipelines to install cathodic protection if it is currently not in place.

Authorized Projects

Alternative WYCO-B in Wyoming would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative WYCO-B in Wyoming would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-B in Wyoming crosses 34.0 miles of permitted land use and 53.5 miles of lands zoned for agriculture in Sweetwater and Carbon counties. Based on a preliminary review of the zoning and or general plan management direction, the Project would require a conditional use permit. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative WYCO-B in Colorado.

Alternative WYCO-B crosses the Bald Mountain State Trust Land, the South Nipple Rim State Trust Land, and three oil and gas leases owned by Langham Petroleum LLC, Quicksilver Resources Inc., and Yates Petroleum. Alternative WYCO-B in Colorado is located in a WWEC for approximately 14.7 miles and BLM-designated utility corridors in the BLM Little Snake and White River field offices for 17.5 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-B in Colorado crosses center-pivot agriculture, pipeline and/or pipeline pump station, grazing allotments, transmission lines, and vacant/undeveloped land uses.

Authorized Projects

Alternative WYCO-B crosses the following authorized projects:

- BLM oil and/or gas leases in the BLM White River and Little Snake Field Offices
- State oil and/or gas leases

Future Land Use

Alternative WYCO-B in Colorado crosses the TransWest Express transmission line.

Zoning and General Plan Management Direction

Alternative WYCO-B in Colorado cross land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-B in Colorado would have 0.1 mile of moderate residual impacts on existing land use where the alternative crosses center-pivot agriculture.

Authorized Projects

Alternative WYCO-B in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative WYCO-B in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-B in Colorado crosses 65.3 miles of lands zoned for agricultural use in Moffat County. Based on a preliminary review of the zoning and or general plan management direction, the Project would require a conditional use permit. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative WYCO-C

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative WYCO-C in Wyoming.

Alternative WYCO-C in Wyoming crosses various types of state trust lands with uses that include rights-of-way for telephone lines; telecommunication lines; communication site roads; natural gas, gas, and oil pipelines; power lines; coal and hardrock leases; and oil and gas leases.

Alternative WYCO-C in Wyoming is located in a WWEC for 39.3 miles and BLM-designated and underground utility corridors in the BLM Rawlins Field Office for 8.6 miles.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-C in Wyoming crosses residential, communication facilities, oil/gas extraction, pipelines and/or pipeline pump stations, grazing allotments, transmission lines, vacant/undeveloped, water tower/wastewater treatment plant, well, and the Seven Mile Hill wind farm.

Authorized Projects

Alternative WYCO-C crosses the following authorized projects:

- Anadarko Atlantic Rim Natural Gas Project
- PacifiCorp Seven Mile Hill Wind Energy Facility
- Power Company of Wyoming Chokecherry Wind Farm
- State oil/and or gas leases

Future Land Use

Alternative WYCO-C crosses the Continental Divide – Creston Junction oil and gas project, Hogback Ridge (Whirlwind 1) wind energy project, Rosebud coal mine, and the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative WYCO-C in Wyoming crosses land zoned for agriculture in Carbon and Sweetwater counties.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-C in Wyoming would have a total of 0.1 mile of moderate residual impacts that occur where the reference centerline crosses a residential property. There are no high residual impacts on existing land use.

Authorized Projects

Alternative WYCO-C in Wyoming would have no high or moderate residual impacts on authorized projects

Future Land Use

Alternative WYCO-C in Wyoming would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-C in Wyoming crosses 66.4 miles of lands zoned for agricultural use in Sweetwater and Carbon counties. Based on a preliminary review of the zoning and/or general plan management direction, the Project may not be permitted and would require coordination with the local agency. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative WYCO-C in Colorado.

Alternative WYCO-C in Colorado crosses the Bald Mountain State Trust Land, the South Nipple Rim State Trust Land, Elk Springs State Trust Land, and three oil and gas leases owned by Langham Petroleum LLC, Quicksilver Resources Inc., and Yates Petroleum Corporation. Alternative WYCO-C in Colorado is located in a WWEC for 14.7 miles and BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 17.5 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-C in Colorado would cross the same existing lands uses as Alternative WYCO-B.

Authorized Projects

Alternative WYCO-C cross the following authorized projects:

- BLM oil and/or gas leases in the BLM White River Field Office
- State oil and/or gas leases

Future Land Use

Alternative WYCO-C in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative WYCO-C in Colorado crosses land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-C in Colorado would have 0.1 mile moderate residual impacts where it crosses center-pivot agriculture.

Authorized Projects

Alternative WYCO-C in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative WYCO-C in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-C in Colorado crosses lands zoned for agricultural use in Sweetwater and Carbon counties. Based on preliminary review of zoning and general plan management direction, the Project crosses 66.4 miles of zones that allow transmission lines and 44.5 miles of zones that may not permitted which would require approval from the local agency. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative WYCO-D

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative WYCO-D in Wyoming.

Alternative WYCO-D in Wyoming crosses various types of state trust lands with uses that include rights-of-way for telephone and telegraph lines; telecommunication lines; communication site roads; natural gas, gas, and oil pipelines; power lines; railroads; oil and gas leases; and coal and hard rock leases.

Alternative WYCO-D in Wyoming is located in a WWEC for 34.6 miles and a BLM-designated utility corridor in the BLM Rawlins Field Office for 32.8 miles.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-D in Wyoming crosses residential, communication facilities, oil/gas extraction, pipelines and/or pipeline pump stations, grazing allotments, transmission lines, vacant/undeveloped, and the Seven Mile Hill wind farm.

Authorized Projects

Alternative WYCO-D cross the following authorized projects:

- Anadarko Atlantic Rim Natural Gas Project
- PacifiCorp Seven Mile Hill Wind Energy Facility
- Power Company of Wyoming Chokecherry Wind Farm
- State oil/and or gas leases

Future Land Use

Alternative WYCO-D in Wyoming crosses the TransWest Express transmission line, Hogback Ridge (Whirlwind 1) wind energy project, Rosebud coal mine, and Continental Divide – Creston Junction oil and gas project.

Zoning and General Plan Management Direction

Alternative WYCO-Din Wyoming crosses land zoned for agriculture in Carbon and Sweetwater counties, residential in Carbon County and the town of Hanna, and industrial in Hanna.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-D in Wyoming has a total of 0.1 mile of moderate residual impacts that occurs where the reference centerline crosses an agricultural farm complex. There are no high residual impacts on existing land use.

Authorized Projects

Alternative WYCO-D in Wyoming would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative WYCO-D in Wyoming would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-Din Wyoming crosses land zoned for agriculture in Carbon and Sweetwater counties, residential in Carbon County and the town of Hanna, and industrial in Hanna. Based on preliminary review of zoning and general plan management direction, the Project crosses 12.8 miles of zones that would permit transmission lines and 61.9 miles of zones that do not allow transmission lines which would require approval from the local agency. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM, utility corridors for Alternative WYCO-D in Colorado.

Alternative WYCO-D in Colorado crosses the Baker's Peak, Elk Springs, Pole Gulch, Thornburg Draw, and Twenty Mile state trust lands, and six oil and gas leases owned by Antelope Energy Company LLC, Axia Energy LLC, Beartooth Oil and Gas Company, Gulfport Energy Corporation, QEP Energy Company, and Yate Petroleum Corporation.

Alternative WYCO-D in Colorado is located in a WWEC for 36.2 miles and BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 36.6 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-D in Colorado crosses dryland farmland and irrigated farmland, a residence, extraction mining, flood-control facility, landfill, oil/gas extraction, pipeline and/or pipeline pump stations, grazing allotments, transmission lines, and vacant/undeveloped land uses.

Authorized Projects

Alternative WYCO-D crosses the following authorized projects:

- BLM oil and/or gas leases in the White River and Little Snake Field Offices
- State oil and/or gas leases

Future Land Use

Alternative WYCO-D in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative WYCO-D in Colorado crosses land zoned for agriculture in Moffat and Routt counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-D would have a total of 6.7 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland and a residence. There are no high residual impacts on existing land use.

Authorized Projects

Alternative WYCO-D in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative WYCO-D in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-D in Colorado crosses land zoned for agriculture in Moffat and Routt counties. Based on preliminary review of the zoning and general plan management direction, the Project would cross zones that would require a conditional use permit for 114.5 miles. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative WYCO-F

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative WYCO-F in Wyoming.

Alternative WYCO-F in Wyoming crosses various types of state trust lands with uses that include rights-of-way for telephone and telegraph lines; telecommunication lines; \; natural gas, gas, and oil pipelines; power lines; railroads; coal and hardrock leases; and oil and gas leases.

Alternative WYCO-F in Wyoming is located in a WWEC for 11.6 miles and BLM-designated and underground utility corridors in the BLM Rawlins Field Office for approximately 3.0 miles.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-F in Wyoming crosses communication facilities, pipelines, residential, dam, grazing allotments, industrial, Seven Mile Hill wind farms, transmission lines, and vacant/undeveloped lands.

Authorized Projects

Alternative WYCO-F cross the following authorized projects:

- Anadarko Atlantic Rim Natural Gas Project
- PacifiCorp Seven Mile Hill Wind Energy Facility
- Power Company of Wyoming Chokecherry Wind Farm
- State oil/and or gas leases

Future Land Use

Alternative WYCO-F in Wyoming crosses the Trans West Express transmission line project and Hogback Ridge (Whirlwind 1) wind energy project, and Rosebud coal mine area.

Zoning and General Plan Management Direction

Alternative WYCO-F in Wyoming crosses land zoned for agriculture in Carbon and Sweetwater counties.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-F in Wyoming has 0.1 mile of moderate residual impacts that occur where the reference centerline crosses center pivot agriculture. There are no high residual impacts on existing land use.

Authorized Projects

Alternative WYCO-F in Wyoming would have no high or moderate residual impacts on authorized land use. Future Land Use

Alternative WYCO-F in Wyoming would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-F in Wyoming crosses land zoned for agriculture in Carbon and Sweetwater counties. Based on preliminary review of the zoning and general plan management direction, the Project crosses 114.5 miles of zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-179 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC, BLM, and USFS utility corridors for Alternative WYCO-F in Colorado.

Alternative WYCO-F in Colorado crosses the Bald Mountain State Trust Land, Elk Springs State Trust Land, South Nipple Rim State Trust Land, and three oil and gas leases owned by Langham Petroleum LLC, Quicksilver Resources Inc. and Yates Petroleum Corporation with the reference centerline.

Alternative WYCO-F in Colorado is located in a WWEC for 14.7 miles and in the BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 17.4 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-F in Colorado crosses grazing allotments, flood-control facility, pipeline and pipeline pump station, transmission line, and vacant/undeveloped land.

Authorized Projects

Alternative WYCO-F crosses the following authorized projects:

- BLM oil and/or gas leases in the White River and Little Snake Field Offices
- State oil and/or gas leases

Future Land Use

Alternative WYCO-F in Colorado crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative WYCO-F in Colorado crosses land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-F in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative WYCO-F in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative WYCO-F in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-F in Colorado crosses land zoned for agriculture in Moffat County. Based on preliminary review of zoning and general plan management direction, the Project crosses 65.3 miles of

zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Table 3-184 reports land jurisdiction, state trust lands, parallel linear facilities within 1,500 feet of the alternative route and utility corridors for the COUT BAX alternative routes. The baseline resource inventory and residual impacts for the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes are presented in Tables 3-185 to 3-188.

Alternative COUT BAX-B

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-184 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT BAX-B in Colorado. Alternative COUT BAX-B in Utah does not cross state trust lands.

Alternative COUT BAX-B is located in a WWEC for 1.0 mile and BLM-designated utility corridors in the BLM Grand Junction and White River Field Offices for 48.4 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT BAX-B in Colorado crosses agriculture outstructures, gas extraction, dry land farming, grazing allotments, pipeline and pipeline pump stations, transmission lines, and vacant/undeveloped lands.

Authorized Projects

Alternative COUT BAX-B crosses the following authorized projects:

- BLM oil and/or gas leases in the Grand Junction and White River Field Offices
- Blue Mountain Energy Inc. Deserado Mine
- Enterprise Mid-America Pipeline Western Expansion II Project

Future Land Use

Alternative COUT BAX-B in Colorado crosses the TransWest Express transmission line.

Zoning and General Plan Management Direction

Alternative COUT BAX-B in Colorado crosses land zoned as agriculture and public/quasi-public in Mesa County, agriculture in Moffat County, agriculture and residential in Rio Blanco County, and public/quasi-public, residential, and agriculture in Garfield County.

TABLE 3-184
ALTERNATIVE ROUTE COMPARISON FOR LAND JURISDICTION, STATE TRUST LANDS, PARALLEL LINEAR FACILITIES, AND UTILITY CORRIDORS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Land Jurisdiction						State Trust Lands	Parallel Linear Facilities (within 1,500 feet) (miles)[1, 2, 3]					In West-wide Energy Corridor Utility Corridor (miles)	In Bureau of Land Management and U.S. Forest Service Designated Utility Corridors (miles)
		Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private		500-kilovolt	345-kilovolt	230-kilovolt	138-kilovolt	Pipeline		
COUT BAX-B	279.9	172.8	*16.9*	0.0	*30.7*	0.0	59.5	20.2	0.0	96.4	0.0	24.0	39.3	6.1	132.2
Colorado	*87.0*	*69.6*	*0.0*	*0.0*	*0.0*	*0.0*	*17.4*	*0.0*	*0.0*	*0.4*	*0.0*	*3.8*	*36.3*	*1.0*	*48.4*
Utah	*192.9*	*103.2*	*16.9*	*0.0*	*30.7*	*0.0*	*42.1*	*20.2*	*0.0*	*96.0*	*0.0*	*20.2*	*3.0*	*5.1*	*83.8*
COUT BAX-C	290.4	179.4	*16.9*	0.0	*34.6*	0.0	59.5	21.2	0.0	73.1	0.0	37.2	39.3	17.6	128.8
Colorado	*87.0*	*69.6*	*0.0*	*0.0*	*0.0*	*0.0*	*17.4*	*0.0*	*0.0*	*0.4*	*0.0*	*3.8*	*36.3*	*1.0*	*48.4*
Utah	*203.4*	*109.8*	*16.9*	*0.0*	*34.6*	*0.0*	*42.1*	*21.2*	*0.0*	*72.7*	*0.0*	*33.4*	*3.0*	*16.5*	*80.4*
COUT BAX-E	292.2	191.1	*16.9*	0.0	*26.9*	0.0	59.5	24.6	0.0	31.6	0.0	46.6	45.4	34.8	136.8
Colorado	*87.0*	*69.6*	*0.0*	*0.0*	*0.0*	*0.0*	*17.4*	*0.0*	*0.0*	*0.4*	*0.0*	*3.8*	*36.3*	*1.0*	*48.4*
Utah	*205.2*	*121.5*	*16.9*	*0.0*	*26.9*	*0.0*	*49.1*	*24.6*	*0.0*	*31.2*	*0.0*	*42.8*	*9.1*	*33.8*	*88.5*

NOTES:
[1]Number of miles is approximate, rounded to the nearest 0.1, and may include where a linear facility crosses a Project centerline. These numbers may change and are current as of June 2013.
[2]The numbers summed in the individual categories (e.g., 138kV, 230kV, 345kV, etc.) may not equal the total miles due to potential overlap between linear facilities.
[3]To ensure that all parallel linear facilities within 1,500 feet were captured, report included linear facilities within 2,000 feet of the Project centerline.

TABLE 3-185
ALTERNATIVE ROUTE COMPARISON
FOR EXISTING LAND USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Existing Land Use Crossed (miles)															Residences within 0.25 mile	Residences in the Right-of-way	Residual Impacts (miles)		
		Agriculture	Cemetery	Communication Facility	Extraction Mining (active pit, coal, and gravel)	Flood-control Facility (canal and dam)	Industrial (general and light)	Landfill	Gas Extraction Wells	Pipeline	Power Plant\Wind Farm	Grazing Allotments	Residential	Pipeline Pump Station	Transmission Line	Water Tower/ Water/ Wastewater Treatment Plant			Low	Moderate	High
COUT BAX-B	279.9	4.8	0.0	0.3	0.2	0.1	0.2	0.0	0.5	16.9	0.0	240.7	0.0	0.0	10.0	0.0	108.0	0.0	248.3	2.8	0.0
Colorado	*87.0*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*16.5*	*0.0*	*85.7*	*0.0*	*0.0*	*1.0*	*0.0*	*5.0*	*0.0*	*86.2*	*0.0*	*0.0*
Utah	*192.9*	*4.5*	*0.0*	*0.3*	*0.2*	*0.1*	*0.2*	*0.0*	*0.2*	*0.4*	*0.0*	*155.0*	*0.0*	*0.0*	*9.0*	*0.0*	*10.30*	*0.0*	*162.1*	*2.8*	*0.0*
COUT BAX-C	290.4	4.8	0.0	0.3	0.2	0.1	0.2	0.0	0.5	16.9	0.0	244.2	0.0	0.0	22.3	0.0	108.0	0.0	256.7	2.8	0.0
Colorado	*87.0*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*16.5*	*0.0*	*85.7*	*0.0*	*0.0*	*1.0*	*0.0*	*5.0*	*0.0*	*86.2*	*0.0*	*0.0*
Utah	*203.4*	*4.5*	*0.0*	*0.3*	*0.2*	*0.1*	*0.2*	*0.0*	*0.2*	*0.4*	*0.0*	*158.5*	*0.0*	*0.0*	*21.3*	*0.0*	*103.0*	*0.0*	*170.5*	*2.8*	*0.0*
COUT BAX-E	292.2	4.4	0.0	0.3	0.0	0.0	0.0	0.0	0.7	17.1	0.0	247.2	0.0	0.2	43.3	0.0	100.0	0.0	259	2.7	0.0
Colorado	*87.0*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*16.5*	*0.0*	*85.7*	*0.0*	*0.0*	*1.0*	*0.0*	*5.0*	*0.0*	*86.2*	*0.0*	*0.0*
Utah	*205.2*	*4.1*	*0.0*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.4*	*0.6*	*0.0*	*161.5*	*0.0*	*0.2*	*42.3*	*0.0*	*95.0*	*0.0*	*172.8*	*2.7*	*0.0*

NOTES: Existing residences in alternative route rights-of-way and within 0.25 mile of reference centerlines were calculated with residence structure point data collected by EPG. Residence structure point data was collected through interpretation of aerial imagery and/or field verification.
Due to overlap of some existing land uses, the total miles of residual impacts are less than if all existing land use impacts were added together.

TABLE 3-186
ALTERNATIVE ROUTE COMPARISON FOR AUTHORIZED USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Authorized Use (miles crossed)												Residual Impacts		
		Extraction – Gas	Extraction Mining	Flood Control Facility	Industrial	Military Facilities	Pipeline	Planned Road Alignment	Recreation Trail	Residential	Residential Mixed Use	Transmission Line	Utilities	Low	Moderate	High
COUT BAX-B	279.9	74.0	9.7	0.0	0.0	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	80.3	0.0	1.0
Colorado	*87.0*	*11.8*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*13.1*	*0.0*	*0.0*
Utah	*192.9*	*62.2*	*8.4*	*0.0*	*0.0*	*1.0*	*0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*67.5*	*0.0*	*1.0*
COUT BAX-C	290.4	73.3	11.7	0.0	1.1	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	83.0	0.0	1.0
Colorado	*87.0*	*11.8*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*13.1*	*0.0*	*0.0*
Utah	*203.4*	*61.5*	*10.4*	*0.0*	*1.1*	*1.0*	*0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*69.9*	*0.0*	*1.0*
COUT BAX-E	292.2	72.3	10.5	0.2	1.1	1.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	78.8	0.0	1.0
Colorado	*87.0*	*11.8*	*1.3*	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*13.1*	*0.0*	*0.0*
Utah	*205.2*	*60.5*	*9.2*	*0.0*	*1.1*	*1.0*	*0.3*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*65.7*	*0.0*	*1.0*

NOTE: Due to overlap of some authorized land uses, the total miles of residual impacts are less than if all authorized land use impacts were added together.

TABLE 3-187
ALTERNATIVE ROUTE COMPARISON FOR FUTURE LAND USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Extraction		Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/ Concept Plan)	Transmission Line (Preliminary Plat)	Transmission Line General Plan	Utilities		Residual Impacts		
		Gas (Preliminary Plat)	Mining (Preliminary Plat)					Preliminary Plat	Approved/ Concept Plan	Low	Moderate	High
COUT BAX-B	279.9	0.0	0.0	0.0	0.0	91.4	0.0	0.0	0.0	91.4	0.0	0.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.0*	*35.6*	*0.0*	*0.0*	*0.0*	*35.6*	*0.0*	*0.0*
Utah	*192.9*	*0.0*	*0.0*	*0.0*	*0.0*	*55.8*	*0.0*	*0.0*	*0.0*	*55.8*	*0.0*	*0.0*
COUT BAX-C	290.4	0.0	0.0	0.0	0.0	113.1	0.0	0.0	7.8	113.8	0.0	0.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.0*	*35.6*	*0.0*	*0.0*	*0.0*	*35.6*	*0.0*	*0.0*
Utah	*203.4*	*0.0*	*0.0*	*0.0*	*0.0*	*77.5*	*0.0*	*0.0*	*7.8*	*78.2*	*0.0*	*0.0*
COUT BAX-E	292.2	0.0	0.0	0.0	0.0	101.0	0.0	0.0	8.3	109.3	0.0	0.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.0*	*35.6*	*0.0*	*0.0*	*0.0*	*35.6*	*0.0*	*0.0*
Utah	*205.2*	*0.0*	*0.0*	*0.0*	*0.0*	*65.4*	*0.0*	*0.0*	*8.3*	*73.7*	*0.0*	*0.0*

NOTE: Due to overlap of some future land uses, the total miles of residual impacts are less than if all future land use impacts were added together.

TABLE 3-188
ALTERNATIVE ROUTE COMPARISON FOR ZONING AND GENERAL PLAN MANAGEMENT DIRECTION INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Zoning and General Plan Management Direction									Preliminary Permitting Review		
		Agriculture	Commercial	Industrial	Mining, Agriculture, Grazing	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Permitted	Conditionally Permitted	Not Permitted
COUT BAX-B	279.9	150.0	0.2	0.0	79.0	19.1	11.5	7.4	12.7	0.0	14.3	265.5	0.1
Colorado	*87.0*	*62.5*	*0.0*	*0.0*	*0.0*	*0.0*	*11.5*	*0.3*	*12.7*	*0.0*	*0.0*	*87.0*	*0.0*
Utah	*192.9*	*87.5*	*0.2*	*0.0*	*79.0*	*19.1*	*0.0*	*7.1*	*0.0*	*0.0*	*14.3*	*178.5*	*0.1*
COUT BAX-C	290.4	150.0	0.2	1.1	88.4	19.1	11.5	7.4	12.7	0.0	14.3	276.0	0.1
Colorado	*87.0*	*62.5*	*0.0*	*0.0*	*0.0*	*0.0*	*11.5*	0.3	*12.7*	*0.0*	*0.0*	*87.0*	*0.0*
Utah	*203.4*	*87.5*	*0.2*	*1.1*	*88.4*	*19.1*	*0.0*	7.1	*0.0*	*0.0*	*14.3*	*189.0*	*0.1*
COUT BAX-E	292.2	152.4	0.0	1.1	70.5	36.6	11.5	7.4	12.7	0.0	14.3	277.8	0.1
Colorado	*87.0*	*62.5*	*0.0*	*0.0*	*0.0*	*0.0*	*11.5*	0.3	*12.7*	*0.0*	*0.0*	*87.0*	*0.0*
Utah	*205.2*	*89.9*	*0.0*	*1.1*	*70.5*	*36.6*	*0.0*	7.1	*0.0*	*0.0*	*14.3*	*190.8*	*0.1*

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT BAX-B in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT BAX-B in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT BAX-B in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-B in Colorado crosses land zoned as agriculture and public/quasi-public in Mesa County, agriculture in Moffat County, agriculture and residential in Rio Blanco County, and public/quasi-public, residential, and agriculture in Garfield County. Based on preliminary review of zoning and general plan management direction, the Project would cross 87.0 miles of zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-184 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM, utility corridors for Alternative COUT BAX-B in Utah.

Alternative COUT BAX-B in Utah crosses SITLA metalliferous, humic shale, mineral, oil and gas, potash, range improvement use leases, and a U.S. Army Corp of Engineers lease.

Alternative COUT BAX-B in Utah is located in a WWEC for 5.1 miles and BLM-designated utility corridors in the BLM Moab, Price, and Richfield Field Offices for 83.8 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT BAX-B in Utah would cross a canal, communication facilities, transmission lines, general industrial, gas extraction, active mining extraction, pipelines and/or pipeline pump stations, dryland farmland, irrigated farmland, center-pivot agriculture, grazing allotments, and vacant/undeveloped lands.

Authorized Projects

Alternative COUT BAX-B crosses the following authorized projects:

- BLM oil and/or gas leases in the Moab, Price, and Richfield Field Offices
- Interwest Mining Company Deer Creek Coal Mine (coal exploration)
- Anadarko Petroleum Corporation Ferron Natural Gas Project
- State non-coal mine development
- Flatirons Resource LLC No. 1-4 Helium Well Project Pipeline
- Abandoned White Sands Missile Launch Facility
- State oil and/or gas leases

Future Land Use

Alternative COUT BAX-B in Utah crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative COUT BAX-B in Utah crosses land zoned for parks/preservation and agriculture in Emery County; agriculture in Grand County; agriculture, recreation, and parks/preservation in Juab County; and commercial, agriculture, and parks/preservation in Sanpete county.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT BAX-B in Utah has a total of 2.8 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland and center-pivot farmland. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT BAX-B in Utah would have 1.0 mile of high residual impacts where the alternative would cross military facilities under construction. There would be no moderate impacts on authorized projects.

Future Land Use

Alternative COUT BAX-B in Utah would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-B in Utah crosses land zoned for parks/preservation and agriculture in Emery County; agriculture in Grand County; agriculture, recreation, and parks/preservation in Juab County; and commercial, agriculture, and parks/preservation in Sanpete county. Based on preliminary review of zoning and general plan management direction, the Project crosses 14.3 miles of zones that would permit transmission lines, 178.5 miles of zones that would require a conditional use permit for transmission lines, and 0.1 mile of zones that do not permit transmission lines (which would require approval and coordination with the local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative COUT BAX-C

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-184 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT BAX-C in Colorado. Alternative COUT BAX-C does not cross state trust lands.

Alternative COUT BAX-C in Colorado is located in a WWEC for 1.0 mile and BLM-designated utility corridors in the BLM Grand Junction and White River Field Offices for 48.4 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT BAX-C in Colorado crosses pipelines and/or pipeline pump stations, transmission lines, oil/gas extraction, agricultural outstructures, dryland farming, grazing allotments, and vacant/undeveloped lands.

Authorized Projects

Alternative COUT BAX-C crosses the following authorized projects:

- BLM oil and/or gas leases in the Grand Junction and White River Field Offices
- Blue Mountain Energy Inc. Deserado Mine
- Enterprise Mid-America Pipeline Western Expansion II Project

Future Land Use

Alternative COUT BAX-C in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative COUT BAX-C in Colorado crosses lands zoned as agriculture and public/quasi-public in Mesa County; agriculture in Moffat County; residential and agriculture in Rio Blanco County; and residential, public/quasi-public, and agriculture in Garfield County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT BAX-C in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT BAX-C in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT BAX-C in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-C in Colorado crosses lands zoned as agriculture and public/quasi-public in Mesa County; agriculture in Moffat County; residential and agriculture in Rio Blanco County; and residential, public/quasi-public, and agriculture in Garfield County. Based on preliminary review of zoning and general plan management direction, the Project crosses 87.0 miles of zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-184 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT BAX-C in Utah.

Alternative COUT BAX-C in Utah crosses SITLA metalliferous, oil and gas, potash, range improvement use leases, and a U.S. Army Corp of Engineers lease.

Alternative COUT BAX-C in Utah is located in a WWEC for 16.5 miles and BLM-designated utility corridors in the BLM Moab, Price, and Richfield Field Offices for 80.4 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT BAX-C in Utah crosses a canal, communication facility, transmission lines, pipeline and or pipeline pump station, general industrial, oil and gas extraction, mineral extraction, dryland farmland, irrigated farmland, center-pivot irrigation, grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT BAX-C crosses the following authorized projects:

- BLM oil and/or gas leases in the Moab, Price, and Richfield Field Offices
- Interwest Mining Company Deer Creek Coal Mine (coal exploration)
- Anadarko Petroleum Corporation Ferron Natural Gas Project
- State non-coal mine development
- Flatirons Resource LLC No. 1-4 Helium Well Project Pipeline
- Abandoned White Sands Missile Launch Facility
- State oil and/or gas leases

Future Land Use

Alternative COUT BAX-C in Utah crosses the Woodside geothermal site and the TransWest Express transmission project.

Zoning and General Plan Management Direction

Alternative COUT BAX-C in Utah crosses land zoned for agriculture in Grand County; agriculture, parks/preservation, and recreation in Juab County; industrial, parks/preservation, and agriculture in Emery County; and agriculture in Grand County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT BAX-C in Utah would have a total of 2.8 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland and center-pivot irrigated farmland. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT BAX-C in Utah would have 1.0 mile of high residual impacts where the alternative would cross military facilities under constructions. There would be no moderate impacts on authorized projects.

Future Land Use

Alternative COUT BAX-C in Utah would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-C in Utah crosses land zoned for agriculture in Grand County; agriculture, parks/preservation, and recreation in Juab County; industrial, parks/preservation, and agriculture in Emery County; and agriculture in Grand County. Based on preliminary review of zoning and general plan management direction, the Project crosses 14.3 miles of zones that would permit a transmission line, 189.0 miles of zones that would require a conditional use permit for a transmission line, and 0.1 mile of zones that do not permit transmission lines (which would require approval and coordination with the local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative COUT BAX-E

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-184 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT BAX-E in Colorado.

Alternative COUT BAX-E does not cross state trust lands.

Alternative COUT BAX-E in Colorado is located in a WWEC for 1.0 mile and BLM-designated utility corridors in the BLM Grand Junction and White River Field Offices for 48.4 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT BAX-E in Colorado crosses pipeline and pipeline pump stations, transmission lines, oil and gas extraction, dryland farmland, agricultural outstructures, grazing allotments, and vacant/undeveloped lands.

Authorized Projects

Alternative COUT BAX-E crosses the following authorized projects:

- BLM oil and/or gas leases in the Grand Junction and White River Field Offices
- Blue Mountain Energy Inc. Deserado Mine
- Enterprise Mid-America Pipeline Western Expansion II Project

Future Land Use

Alternative COUT BAX-E in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative COUT BAX-E in Colorado crosses land zoned for agriculture in Mesa and Moffat counties; residential and agriculture in Rio Blanco County; and recreation, public/quasi-public, and agriculture in Garfield County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT BAX-E in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT BAX-E in Colorado would have no high or moderate impacts on authorized projects.

Future Land Use

Alternative COUT BAX-E in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-E in Colorado crosses land zoned for agriculture in Mesa and Moffat counties; residential and agriculture in Rio Blanco County; and recreation, public/quasi-public, and agriculture in Garfield County. Based on preliminary review of zoning and general plan management direction, the Project crosses 87.0 miles of zones that would require a conditional use permit. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-184 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT BAX-E in Utah.

Alternative COUT BAX-E in Utah crosses SITLA metalliferous, oil and gas, potash, range improvement use leases, and a U.S. Army Corp of Engineers lease. Alternative COUT BAX-E in Utah is located in a

WWEC for 33.8 miles and BLM-designated utility corridors in the Moab and Price Field Offices for 88.5 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT BAX-E in Utah crosses a communication facility, pipelines and/or pipeline pump stations, transmission lines, oil and gas extraction, irrigated farmland (including center-pivot irrigated farmland), grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT BAX-E crosses the following authorized projects:

- BLM oil and/or gas leases in the Moab, Price, and Richfield Field Offices
- Interwest Mining Company Deer Creek Coal Mine (coal exploration)
- Canyon Fuel Company LLC Skyline Drive
- State non-coal mine development
- Flatirons Resource LLC No. 1-4 Helium Well Project Pipeline
- Abandoned White Sands Missile Launch Facility
- State oil and/or gas leases

Future Land Use

Alternative COUT BAX-C in Utah crosses the Woodside geothermal site and the TransWest Express transmission project.

Zoning and General Plan Management Direction

Alternative COUT BAX-E in Utah crosses land zoned for agriculture and parks/preservation in Carbon County; agriculture in Grand County; agriculture, recreation, and parks/preservation in Juab County; agriculture and parks/preservation in Sanpete County; and industrial, parks/preservation, and agriculture in Emery County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT BAX-E in Utah would have a total of 2.7 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland and center-pivot irrigated agriculture. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT BAX-E in Utah would have 1.0 mile of high residual impacts where the alternative crosses military facilities under construction. There would be no moderate impacts on authorized projects.

Future Land Use

Alternative COUT BAX-E in Utah would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-E in Utah crosses land zoned for agriculture and parks/preservation in Carbon County; agriculture in Grand County; agriculture, recreation, and parks/preservation in Juab County; agriculture and parks/preservation in Sanpete County; and industrial, parks/preservation, and agriculture in Emery County. Based on preliminary review of zoning and general plan management direction, the Project crosses 14.3 miles of zones that would permit a transmission line, 189.0 miles of zones that would require a conditional use permit for a transmission line, and 0.1 mile of zones that do not allow transmission lines (which would require approval and coordination with local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

Table 3-189 reports land jurisdiction, state trust lands, parallel linear facilities within 1,500 feet of the alternative routes and utility corridors for the COUT alternative routes. The baseline resource inventory and residual impacts for the Colorado to Utah – U.S. Highway 40 to Central to Utah to Clover (COUT) alternative routes are presented in Tables 3-190 to 3-193.

Alternative COUT-A

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e., BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC, BLM, and USFS utility corridors for Alternative COUT-A in Colorado.

Alternative COUT-A in Colorado crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-A in Colorado is located in a WWEC for 15.1 miles and a BLM-designated utility corridor in the BLM White River Field Office for approximately 16.2 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-A in Colorado crosses communication facility, transmission lines, pipeline and pipeline pump stations, grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-A crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-A in Colorado does not cross any future land uses.

Zoning and General Plan Management Direction

Alternative COUT-A in Colorado crosses land zoned for agriculture in Moffat County.

TABLE 3-189
ALTERNATIVE ROUTE COMPARISON
FOR LAND JURISDICTION, STATE TRUST LANDS, PARALLEL LINEAR FACILITIES, AND UTILITY CORRIDORS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Land Jurisdiction						State Trust Lands	Parallel Linear Facilities (within 1,500 feet) (miles)[1, 2, 3]					In West-wide Energy Corridor Utility Corridor (miles)	In Bureau of Land Management and U.S. Forest Service Designated Utility Corridors (miles)
		Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private		500-kilovolt	345-kilovolt	230-kilovolt	138-kilovolt	Pipeline		
COUT-A	207.9	55.2	19.5	0.0	22.9	0.0	110.3	7.3	0.0	114.6	0.0	43.7	12.5	49.5	17.4
Colorado	*24.3*	*16.2*	*0.0*	*0.0*	*2.3*	*0.0*	*5.8*	*1.1*	*0.0*	*20.0*	*0.0*	*24.0*	*5.3*	*15.1*	*16.2*
Utah	*183.6*	*39.0*	*19.5*	*0.0*	*20.6*	*0.0*	*104.5*	*6.2*	*0.0*	*94.6*	*0.0*	*19.7*	*7.2*	*34.4*	*1.1*
COUT-B	218.2	55.7	18.3	*0.0*	24.8	7.8	111.6	16.0	0.0	92.1	0.0	110.6	12.2	38.3	22.1
Colorado	*24.3*	*16.2*	*0.0*	*0.0*	*2.3*	*0.0*	*5.8*	*1.1*	*0.0*	*20.0*	*0.0*	*24.1*	*5.3*	*15.1*	*16.2*
Utah	*193.9*	*39.5*	*18.3*	*0.0*	*22.5*	*7.8*	*105.8*	*14.9*	*0.0*	*72.1*	*0.0*	*86.5*	*6.9*	*23.2*	*5.9*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	94.1	8.4	*0.0*	33.4	1.6	70.8	21.6	0.0	68.3	0.0	38.3	14.6	19.7	19.4
Colorado	*25.0*	*18.1*	*0.0*	*0.0*	*2.2*	*0.0*	*4.7*	*1.1*	*0.0*	*19.9*	*0.0*	*19.3*	*5.1*	*12.8*	*13.7*
Utah	*183.2*	*75.8*	*8.4*	*0.0*	*31.2*	*1.6*	*66.1*	*20.5*	*0.0*	*48.4*	*0.0*	*19.0*	*9.5*	*6.9*	*5.7*
COUT-H	200.6	95.2	7.7	*0.0*	25.6	1.6	70.5	22.4	0.0	48.8	0.0	41.2	25.2	14.2	18.5
Colorado	*25.0*	*18.1*	*0.0*	*0.0*	*2.2*	*0.0*	*4.7*	*1.0*	*0.0*	*25.0*	*0.0*	*19.6*	*5.9*	*12.8*	*13.7*
Utah	*175.6*	*77.1*	*7.7*	*0.0*	*23.4*	*1.6*	*65.8*	*21.4*	*0.0*	*23.8*	*0.0*	*21.6*	*19.3*	*1.4*	*4.8*
COUT-I	240.2	122.1	16.9	0.0	36.0	1.6	63.6	37.2	0.0	83.9	0.0	43.6	17.6	14.2	29.7
Colorado	*25.0*	*18.1*	*0.0*	*0.0*	*2.2*	*0.0*	*4.7*	*1.0*	*0.0*	*25.0*	*0.0*	*19.6*	*5.9*	*12.8*	*13.7*
Utah	*215.2*	*104.0*	*16.9*	*0.0*	*33.8*	*1.6*	*58.9*	*36.2*	*0.0*	*58.9*	*0.0*	*24.0*	*11.7*	*1.4*	*16.0*

NOTES:
[1]Number of miles is approximate, rounded to the nearest 0.1, and may include where a linear facility crosses a Project centerline. These numbers may change and are current as of June 2013.
[2]The numbers summed in the individual categories (e.g., 138kV, 230kV, 345kV, etc.) may not equal the total miles due to potential overlap between linear facilities.
[3]To ensure that all parallel linear facilities within 1,500 feet were captured, report included linear facilities within 2,000 feet of the Project centerline.

TABLE 3-190
ALTERNATIVE ROUTE COMPARISON FOR EXISTING LAND USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Existing Land Use Crossed (miles)															Residences in 0.25 mile	Residences in the Right-of-way	Residual Impacts (miles)		
		Agriculture	Cemetery	Communication Facility	Extraction Mining (active pit, coal, and gravel)	Flood-control Facility (canal and dam)	Industrial (general and light)	Landfill	Extraction Gas Extraction Wells	Pipeline	Power Plant\Wind Farm	Grazing Allotments	Residential	Pipeline Pump Station	Transmission Line	Water Tower/Water/ Wastewater Treatment Plant/Well			Low	Moderate	High
COUT-A	207.9	10.8	0.0	0.2	0.0	0.0	0.1	0.0	1.1	7.8	0.0	85.5	0.6	0.0	15.8	0.4	212.0	2.0	102.4	9.8	0.0
Colorado	*24.3*	*0.0*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.6*	*0.0*	*22.0*	*0.0*	*0.0*	*0.2*	*0.0*	*0.0*	*0.0*	*22.0*	*0.0*	*0.0*
Utah	*183.6*	*10.8*	0.0	*0.2*	*0.0*	*0.0*	*0.1*	*0.0*	*1.1*	*7.2*	*0.0*	*63.5*	*0.6*	*0.0*	*15.6*	*0.4*	*212.0*	*2.0*	*80.4*	*9.8*	*0.0*
COUT-B	218.2	9.1	0.1	0.2	0.8	0.4	0.1	0.0	0.6	2.3	0.0	94.3	1.	0.0	55.0	0.4	231.0	17.0	133.5	9.0	0.0
Colorado	*24.3*	*0.0*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.6*	*0.0*	*22.0*	*0.0*	*0.0*	*0.2*	*0.0*	*0.0*	*0.0*	*22.0*	*0.0*	*0.0*
Utah	*193.9*	*9.1*	0.1	*0.2*	*0.8*	*0.4*	*0.1*	*0.0*	*0.6*	*1.7*	*0.0*	*72.3*	*1.*	*0.0*	*54.8*	*0.4*	*231.0*	*17.0*	*111.5*	*9.0*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	5.5	0.0	0.2	0.0	0.0	0.0	0.0	1.8	2.8	0.0	136.4	0.3	0.0	26.3	0.0	99.0	1.0	148.1	1.2	0.0
Colorado	*25.0*	*0.0*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.6*	*0.0*	*23.5*	*0.0*	*0.0*	*5.3*	*0.0*	*0.0*	*0.0*	*23.5*	*0.0*	*0.0*
Utah	*183.2*	*5.5*	0.0	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*1.8*	*2.2*	*0.0*	*112.9*	*0.3*	*0.0*	*21.8*	*0.0*	*99.0*	*1.0*	*124.6*	*1.2*	*0.0*
COUT-H	200.6	5.7	0.0	0.2	0.3	0.0	0.1	0.0	1.9	2.5	0.0	146.7	0.0	0.2	29.7	0.1	142.0	0.0	154.2	3.0	0.0
Colorado	*25.0*	*0.0*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.9*	*0.0*	*23.5*	*0.0*	*0.0*	*5.3*	*0.0*	*0.0*	*0.0*	*23.5*	*0.0*	*0.0*
Utah	*175.6*	*5.7*	0.0	*0.2*	*0.3*	*0.0*	*0.1*	*0.0*	*1.9*	*1.6*	*0.0*	*123.2*	*0.0*	*0.2*	*24.4*	*0.1*	*142.0*	*0.0*	*130.7*	*3.0*	*0.0*
COUT-I	240.2	8.9	0.0	0.2	0.2	0.0	0.0	0.0	2.2	2.4	0.0	183.4	0.0	0.0	28.6	0.0	102.0	0.0	193.3	4.3	0.0
Colorado	*25.0*	*0.0*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.9*	*0.0*	*23.5*	*0.0*	*0.0*	*5.3*	*0.0*	*0.0*	*0.0*	*23.5*	*0.0*	*0.0*
Utah	*215.2*	*8.9*	0.0	*0.2*	*0.2*	*0.0*	*0.0*	*0.0*	*2.2*	*1.5*	*0.0*	*159.9*	*0.0*	*0.0*	*23.3*	*0.0*	*102.0*	*0.0*	*169.8*	*4.3*	*0.0*

NOTES:
Existing residences in alternative route rights-of-way and within 0.25 mile of reference centerline were calculated with residence structure point data collected by EPG. Residence structure point data was collected through interpretation of aerial imagery and/or field verification.
Due to overlap of some existing land uses, the total miles of residual impacts are less than if all existing land use impacts were added together.

TABLE 3-191
ALTERNATIVE ROUTE COMPARISON FOR AUTHORIZED USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Authorized Use (miles crossed)												Residual Impacts		
		Extraction – Gas	Extraction Mining	Flood Control Facility	Industrial	Military Facilities	Pipeline	Planned Road Alignment	Recreation Trail	Residential	Residential Mixed Use	Transmission Line	Utilities	Low	Moderate	High
COUT-A	207.9	63.3	0.4	0.0	0.0	0.0	5.6	0.0	0.0	0.7	0.6	0.0	0.0	64.1	7.3	0.0
Colorado	*24.3*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.3*	*0.0*	*0.0*
Utah	*183.6*	*62.0*	*0.4*	*0.0*	*0.0*	*0.0*	*5.6*	*0.0*	*0.0*	*0.7*	*0.6*	*0.0*	*0.0*	*62.8*	*7.3*	*0.0*
COUT-B	218.2	50.8	0.4	0.0	0.0	0.0	0.3	0.0	0.0	1.2	4.5	0.0	0.0	51.2	5.7	0.0
Colorado	*24.3*	*1.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.3*	*0.0*	*0.0*
Utah	*193.9*	*49.5*	*0.4*	*0.0*	*0.0*	*0.0*	*0.3*	*0.0*	*0.0*	*1.2*	*4.5*	*0.0*	*0.0*	*49.9*	*5.7*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	68.7	1.1	0.3	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	68.7	0.5	0.0
Colorado	*25.0*	*1.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.0*	*0.0*	*0.0*
Utah	*183.2*	*67.7*	*1.1*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.5*	*0.0*	*0.0*	*0.0*	*67.7*	*0.5*	*0.0*
COUT-H	200.6	76.3	4.3	0.2	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	79.1	0.0	0.0
Colorado	*25.0*	*1.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.0*	*0.0*	*0.0*
Utah	*175.6*	*75.3*	*4.3*	*0.2*	*0.0*	*0.0*	*0.1*	*0.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*78.1*	*0.0*	*0.0*
COUT-I	240.2	98.7	7.8	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	105.8	0.0	0.0
Colorado	*25.0*	*1.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*1.0*	*0.0*	*0.0*
Utah	*215.2*	*97.7*	*7.8*	*0.0*	*0.0*	*0.0*	*0.2*	*0.0*	*0.4*	*0.0*	*0.0*	*0.0*	*0.0*	*104.8*	*0.0*	*0.0*

NOTE: Due to overlap of some authorized land uses, the total miles of residual impacts are less than if all authorized land use impacts were added together.

TABLE 3-192
ALTERNATIVE ROUTE COMPARISON FOR FUTURE LAND USE INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Extraction		Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/ Concept Plan)	Transmission Line (Preliminary Plat)	Transmission Line General Plan	Utilities		Residual Impacts		
		Gas (Preliminary Plat)	Mining (Preliminary Plat)					Preliminary Plat	Approved/ Concept Plan	Low	Moderate	High
COUT-A	207.9	0.0	0.0	1.2	0.1	83.1	0.1	0.0	0.0	84.5	0.0	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*
Utah	*183.6*	*0.0*	*0.0*	*1.2*	*0.1*	*183.6*	*0.1*	*0.0*	*0.0*	*60.2*	*0.0*	*0.0*
COUT-B	218.2	0.0	0.0	0.0	0.1	149.2	0.1	0.0	0.0	149.4	0.0	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*
Utah	*193.9*	*0.0*	*0.0*	*0.0*	*0.1*	*124.9*	*0.1*	*0.0*	*0.0*	*125.1*	*0.0*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	0.0	0.0	0.0	0.0	97.2	0.0	0.0	0.0	97.2	0.0	0.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*19.0*	*0.0*	*0.0*	*0.0*	*19.0*	*0.0*	*0.0*
Utah	*183.2*	*0.0*	*0.0*	*0.0*	*0.0*	*78.2*	*0.0*	*0.0*	*0.0*	*78.2*	*0.0*	*0.0*
COUT-H	200.6	0.0	0.0	0.0	0.0		0.0	0.0	0.0	96.1	0.0	0.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*19.1*	*0.0*	*0.0*	*0.0*	*19.0*	*0.0*	*0.0*
Utah	*175.6*	*0.0*	*0.0*	*0.0*	*0.0*	*77.1*	*0.0*	*0.0*	*0.0*	*77.1*	*0.0*	*0.0*
COUT-I	240.2	0.0	0.0	0.0	0.0	74.5	0.0	0.0	0.0	74.5	0.0	0.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*19.0*	*0.0*	*0.0*	*0.0*	*19.0*	*0.0*	*0.0*
Utah	*215.2*	*0.0*	*0.0*	*0.0*	*0.0*	*55.5*	*0.0*	*0.0*	*0.0*	*55.5*	*0.0*	*0.0*

NOTE: Due to overlap of some future land uses, the total miles of residual impacts are less than if all future land use impacts were added together.

TABLE 3-193
ALTERNATIVE ROUTE COMPARISON FOR ZONING AND GENERAL PLAN MANAGEMENT DIRECTION INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Zoning and General Plan Management Direction									Preliminary Permitting Review		
		Agriculture	Commercial	Industrial	Mining, Agriculture, Grazing	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Permitted	Conditionally Permitted	Not Permitted
COUT-A	207.9	97.1	0.7	0.3	43.9	48.8	0.0	10.8	0.1	1.2	65.8	137.0	0.1
Colorado	*24.3*	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*
Utah	*183.6*	*72.8*	*0.7*	*0.3*	*43.9*	*48.8*	*0.0*	*10.8*	*0.1*	*1.2*	*65.8*	*112.7*	*0.1*
COUT-B	218.2	110.6	0.2	0.3	43.9	33.7	0.0	10.8	0.1	0.0	60.6	138.9	0.1
Colorado	*24.3*	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*24.3*	*0.0*
Utah	*193.9*	*86.3*	*0.2*	*0.3*	*43.9*	*33.7*	*0.0*	*10.8*	*0.1*	*0.0*	*60.6*	*114.6*	*0.1*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	76.7	0.0	0.0	55.2	36.0	0.0	10.8	0.1	0.0	39.2	139.5	0.1
Colorado	*25.0*	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*39.2*	*25.0*	*0.0*
Utah	*183.2*	*51.7*	*0.0*	*0.0*	*55.2*	*36.0*	*0.0*	*10.8*	*0.1*	*0.0*	*0.0*	*114.5*	*0.1*
COUT-H	200.6	56.8	0.0	0.4	57.9	49.5	0.0	7.1	0.2	0.0	18.3	153.5	0.1
Colorado	*25.0*	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*25.0*	*0.0*
Utah	*175.6*	*31.8*	*0.0*	*0.4*	*57.9*	*49.5*	*0.0*	*7.1*	*0.2*	*0.0*	*18.3*	*128.5*	*0.1*
COUT-I	240.2	66.3	0.2	0.0	97.0	40.9	0.0	7.1	0.0	0.0	17.7	193.7	0.1
Colorado	*25.0*	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*25.0*	*0.0*
Utah	*215.2*	*41.3*	*0.2*	*0.0*	*97.0*	*40.9*	*0.0*	*7.1*	*0.0*	*0.0*	*17.7*	*168.7*	*0.1*

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-A in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT-A in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-A in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-A in Colorado crosses land zoned for agriculture in Moffat County. Based on preliminary review of zoning and general plan management direction, the Project crosses 24.3 miles of zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC, BLM, and USFS utility corridors for Alternative COUT-A in Utah.

Alternative COUT-A crosses multiple SITLA oil and gas contract areas.

Alternative COUT-A is located in a WWEC for 34.4 and in BLM (Salt Lake and Vernal Field Offices) and USFS (Uinta National Forest) designated utility corridors for 1.1 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-A in Utah crosses pipelines and pipeline pump stations (including the Roosevelt pipeline), water/wastewater treatment facility, communication facilities, irrigated farmland, center-pivot agriculture, transmission lines, residential, light industrial, oil/gas extraction, grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-A crosses the following authorized projects:

- BLM oil and/or gas leases in the Vernal Field Office
- Bill Barrett Corporation Blacktail Ridge Exploration and Development Agreement
- Bill Barrett Corporation Lake Canyon Exploration and Development Agreement
- Questar Exploration and Production Company Greater Deadman Bench
- Newfield Gusher Development
- Roosevelt Pipeline
- State oil and/or gas leases

Future Land Use

Alternative COUT-A in Utah crosses the TransWest Express transmission line project, Uinta Express pipeline - East Canyon route, and Strawberry Highlands residential subdivision – Strawberry and Willow Creek Phase.

Zoning and General Plan Management Direction

Alternative COUT-A in Utah crosses land zoned as agriculture, recreation, and parks/preservation Juab County; residential, industrial, agriculture, and parks/preservation in Uintah County; residential, agriculture, and parks/preservation in Utah County; commercial, industrial, agriculture, and parks/preservation in Duchesne County; parks/preservation in Sanpete County; and mixed-use residential and parks/preservation in Wasatch County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-A in Utah would have 9.8 miles of moderate residual impacts associated on existing land use. These residual impacts would occur where the reference centerline crosses 9.2 miles of agriculture (center pivot sprinkler irrigation and irrigated farmland), and 0.6 mile residential. There would be no high residual impacts on existing land use.

Authorized Projects

Alternative COUT-A in Utah would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-A in Colorado would have 7.3 miles of moderate residual impacts associated with future land use. These residual impacts would occur where the reference centerline crosses the Strawberry Highland residential project – Strawberry and East Canyon phases.

Zoning and General Plan Management Direction

Alternative COUT-A in Utah crosses land zoned as agriculture, recreation, and parks/preservation Juab County; residential, industrial, agriculture, and parks/preservation in Uintah County; residential, agriculture, and parks/preservation in Utah County; commercial, industrial, agriculture, and parks/preservation in Duchesne County; parks/preservation in Sanpete County; and mixed-use residential and parks/preservation in Wasatch County. Based on preliminary review of zoning and general plan management direction, the Project crosses 65.8 miles of zones that would permit a transmission line, 112.7 miles of zones that would require a conditional use permit, and 0.1 mile of zones that do not allow transmission lines (which would require approval and coordination with local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative COUT-B

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines,

pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT-B in Colorado.

Alternative COUT-B in Colorado crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-B in Colorado is located in a WWEC for 15.1 miles and a BLM-designated utility corridor in the White River Field Office for 16.2 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-B in Colorado crosses grazing allotments, transmission lines, pipeline and pipeline pump facilities, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-B crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-B in Colorado does not cross any future land uses.

Zoning and General Plan Management Direction

Alternative COUT-B in Colorado cross land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-B in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT-B in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-B in Colorado would have no high or moderate residual impacts on future land uses.

Zoning and General Plan Management Direction

Alternative COUT-B in Colorado cross land zoned for agriculture in Moffat County. Based on preliminary review of zoning and general plan management direction, the Project crosses 24.3 miles of zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC, BLM, and USFS utility corridors for Alternative COUT-B in Utah.

Alternative COUT-B crosses multiple SITLA oil and gas leases.

Alternative COUT-B is located in a WWEC for 23.2 miles and in BLM (Price, Salt Lake and Vernal Field Offices) and USFS (Uinta National Forest) designated utility corridors for 5.9 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-B in Utah crosses communication facilities, canal, wastewater/water treatment facility, pipelines, transmission lines, residential, light industrial, oil/gas extraction, extraction mining (including a gravel mine), a cemetery, irrigated farmland, center-pivot agriculture, an animal stockyard, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-B crosses the following authorized projects:

- BLM oil and/or gas leases in the Vernal Field Office
- Questar Exploration and Production Company Greater Deadman Bench
- Newfield Gusher Development
- Berry Petroleum South Unit Oil and Gas Development
- State oil and/or gas leases

Future Land Use

Alternative COUT-B in Utah crosses a Uinta Express pipeline – East Canyon route and the TransWest Express transmission line.

Zoning and General Plan Management Direction

Alternative COUT-B in Utah crosses land zoned for agriculture and parks/preservation for Carbon County; commercial, industrial, and agriculture in Duchesne County; agriculture, recreation, and parks/preservation in Juab County; parks/preservation in Sanpete County; residential, industrial, agriculture, and parks/recreation in Uintah County; and residential, agriculture, and parks/preservation in Utah County; and parks/preservation in Wasatch County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-B in Utah would have a total of 9.0 miles of moderate residual impacts associated with this alternative route. These residual impacts occur where the reference centerline crosses irrigated farmland for 5.9 miles, 1.4 miles of center-pivot agriculture, 0.2 mile of an animal stockyard, the Ioka West cemetery (also known as the old Ioka cemetery) for 0.1 mile, and residential (single-family) for 1.4 miles. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT-B in Utah would have 5.7 miles of moderate residual impacts that occur where the reference centerline crosses authorized residential subdivisions (including Moondance Ranch Phase II, Silver Moon, Soldier Summit Estates, and Taylor).

Future Land Use

Alternative COUT-B in Utah would have no moderate or high residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-B in Utah crosses land zoned for agriculture and parks/preservation for Carbon County; commercial, industrial, and agriculture in Duchesne County; agriculture, recreation, and parks/preservation in Juab County; parks/preservation in Sanpete County; residential, industrial, agriculture, and parks/recreation in Uintah County; and residential, agriculture, and parks/preservation in Utah County; and parks/preservation in Wasatch County. Based on preliminary review of zoning and general plan management direction, the Project crosses 60.6 miles of zones that would allow transmission lines, 114.6 miles of zones that would require a conditional use permit, and 0.1 miles of zones that do not allow transmission lines (which would require approval and coordination with local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT-C.

Alternative COUT-C in Colorado crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-C in Colorado is located in a WWEC for 12.8 miles and a BLM-designated utility corridor in the BLM White River Field Office for 13.7 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-C in Colorado crosses grazing allotments, pipelines and/or pipeline pump stations, transmission lines, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-C crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-C in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative COUT-C in Colorado crosses land zoned for agriculture in Moffat and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-C in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT-C in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-C in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-C in Colorado crosses land zoned for agriculture in Moffat and Rio Blanco counties. Based on preliminary review of zoning and general plan management direction, the Project crosses 24.3 miles of zones that would require a conditional use permit. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC, BLM, and USFS utility corridors for Alternative COUT-C in Utah.

Alternative COUT-C in Utah crosses SITLA leases for oil and gas, gilsonite mining, and oil shale.

Alternative COUT-C in Utah is located in a WWEC for 6.9 miles and in BLM (Price, Salt Lake, and Vernal Field Offices) and USFS (Uinta National Forest) designated utility corridors 5.7 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-C in Utah crosses communication facilities; pipelines and/or pipeline pump stations, transmission line, residential, oil/gas extraction, extraction mining, dryland farming, irrigated farmland (including center-pivot irrigation), grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-C crosses the following authorized projects:

- BLM oil and/or gas leases in the Vernal Field Office
- EOG Resources Inc. Chapita Wells-Stagecoach Area Natural Gas Development
- Gasco Energy Inc.
- Uinta Natural Gas Development Project
- Kerr-McGee Oil and Gas Onshore LP Greater Natural Buttes Project
- XTO Energy Riverbend Directional Infill
- State non-coal mine development
- State oil and/or gas leases

Future Land Use

Alternative COUT-C in Utah crosses the TransWest Express transmission project.

Zoning and General Plan Management Direction

Alternative COUT-C in Utah crosses land zoned for agriculture and parks/preservation in Carbon County; agriculture in Duchesne County; agriculture, recreation, and parks/preservation in Juab County; parks/preservation in Sanpete County; agriculture in Uintah County; residential, agriculture, and parks/preservation in the Utah County; and parks/preservation in Wasatch County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-C in Utah would have a total of 1.2 miles of moderate residual impacts that occur where the reference centerline crosses residential for 0.3 mile and irrigated farmland (including center-pivot agriculture)for 0.9 mile. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT-C in Utah would have 0.5 mile of moderate residual impacts that occur where the reference centerline would cross Soldier Summit Estates residential subdivision.

Future Land Use

Alternative COUT-C in Utah would have no moderate or high residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-C in Utah crosses land zoned for agriculture and parks/preservation in Carbon County; agriculture in Duchesne County; agriculture, recreation, and parks/preservation in Juab County; parks/preservation in Sanpete County; agriculture in Uintah County; residential, agriculture, and parks/preservation in the Utah County; and parks/preservation in Wasatch County. Based on preliminary review of zoning and general plan management direction, the Project crosses 39.2 miles of zones that would allow transmission lines (permitted), 114.5 miles of zones that would require a conditional use permit, and 0.1 mile of zones that would not allow a transmission line (which would require approval and coordination with local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same impacts on existing, authorized, planned, and future land use as Alternative COUT-C.

Alternative COUT-H

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT-H in Colorado.

Alternative COUT-H in Colorado crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-H in Colorado is located in a WWEC for 12.8 miles and a BLM-designated utility corridor in the White River Field Office for 13.7 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-H in Colorado crosses pipelines and/or pipeline pump stations, transmission lines, communication facility, grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-H crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-H in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative COUT-H in Colorado crosses land zoned for agriculture in Moffat and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-H in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT-H in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-H in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-H in Colorado crosses land zoned for agriculture in Moffat and Rio Blanco counties. Based on preliminary review of zoning and general plan management direction, the Project crosses 25.0 miles of zones that would require a conditional use permit for transmission lines. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT-H in Utah.

Alternative COUT-H in Utah crosses SITLA leases for gilsonite mining, oil and gas, oil shale, and range improvement.

Alternative COUT-H in Utah is located in a WWEC for 1.4 mile and a BLM-designated utility corridor in the BLM Price and Vernal Field Offices for 4.8 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-H in Utah would crosses communication facilities, oil/ gas extraction, Extraction mining (including a gravel pit), pipelines and/or pipeline pump stations, a water well, light industrial, dryland farming, irrigated farming (including center-pivot irrigation), grazing allotments, transmission lines, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-C in Utah crosses the following authorized projects:

- BLM oil and/or gas leases in the Vernal, Price, and Richfield Field Offices
- EOG Resources Inc. Chapita Wells-Stagecoach Area Natural Gas Development
- Gasco Energy Inc. Uinta Natural Gas Development Project
- Kerr-McGee Oil and Gas Onshore LP Greater Natural Buttes Project
- XTO Energy Riverbend Directional Infill
- State non-coal mine development
- Intermountain Power Agency Wildcat Loadout
- State oil and/or gas leases

Future Land Use

Alternative COUT-H in Utah crosses the TransWest Express Transmission Project.

Zoning and General Plan Management Direction

Alternative COUT-H in Utah crosses land zoned as residential, agriculture, industrial, and parks/preservation in Carbon County; agriculture in Duchesne County; agriculture and parks/preservation in Emery County; agriculture, parks/preservation, and recreation in Juab County; agriculture and parks/preservation in Sanpete County: and agriculture in Uintah County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-H in Utah would have a total of 3.0 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland including center-pivot agriculture. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT-H in Utah would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-H in Utah would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-H in Utah crosses land zoned as residential, agriculture, industrial, and parks/preservation in Carbon County; agriculture in Duchesne County; agriculture and parks/preservation in Emery County; agriculture, parks/preservation, and recreation in Juab County; agriculture and parks/preservation in Sanpete County: and agriculture in Uintah County. Based on preliminary review of zoning and general plan management direction, the Project crosses 18.3 miles of zones that would allow transmission lines (permitted), 128.5 miles of zones that would require a conditional use permit, and 0.1 mile of zones that would not allow a transmission line (which would require approval and coordination with local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same impacts on existing, authorized, planned, and future land use.

Alternative COUT-I

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of state trust lands and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT-I in Colorado.

Alternative COUT-I in Colorado crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-I in Colorado is located in a WWEC for 12.8 miles and a BLM-designated utility corridor in the BLM White River Field Office for 13.7 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-I in Colorado crosses pipeline and/or pipeline pump station, grazing allotments, transmission line, and vacant/undeveloped lands.

Authorized Projects

Alternative COUT-I crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-I in Colorado crosses the TransWest Express transmission line project.

Zoning and General Plan Management Direction

Alternative COUT-I in Colorado crosses land zoned for agriculture and Moffat and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-I in Colorado would have no high or moderate residual impacts on existing land use.

Authorized Projects

Alternative COUT-I in Colorado would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-I in Colorado would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-I in Colorado crosses land zoned for agriculture and Moffat and Rio Blanco counties. Based on preliminary review of zoning and general plan management direction, the Project crosses 25.0 miles of zones that would require a conditional use permit for a transmission line. Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-189 presents the number of miles crossed for each land jurisdiction (i.e. BLM, USFS, NPS, State, Tribal, and Private); miles of SITLA land and parallel linear facilities crossed (i.e., transmission lines, pipelines); and miles contained in WWEC and BLM utility corridors for Alternative COUT-I in Utah.

Alternative COUT-I in Utah crosses SITLA leases for gilsonite mining, oil and gas, oil shale, and range improvement.

Alternative COUT-I in Utah is located in a WWEC for 1.4 miles and BLM-designated utility corridors in the BLM Price, Richfield, and Vernal Field Offices for 16.0 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-I in Utah crosses pipelines and/or pipeline pump stations, transmission line, dryland farming, irrigated farming (including center-pivot irrigation), oil and gas extraction, mining extraction including gravel mining, grazing allotments, and vacant/undeveloped land uses.

Authorized Projects

Alternative COUT-I in Utah crosses the following authorized projects:

- BLM oil and/or gas leases in the Vernal Field Office
- Gasco Energy Inc. Uinta Natural Gas Development Project
- Kerr-McGee Oil and Gas Onshore LP Greater Natural Buttes Project
- XTO Energy Riverbend Directional Infill
- Interwest Mining Company Deer Creek Coal Mine (coal exploration)
- Anadarko Petroleum Corporation Ferron Natural Gas Project
- Canyon Fuel Company Soldier Canyon Mine
- State non-coal mine development
- State oil and/or gas and oil shale leases

Future Land Use

Alternative COUT-I in Utah crosses gas extraction (final plat) and a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-I in Utah crosses land zoned for agriculture and parks/preservation in Carbon County; agriculture in Duchesne County; agriculture and parks/preservation in Emery County; agriculture, parks/preservation, and recreation in Juab County; commercial, agriculture and parks/preservation in Sanpete County; and agriculture in Uintah County.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-I in Utah would have a total of 4.3 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland including center-pivot irrigation. There are no high residual impacts on existing land use.

Authorized Projects

Alternative COUT-I in Utah would have no high or moderate residual impacts on authorized projects.

Future Land Use

Alternative COUT-I in Utah would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-I in Utah crosses land zoned for agriculture and parks/preservation in Carbon County; agriculture in Duchesne County; agriculture and parks/preservation in Emery County; agriculture, parks/preservation, and recreation in Juab County; commercial, agriculture and parks/preservation in Sanpete County; and agriculture in Uintah County. Based on preliminary review of zoning and general plan management direction, the Project crosses 17.7 miles of zones that would allow a transmission line (permitted), 168.7 miles of zones that would require a conditional use permit, and 0.1 mile of zones that do not allow transmission lines (which would require approval and coordination with local agency). Once a decision has been made on the final route for the Project, the required permitting and/or approvals will be identified and coordination with the applicable local agency will occur.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same impacts on existing, authorized, planned, and future land use.

3.2.11.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Please note areas outside of the 2-mile-wide alternative route study corridors have not been fully inventoried.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Existing Land Use

Siting Area A contains the following existing land uses:

- Grazing allotments in the BLM Rawlins and Little Snake Field Offices and Colorado state agricultural leases (throughout the siting area)
- Oil and gas extraction (in the central portion of the siting area)
- Pipelines (running throughout the siting area)
- Agricultural farm complex (in the southwestern portion of the siting area)
- Communication facilities (throughout the siting area)
- Residential (in the southwestern portion of the siting area)

Authorized Projects

Siting Area A contains the following authorized projects:

- Colorado State oil/gas leases
- BLM Little Snake oil/gas units

Future Land Use

Siting Area A contains the TransWest Express Transmission Line Project that runs through the central portion of the siting area.

Zoning and General Plan Management Direction

Siting Area A contains lands designated for agricultural use in Sweetwater and Moffat counties.

Environmental Consequences

Existing Land Use

Impacts on grazing allotments would be the same as those described for temporary and permanent disturbance in Section 3.2.11.5.2. In addition to the impacts described in Section 3.2.11.5.2, if a series compensation station was sited in a grazing allotment, an area as large as 160 acres potentially could be excluded from use.

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project. If sited on or in the vicinity of this project, the series compensation station potentially would limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible with lands designated for agriculture. Impacts that could limit agricultural development and operations/production would be minimized if all current and future structures and agricultural operations were avoided.

Siting Area B – Nine Mile Basin

Affected Environment

Existing Land Use

Siting Area B contains the following existing land uses:

- Grazing allotments in the BLM Little Snake Field Office and Colorado state agricultural leases (throughout the siting area)
- Dryland and irrigated agriculture (in the central portion of the siting area)
- Agricultural farm complex (in the central portion of the siting area)
- Residential (in the central portion of the siting area)

Authorized Projects

Siting Area B contains the following authorized projects:

- Colorado State oil/gas leases

Future Land Use

Siting Area B contains the TransWest Express Transmission Line Project that runs through the central portion of the siting area.

Zoning and General Plan Management Direction

Siting Area B contains lands designated for agricultural use in Moffat County.

Environmental Consequences

Existing Land Use

Impacts on grazing allotments would be the same as those described for temporary and permanent disturbance in Section 3.2.11.5.2. In addition to the impacts described in Section 3.2.11.5.2, if a series compensation station was sited in a grazing allotment, an area as large as 160 acres potentially could be excluded from use.

It is anticipated the series compensation station would avoid the uses listed above and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project. If sited on or in the vicinity of this project, the series compensation station potentially would limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible with lands designated for agriculture. Impacts that could limit agricultural development and operations/production would be minimized if all current and future structures and agricultural operations were avoided.

Siting Area C – Maybell

Affected Environment

Existing Land Use

Siting Area C contains the following existing land uses:

- Grazing allotments in the BLM Little Snake Field Office and Colorado state agricultural leases (throughout the siting area)
- The Hayden to Artesia and Bears Ears to Bonanza transmission lines (run through the southeastern portion of the siting area)
- Pipelines (run through the central portion of the siting area)
- Agricultural outstructures (central portion of the siting area)
- Dryland and irrigated agriculture (throughout the siting area)
- Residential (southern and northern portion of the siting area)
- Industrial (northern portion of the siting area)

Authorized Projects

Siting Area C contains the following authorized projects:

- Colorado State oil/gas leases

Future Land Use

Siting Area C contains the TransWest Express Transmission Line Project that runs through the central portion of the siting area.

Zoning and General Plan Management Direction

Siting Area C contains lands designated for agricultural use in Moffat County.

Environmental Consequences

Existing Land Use

Impacts on grazing allotments would be the same as those described for temporary and permanent disturbance in Section 3.2.11.5.2. In addition to the impacts described in Section 3.2.11.5.2, if a series compensation station was sited in a grazing allotment, an area as large as 160 acres potentially could be excluded from use.

It is anticipated the series compensation station would avoid the uses listed above and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project. If sited on or in the vicinity of this project, the series compensation station potentially would limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible with lands designated for agriculture. Impacts that could limit agricultural development and operations/production would be minimized if all current and future structures and agricultural operations were avoided.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Existing Land Use

Siting Area D contains the following existing land uses:

- Grazing allotments in the BLM Little Snake Field Office and Colorado state agricultural leases (in the western portion)
- The Hayden to Artesia, Bears Ears to Bonanza, and Craig to Rifle transmission lines (run through the central portion of the siting area)
- Residential (in the eastern portion of the siting area)
- Commercial (in the southwestern portion of the siting area)
- Industrial (in the central portion of the siting area of the siting area)
- Agricultural outstructures (throughout the siting area)
- Irrigated and dryland agriculture (throughout the siting area of the siting area)

Authorized Projects

Siting Area D contains the following authorized projects:

- Colorado State oil/gas leases
- BLM Little Snake Field Office oil/gas units

Future Land Use

Siting Area D contains the TransWest Express Transmission Line Project that runs through the central portion of the siting area.

Zoning and General Plan Management Direction

Siting Area D contains lands designated for agricultural use in Moffat County.

Environmental Consequences

Existing Land Use

Impacts on grazing allotments would be the same as those described for temporary and permanent disturbance in Section 3.2.11.5.2. In addition to the impacts described in Section 3.2.11.5.2, if a series compensation station was sited in a grazing allotment, an area as large as 160 acres potentially could be excluded from use.

It is anticipated the series compensation station would avoid the uses listed above and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project. If sited on or in the vicinity of this project, the series compensation station potentially would limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible lands designated for agriculture. Impacts that could limit agricultural development and operations/production would be minimized if all current and future structures and agricultural operations were avoided.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E

Siting Area G – Green River

Affected Environment

Existing Land Use

Siting Area G contains the following existing land uses:

- Grazing allotments in the BLM Moab Field Office and Utah state agricultural leases (throughout the siting area)
- Huntington to Pinto, Mounds to Moab, and Green River to Sphinx transmission lines (run through the central portion of the siting area)
- Communication facilities (throughout the siting area)

Authorized Projects

Siting Area G contains the following authorized projects:

- Active SITLA oil/gas and metalliferous mineral leases
- Mancos Hills Industrial Park (Emery County)

Future Land Use

Siting Area G contains the TransWest Express Transmission Line Project that runs through the central portion of the siting area and SITLA industrial lease.

Zoning and General Plan Management Direction

Siting Area G contains lands designated for industrial use and rangeland in Emery County.

Environmental Consequences

Existing Land Use

Impacts on grazing allotments would be the same as those described for temporary and permanent disturbance in Section 3.2.11.5.2. In addition to the impacts described in Section 3.2.11.5.2, if a series compensation station was sited in a grazing allotment, an area as large as 160 acres potentially could be excluded from use.

It is anticipated the series compensation station would avoid the uses listed above and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project and a SITLA industrial lease. If sited on or in the vicinity of these projects, the series compensation station potentially would limit access to the project/lease and/or prevent development of the project or future development of the lease.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible with lands designated for industrial use. Impacts that could limit industrial development and operations/production would be minimized if all current and future structures and industrial operations were avoided.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Existing Land Use

Siting Area F contains the following existing land uses:

- The Mona to Bonanza transmission line (runs through the north central portion of the siting area)
- Authorized residential subdivisions in Duchesne County (in the western portion of the siting area)
- Residential (throughout the siting area)
- Commercial (throughout the siting area near populated areas)
- Industrial (throughout the siting area)
- Public/quasi-public (in the eastern portion of the siting area)
- School and educational facility (in the northeastern portion of the siting area)
- Dryland and irrigated agriculture (throughout the siting area)
- Utilities (in the eastern portion of the siting area)
- Communication facilities (throughout the siting area)

Authorized Projects

Siting Area F contains the following authorized projects:

- Active SITLA oil/gas leases
- Victory pipeline corridor
- Neal Potter subdivision
- State of Utah oil/gas pad(s)

Future Land Use

Siting Area F contains the TransWest Express Transmission Line Project that runs through the central portion of the siting area.

Zoning and General Plan Management Direction

Siting Area F – Roosevelt contains lands designated for the following uses:

- Commercial use in Duchesne and Uintah counties
- Agricultural use in Duchesne and Uintah counties
- Industrial use in Duchesne County and Ballard City
- Residential use in Ballard City
- Parks and preservation in Ballard City

Environmental Consequences

Existing Land Use

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project and Duchesne County Victory Pipeline Corridor. If sited on or in the vicinity of these projects, the series compensation station potentially would limit access to the projects and/or prevent development of the projects.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible with lands designated for agriculture. Impacts that could limit agricultural development and operations/production would be minimized if all current and future structures and agricultural operations were avoided.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Existing Land Use

Siting Area E contains the following existing land uses:

- Grazing allotments in the BLM Vernal Field Office and Utah state agricultural leases (throughout the siting area)
- The Mona to Bonanza, Bears Ears to Bonanza, Bonanza to Rangely, and Bonanza to Vernal transmission lines (run through the central portion of the siting area)
- Pipelines (run throughout the siting area)
- Residential (in the south central portion of the siting area)
- Industrial (throughout the siting area)
- Agriculture (in the central portion of the siting area)
- Communication facilities (throughout the siting area)
- Bonanza power plant and substation (in the northwestern portion of the siting area)

Authorized Projects

Siting Area E contains the following authorized projects:

- Chapita Wells/Stagecoach and North Chapita Wells oil/gas development project
- Active SITLA oil shale and oil/gas leases
- BLM Vernal Field Office oil/gas units
- Greater Natural Buttes Natural Gas development project
- State of Utah oil/gas pad(s)

Future Land Use

Siting Area E contains the TransWest Express Transmission Line Project that runs through the very western portion of the siting area.

Zoning and General Plan Management Direction

Siting Area E contains lands designated for rangeland in Uintah County.

Environmental Consequences

Existing Land Use

Impacts on grazing allotments would be the same as those described for temporary and permanent disturbance in Section 3.2.11.5.2. In addition to the impacts described in Section 3.2.11.5.2, if a series compensation station was sited in a grazing allotment, an area as large as 160 acres potentially could be excluded from use.

It is anticipated the series compensation station would avoid the uses listed above and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Authorized Projects

It is anticipated the series compensation station would avoid the uses listed above, and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses the series compensation station potentially would limit access to the area; limit or prevent continued use of the area; and/or permanently remove the use.

Future Land Use

It is anticipated the series compensation station would avoid the TransWest Express Transmission Line Project. If sited on or in the vicinity of this project, the series compensation station potentially would limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated the series compensation station would be compatible lands designated for rangeland. Impacts that could limit rangeland development and operations/production would be minimized if all current and future structures and rangeland operations were avoided.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.12 Parks, Preservation, and Recreation

3.2.12.1 Introduction and Regulatory Framework

Parks, preservation, and recreation resources include recreation sites, parks, preservation areas (e.g., rock art sites, Crystal Geyser, etc.), scenic byways, trails, Special Recreation Management Areas (SRMAs), Recreation Opportunity Spectrum (ROS) management areas, and dispersed recreation. Parks, preservation, and recreation resources were identified and evaluated for all jurisdictions occurring in the alternative route study corridors.

3.2.12.1.1 Regulatory Framework

Various regulatory systems are in place throughout the Project area that direct management to all levels of jurisdiction (federal, state, and local). BLM- and USFS-administered lands in the Project area are managed by direction provided in RMPs and LRMPs that establish the goals and objectives for the management of recreation resources. The approved management plans and their amendments relevant to the Project area are listed in Section 1.7.3. Goals and objectives of local parks and recreation areas also are directed by the local planning documents that govern each municipality or county (i.e., general plans, comprehensive plans, master plans, etc.). The planning documents relevant to the Project area are listed in Section 3.2.11. State planning documents that direct the development of parks, preservation, and recreation resources for each state are as follows:

- The Wyoming State Parks, Historic Sites, and Trails, Wyoming Statewide Comprehensive Outdoor Recreation Plan (2009 to 2013) (Wyoming Division of State Parks Historic Sites and Trails 2009) is used by local, state, and federal agencies as a guide for development and provision

of future outdoor recreation development. The purpose for the 5-year plan is to identify the outdoor recreation needs of citizens and visitors to Wyoming and to develop a program to address those needs.

- The Colorado Parks and Wildlife Statewide Comprehensive Outdoor Recreation Plan (2008) has been developed to identify, "…emerging outdoor recreation trends, needs, and issues in Colorado, as well as an opportunity to chart the course for the state's outdoor recreation future." (CPW 2014c) This plan is used by local, state, and federal agencies to assess statewide outdoor recreation issues and trends and helps to address these recreation needs. The plan has been developed using Land and Water Conservation Fund (LWCF) monies from the National Park Service and provides guidance to local and state agencies on designating LWCF sites (CPW 2008).
- The Utah Division of Natural Resources, State Parks Division Utah State Comprehensive Outdoor Recreation Plan (2009) gives an overview of recreation opportunities, public opinion and local municipality surveys, and funding sources for the state recreation areas. Similar to the Wyoming and Colorado State Comprehensive Outdoor Recreation Plans, the Utah State Comprehensive Outdoor Recreation Plan is developed using LWCF monies from the NPS and provides guidance to local and state agencies in designating LWCF sites (UDNR 2009).

3.2.12.2 Issues Identified for Analysis

Several issues were raised by the public and agencies (including BLM and USFS realty specialists, recreation planners, and cooperating agency staff, planners, and representatives) during the scoping period. The issues and information related to potential impacts on parks, preservation, and recreation resources are included below and were used to guide the focus and level of detail of the NEPA analysis. This section is organized to reflect the issues identified for parks, preservation, and recreation resources including recreational areas, OHV use areas, trails, scenic byways, and ROS management areas.

In addition to issues raised by the public and agencies during scoping, other issues were identified during the data inventory and assessment and are identified in Table 3-194. Where possible, some site-specific issues presented by the public and agencies were addressed by refinement of some alternative routes based on comment received prior to initiating this analysis.

TABLE 3-194
PARKS, PRESERVATION, AND RECREATION RESOURCE ISSUES

Issue Raised	Concern	Description of General Location	Relevant Alternative Routes
Conflicts with recreational cabins and properties	Presence of transmission towers on property, visual impacts, reduced property values, health concerns, private land rights, lower quality of life, disturbance caused by humming of line, and limiting use of property	Argyle Canyon (Utah), Manti-La Sal National Forest between Gooseberry Reservoir and Fairview Lakes, and dispersed areas throughout the alternative route study corridors	Some local routing options considered for Alternatives COUT-B and COUT-C cross a private recreational facility (refer to Appendix F for additional information about homes and cabins affected by the local routing options considered for Project alternative routes)

TABLE 3-194
PARKS, PRESERVATION, AND RECREATION RESOURCE ISSUES

Issue Raised	Concern	Description of General Location	Relevant Alternative Routes
Conflicts with recreation sites and access, specifically, snow kite recreation areas and a paragliding area (Otto's Ridge)	Anticipated loss of wildlife, hunting, and fishing opportunities, and recreation and tourism on state agencies and local communities, as well as diminishing wilderness qualities and reducing size of areas that are undisturbed	Snow kite recreation areas are located in Sanpete County, Utah Other dispersed recreation areas are located throughout alternative route study corridors	COUT BAX-E and COUT-H cross snow kite recreation areas; COUT BAX-B, COUT BAX-C, and COUT BAX-E are near a paragliding area. Other dispersed recreation areas also are located on the remaining Project alternative routes
Conflicts with off-highway vehicles, pedestrian, and other recreation trails	Presence of transmission towers on motorized and non-motorized trails; visual impacts and limiting use of trails	Throughout the alternative route study corridors	All alternative routes
Impacts on recreational values on the Ashley, Manti-La Sal, and Uinta National Forests based on the Recreation Opportunity Spectrum	Conflict of management prescriptions and guidelines of the Recreation Opportunity Spectrum areas	Throughout the alternative route study corridors	All alternative routes in Utah
Conflicts with scenic byways/backways/highways	Conflict of management prescriptions and guidelines of scenic byways/backways/ highways	Outlaw Trail Loop Scenic Drive, Dinosaur Diamond Prehistoric Byway, Energy Loop Scenic Byway, Indian Canyon Scenic Byway, Nebo Loop Scenic Byway, Nine Mile Canyon Backway, Reservation Ridge Scenic Backway, Skyline Drive Scenic Backway, Wedge Overlook/ Buckhorn Drive Scenic Backway, White River/Strawberry Road Scenic Backway	All alternative routes

3.2.12.3 Regional Setting

Diverse recreation uses occur in the Project area. Designated recreation areas are located throughout the Project area, predominantly adjacent to rivers and reservoirs, such as the Yampa and Green rivers and Strawberry Reservoir, and in and around major mountain ranges, such as the Wasatch and Uinta ranges. Unimproved, dispersed recreation opportunities occur throughout the Project area on BLM-, USFS-, and state-administered lands. Privately owned recreation sites (e.g., campgrounds) also are found throughout the Project area. Because of the rural character of the Project area, municipal and county parks are not commonly found in the alternative route study corridors.

3.2.12.4 Study Methodology

This section discusses the study methodology used for analyzing parks, preservation, and recreation resources. Parks, preservation, and recreation resources (such as trails, campgrounds, and OHV areas) in the study corridors were identified using the following methods.

- Documentation of recreation areas using aerial photography in the 2-mile-wide alternative route study corridors using 2009, 2011, and 2013 NAIP imagery
- Field reconnaissance in 2009, 2011, and 2013
- Review of BLM, NPS, and USFS management plans and information concerning land-use classifications
- Review of state–recreation-related documents (Wyoming State Parks, Historic Sites, and Trails; CPW; and Utah Division of Natural Resources, State Parks Division)
- Review of city and county land-use plans

Parks, preservation, and recreation resources are illustrated in MV-17a and MV-17b.

3.2.12.4.1 Inventory

This section identifies parks, preservation, or recreation resources inventoried in the study corridors including recreation sites, access, and parks; dispersed recreation; OHV use areas; trails; scenic byways and backways; SRMAs; and ROS management areas. These recreation resources can occur in developed recreation settings or in unimproved and dispersed recreation situations on BLM, USFS, state, county, and private lands.

All of the parks, preservation, and recreation resources that occur in the study corridors are identified; however, only the areas potentially crossed or paralleled by the Project are analyzed and discussed in the results section.

Recreation Use Estimates and Trends

BLM Land

Recreation activities are collectively one of the larger uses of BLM-administered land. Table 3-195 summarizes estimated visitor use on BLM-administered land by state from 2000 to 2010.

TABLE 3-195
ESTIMATED RECREATION USE ON PUBLIC LANDS BY STATE FROM 2000 TO 2010
(IN THOUSANDS)

Year and Percent of Change	Developed Recreation Sites		Dispersed Recreation Areas		Recreation Lease Sites		Recreation Partnership Sites		Total	
	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days
Wyoming										
2000	1,676	423	1,979	1,862	Not applicable	Not applicable	Not applicable	Not applicable	3,655	2,285
2010	1,148	729	1,261	765	0	0	43	16	2,452	1,510
Percent change	-32	72	-36	59	–	–	–	–	-33	-34
Colorado										
2000	2,356	1,122	2,400	2,084	Not applicable	Not applicable	Not applicable	Not applicable	4,576	3,206
2010	2,497	1,402	3,265	4,610	0	0	686	127	6,488	6,139
Percent change	6	25	36	121	–	–	–	–	41	92

TABLE 3-195
ESTIMATED RECREATION USE ON PUBLIC LANDS BY STATE FROM 2000 TO 2010
(IN THOUSANDS)

Year and Percent of Change	Developed Recreation Sites		Dispersed Recreation Areas		Recreation Lease Sites		Recreation Partnership Sites		Total	
	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days	Visits	Visitor Days
Utah										
2000	3,602	3,062	2,567	4,750	Not applicable	Not applicable	Not applicable	Not applicable	6,169	7,812
2010	2,888	1,987	2,998	3,190	21	8	183	178	6,090	5,363
Percent change	-20	-35	17	-33	–	–	–	–	-1	-31

SOURCES: Bureau of Land Management 2001a, 2011h
NOTE: A visit is the entry of any person for recreational purposes regardless of duration onto lands and related waters administered by the Bureau of Land Management and one visitor-day represents an aggregate of 12 visitor hours at a site or area.

From 2000 to 2010, visits to recreation areas and the number of days visitors were recreating on BLM-administered land dropped in Wyoming and Utah and increased in Colorado. The differences between the number of visits and visitor days could have been the result of several factors, including economic and socioeconomic variables (e.g., age, income, etc.), climate, the number of areas opened or restricted for recreation use, or data collection methods, etc.

Forest Lands

USFS visitor use data from 2002 to 2011 for the Ashley, Manti-La Sal, and Uinta National Forests are displayed in Table 3-196.

TABLE 3-196
ESTIMATED VISITOR USE ON U.S. FOREST LANDS BY FOREST FROM 2002 TO 2011

National Forest	Visitors							Percent of Change
	2002	2006	2007	2008	2009	2010	2011	
Ashley	1,400,000	Not applicable	960,000	Not applicable	Not applicable	Not applicable	Not applicable	-28.0
Manti-La Sal	804,000	672,000	N/A	Not applicable	Not applicable	Not applicable	352,000	-59.0
Uinta[1]	2,840,000	N/A	2,934,000	Not applicable	Not applicable	Not applicable	Not applicable	3.0

SOURCES: Kocis et al. 2002; U.S. Forest Service 2006, 2007a and b, 2011f.
NOTE: [1]Reported visitor use is for just the Uinta National Forest portion of the Uinta-Wasatch-Cache National Forest.

Based on the data, the number of visitors recreating appears to be decreasing on the Ashley and Manti-La Sal National Forests and increasing on the Uinta National Forest. Similar to the BLM-administered land, this could be the result of several factors, including economic and socioeconomic variables (e.g., age, income, etc.), climate, the number of areas opened or restricted for recreation use, or data collection methods, etc.

National Park Service Lands

NPS visitor use data from 2013 to 2014, for visitors using Deerlodge Road (part of Dinosaur National Monument) and the recreation sites accessed by Deerlodge Road are recorded below in Table 3-197, with the percentage of change between the two years.

TABLE 3-197
ESTIMATED VISITOR USE ON NATIONAL PARK SERVICE'S DEERLODGE ROAD (PART OF DINOSAUR NATIONAL MONUMENT) BY RECREATION USE

Year and Percent of Change	Total Recreation Visitors to the National Monument (year-to-date)	Total Traffic Count (year-to-date)	Total Boaters (year-to-date)	Total Overnight Stays (year-to-date)[1]
2014[2]	8,614	4,790	11,041	952
2013	13,231	9,410	9,592	608
Percent Change	-34.9	-49.1	15.1	56.6

SOURCES: National Park Service 2014
NOTES:
YTD = Year to Date
[1] This includes both the Deerlodge Park Tent and RV sites.
[2] This is as of August 2014.

Based on the data, the number of recreation visitors appears to have decreased in the last 2 years, but the use of Deerlodge Road has increased, as well as total boaters and overnight stays. Similar to BLM- and USFS-administered lands, this could be the result of several factors, including economic and socioeconomic variables (e.g., age, income, etc.), climate, the number of areas opened or restricted for recreation use, or data collection methods, etc. Refer to Appendix G for further information regarding the recreational use of Deerlodge Road.

Recreation Sites, Access, and Parks

Recreation sites, access, and parks include areas such as, campgrounds, shooting ranges, and golf courses that have been designated as such for public and private use. These sites can be managed by federal, state, or local agencies. Table 3-198 provides details on recreation areas in the alternative route study corridors.

TABLE 3-198
RECREATION SITES, ACCESS, AND PARKS IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Name	Location	Relevant Alternative Routes
Wyoming		
Fort Steele Rest Area	North-side of Interstate-80 (I-80), on the west-side of the North Platte River 13 miles east of the City of Rawlins	All WYCO
Hanna Recreation Center	Town of Hanna municipal boundary	WYCO-D
Municipal park in Hanna (no name provided)	Western portion of the Hanna municipal boundary	WYCO-D
Little Robber Reservoir and undeveloped recreation site	West side of Wyoming Highway 789, north of the Town of Baggs	WYCO-F
North Platte River Fort Steele/Rochelle Public Access Area	South of I-80 and Fort Steele, multiple parking areas along the river to the south	All WYCO
Overland Trail Ruts interpretative site	West side of Wyoming Highway 789 about 22 miles south of I-80	WYCO-D
Ripple Ridge Raceway	Off of Wyoming Highway 71, approximately 2 miles southwest of Rawlins	All WYCO

TABLE 3-198
RECREATION SITES, ACCESS, AND PARKS IN THE
2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Name	Location	Relevant Alternative Routes
Colorado		
Buck N'Bull RV Park	Off of Colorado State Highway 64, approximately 3.2 miles east of the Community of Rangely, just east of the intersection of Gillam Road and Colorado State Highway 64	All COUT BAX
Carrot Men Rock Art Site (managed by the Bureau of Land Management)	Along Cottonwood Road, approximately 0.25 mile southwest of Rio Blanco County Road 23 and approximately 11 miles southwest of Rangely	All COUT BAX
Cedar Ridge Golf Course (privately managed)	Approximately 1.5 miles East of Rangely, just south of Colorado State Highway 64	All COUT BAX
Craig Energy Wayside Exhibit Point of Interest	Along Colorado State Highway 13, approximately 4 miles southwest of Craig	WYCO-D
Crook's Brand Rock Art Site	Off of Rio Blanco County Road 23, approximately 9 miles southwest of Rangely	All COUT BAX
Dragon Road Kiosk	Along Rio Blanco County Road 23, approximately 3.8 miles south-southwest of Rangely	All COUT BAX
Elks Park	Southwest corner of Rangely town limits	COUT-A, COUT-B, COUT-C (including Colorado/Utah Border Agency Preferred Alternative segment)
Fortification Rocks Viewpoint	Along Colorado State Highway 13, approximately 20 miles south of Baggs, Wyoming	WYCO-D
Juniper Canyon Boat Ramp	Part of Yampa River State Park, located along Moffat County Road 74, approximately 8 miles southeast of the community of Maybell	WYCO-D
Juniper Canyon Recreation Site	Part of Yampa River State Park, located along Cottonwood Road approximately 0.25 mile southwest of Rio Blanco County Road 23. Approximately 11 miles southwest of Rangely	WYCO-D
Kenney Reservoir and Recreation Area	West side of Colorado State Highway 64, approximately 5 miles northeast of Rangely, just south of the Rio Blanco Water Conservancy District Campground	All COUT BAX
Loudy Simpson Park	Southwest of the City of Craig, Colorado, on the south side of the Yampa River	WYCO-D
Massadonna Campground (Private)	Southwest of U.S. Highway 40 in the community of Massadona	All COUT
Otto's Ridge Paragliding Site	On Bureau of Land Management land, approximately 1 mile east of 2nd Road and 8 miles northwest of the community of Mack	All COUT BAX
Rangely Fairgrounds	Approximately 1.5 miles east of Rangely, just south of Colorado State Highway 64	All COUT BAX

TABLE 3-198
RECREATION SITES, ACCESS, AND PARKS IN THE
2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Name	Location	Relevant Alternative Routes
Rangely Rock Crawling Park	Approximately 1.5 miles southwest of Rangely, west of Rio Blanco County Road 23 (Big Park Road), and southeast of Rio Blanco County Road 2	All COUT BAX
RBWCD Campground	On the Kenney Reservoir, west of Colorado State Highway 64, approximately 6 miles northwest of Rangely	All COUT BAX
South Beach Public River Access (also known as Yampa Project Pump Station)	Part of Yampa River State Park along Colorado State Highway 13 at Yampa River crossing, approximately 3.5 miles southwest of Craig	WYCO-D
South Beach Picnic Area – Yampa Project Pump Station	Part of Yampa River State Park along State Colorado State Highway 13 at Yampa River crossing, approximately 3.5 miles southwest of Craig	WYCO-D
South Beach Trail Area	Part of Yampa River State Park along State Colorado State Highway 13 at Yampa River crossing, approximately 3.5 miles southwest of Craig	WYCO-D
South Cross Mountain Trailhead	North of the Yampa Valley Trail, approximately 9 miles southwest of Maybell	WYCO-B, WYCO-C, WYCO-F
Taylor Draw River Access	West of Colorado State Highway 64 and east of the White River, approximately 5 miles east of Rangely	All COUT BAX
U.S. Highway 40 Point of Interest	Along U.S. Highway 40, approximately 7 miles east of Craig	WYCO-D
West Juniper Mountain Trailhead	West of the Yampa River, approximately 3 miles southeast of Maybell	WYCO-D
White River Bowmen Archery Range	Approximately 1 mile south of Rangely	All COUT BAX
Yampa River State Park	Approximately 3 miles southwest of Craig	WYCO-D
Yampa Valley Sportriders (Motorcycles)	Along Moffat County Road 107, approximately 1 mile north of Craig Station coal power plant, and approximately 3 miles southwest of Craig	WYCO-D
Utah		
Aspen Grove Campground and Boat Ramp	Along Forest Road 090, approximately 5 miles south of U.S. Highway 40 and Forest Road 090 intersections on the south side of Strawberry Reservoir	COUT-A
Bamberger Roadside Monument	Northwest corner of the intersection of Emma Park Road and U.S. Highway 191, approximately 13 miles east-southeast of the community of Colton and 10 miles northeast of City of Helper	COUT-H
Beaver Dam Reservoir Recreation Site	Along Skyline Drive/Utah State Route 264, approximately 8 miles northeast of Fairview City	COUT BAX-E, COUT-H

TABLE 3-198
RECREATION SITES, ACCESS, AND PARKS IN THE
2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Name	Location	Relevant Alternative Routes
Big Mountain Campground	Along the south side of Utah State Route 132, in Salt Creek Canyon, approximately 6 miles east of City of Nephi	All COUT BAX and COUT
Lake Boreham	1.2 miles north of U.S. Highway 40 and 4.7 miles west of the community of Myton	COUT-B
Bottle Hollow Reservoir Recreation Site	Along Hilltop Road on the south side of Bottle Hollow Reservoir, approximately 1.5 miles southwest of the community of Fort Duchesne	COUT-A, COUT-B
Burnout Canyon/Upper Electric Lake Scenic Byway Sign	Along Utah State Route 264, 2 miles north of Electric Lake and 11 miles northeast of Fairview	COUT BAX-E, COUT-H
Buckhorn Draw Interpretative Site	Located approximately 15 miles southeast of the Huntington, in the San Rafael Swell	COUT BAX-B, COUT BAX-C
Camp Timberlane	Along Argyle Ridge, south of Argyle Canyon, approximately 2 miles east of U.S. Highway 191	Link U511
Camperworld	Along south side of Utah State Route 132, approximately 5 miles east of Nephi	All COUT BAX and COUT
Canyon Hills Park Golf Course (Juab Golf Course 104 Land and Water Conservation Fund site)	Northeast corner of Utah State Route 132 and Interstate 15, approximately 0.5 mile East of Nephi	All COUT BAX and COUT
Cedar Haven Truck and RV Park	Along U.S. Highway 6, approximately 9 miles west of Gilluly, Utah and 9 miles east of Thistle	All COUT except COUT-H and COUT-I
Colton LDS Recreation Camp	Approximately 1.5 miles west of Reservation Ridge Scenic Byway and 2.4 miles north of the community of Colton	COUT-C
Cottonwood Wash Trailhead	Southwest side of the Old Spanish National Historic Trail, approximately 14 miles southwest of Woodside (a ghost town)	COUT BAX-B
Crystal Geyser	At the end of Little Valley Road, approximately 4 miles south-southeast of the City of Green River	All COUT BAX
Electric Lake	Between Utah State Highways 264 and 31 and 4.5 miles west of the community of Clear Creek	COUT BAX-E, COUT-H
Enron Campground	Along the White River approximately 2 miles south-southeast of the intersection of Glen Bench Road and the White River and approximately 12 miles east-southeast of the Community of Ouray	COUT-C, COUT-H, COUT-I
Ephraim LDS Recreation Camp	0.7 mile west of Utah State Highway 264 and approximately 6 miles west of the community of Clear Creek	COUT BAX-E, COUT-H
Fairview LDS Recreation Camp	Eastern portion: 0.7 mile west of Utah State Highway 264, due north of the Ephraim LDS Recreation Camp; Western portions: 4 miles west of U.S. Highway 89 and 4.5 miles southwest of the community of Indianola	COUT BAX-E, All COUT except COUT-I

TABLE 3-198
RECREATION SITES, ACCESS, AND PARKS IN THE
2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Name	Location	Relevant Alternative Routes
Fourmile Bottom River put-in	On the Green River, approximately 22 miles south of the community of Randlett	COUT-C, COUT-H, COUT-I
Fort Duchesne Rifle Range	Along 7500 E Road, 1 mile south of Fort Duchesne	COUT-A, COUT-B
Gooseberry Group Campground	Approximately 1 mile northeast of the intersection of Utah State Route 264 and Utah State Route 31 and 8.5 miles east-northeast of Fairview	COUT BAX-E, COUT-H
Green River Overlook	West side of the Green River at the terminus of Little Valley Road and east from Airport Road, approximately 3.1 miles south of Green River	All COUT BAX
Helper City Park	East side of U.S. Highway 191; picnic shelter and playground on south side of the City of Helper	COUT-H
Indian Creek Campground	Along Indian Creek Road, approximately 1.2 miles north of the intersection of Miller Flat Road and Indian Creek Road and 17 miles northwest of Huntington	COUT BAX-B, COUT BAX-C, COUT-I
Narrows East Trailhead	On Forest Road 90, south of Soldier Creek Reservoir and 6 miles east of White River/Strawberry Road Scenic Backway	COUT-A
Nephi Shooting Range	1.6 miles northeast of Nephi	All COUT BAX and COUT
Off-highway vehicle/motorized use track (private track)	8 miles east of Thistle	All COUT except COUT-H and COUT-I
Olsen Reservoir	5 miles southeast of Wellington and 3 miles west of the Price River	COUT-I
Paradise Creek Trailhead	0.2 mile northeast of Potters Canyon Road and 1.2 miles northwest of Potters Pond Campground	COUT BAX-B, COUT BAX-C and COUT-I
Potter Pond and Campground	Along Potters Canyon Road, approximately 1 mile west of the intersection of Potters Canyon Road and Miller Flat Road and 18.5 miles northwest of Huntington	COUT BAX-B, COUT BAX-C, COUT-I
Saleratus Large Group Camping site	Just northeast of the intersection of Carbon County Road 401 (Green River Cutoff Road) and Cottonwood Wash Road, approximately 9 miles southwest of Woodside and 22 miles northwest of Green River	COUT BAX-C
Sam's Hollow Camping Site	Along Carbon County Road 401 (Green River Cutoff Rd.), approximately 2 miles east of the intersection of County Road 404 and County Road 332 (Buckhorn Draw Road) and 15.5 miles southeast of City of Castle Dale	COUT BAX-B, COUT BAX-C
Sheep Creek Camping Area	0.5 mile north of U.S. Highway 6 along Forest Road 051, approximately 9 miles west of Gilluly and 9 miles east of Thistle	COUT-A COUT-H, and COUT-I
Skyline Drive Staging Area	Intersection of Forest Road 150 (Skyline Road) and U.S. Highway 6 just west of Gilluly	COUT-B, COUT-C

TABLE 3-198
RECREATION SITES, ACCESS, AND PARKS IN THE
2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Name	Location	Relevant Alternative Routes
Snow Kite Recreation Areas	15-square mile area at the intersection of Forest Road 150 (Skyline Road) and Utah State Route 31, approximately 8 miles northeast of Mount Pleasant	COUT BAX-E, COUT-H
Soldier Creek Overlook	Along Forest Road 090, approximately 4 miles south of the intersection of U.S. Highway 40 and Forest Road 090, and on the east side of Strawberry Reservoir just north of the dam	COUT-A
Soldier Creek Dam Day Use Area	Along Forest Road 090, approximately 4.5 miles south of the intersection of U.S. Highway 40 and Forest Road 090, and on the southeast side of Strawberry Reservoir on west side of dam	COUT-A
Soldier Creek Reservoir	Just south of U.S. Highway 40 and 14 miles west of Fruitland	COUT-A
Starvation State Park	Approximately 3 miles northwest of the City of Duchesne	COUT-A
Strawberry River Recreation Site	Approximately 11 miles southwest of Fruitland	COUT-A
Teat Mountain Trailhead	Just north of U.S. Highway 6 and 7 miles east of Thistle	COUT-A, B, and C
The Energy Loop: Huntington/ Eccles Canyons Scenic Byway Kiosks	Kiosks on Utah State Route 96 and on the Manti-La Sal National Forest	COUT-B, COUT-H
Upper Huntington Creek Riparian Sign	Along Utah State Route 264 at northern tip of Electric Lake, approximately 11 miles east of Fairview	COUT BAX-E, COUT-H
White River Raft Access	On the White River, approximately 14 miles west of Bonanza	COUT-C, COUT-H, COUT-I

Dispersed Recreation

BLM defines dispersed recreation as "recreation activities of an unstructured type, which are not confined to specific locations such as recreation sites. Example[s] of these activities may be hunting, fishing, off-road vehicle use, hiking, and sightseeing" (BLM 2008d). The USFS has a similar definition, defining dispersed recreation as, "a general term referring to recreation use outside a developed recreation site; this includes activities such as scenic driving, hunting, backpacking, and recreation in primitive environments" (USFS 1986b). Dispersed recreation occurs in the study corridors, mainly in areas with trails that enable user access to specific areas and allow for recreation activities such as camping, backpacking, or OHV use. Areas where big game and migratory birds tend to gather may allow for hunting activities as well as wildlife viewing opportunities in a natural setting. Big game hunting is one of the larger dispersed recreation activities that occur in the study corridors with opportunities for hunting elk, mule deer, and pronghorn being some of the most popular. OHV use is also a popular dispersed recreation activity in the study corridors. These activities mainly occur in areas with motorized trails that also allow for OHV users to set up dispersed camp sites. OHV use also is discussed below in the Trails portion of Section 3.2.12.4.1.

Dispersed recreation activities that could occur on BLM- and USFS-administered lands in the study corridors are displayed in Table 3-199. A qualitative discussion of effects on these recreation activities that could occur with the construction and operation of the Project is discussed under Section 3.2.12.5.2.

TABLE 3-199
DISPERSED RECREATION ACTIVITIES IN THE STUDY CORRIDORS

Field Office or National Forest	Approximate Acres in Study Corridors	Dispersed Recreation Activities													
		Backpacking	Biking	Boating	Camping	Driving	Fishing	Geocaching	Hiking	Horse-Back Riding	Hunting	Off-Highway Vehicle Use	Photography	Wildlife Viewing	Other
Wyoming															
Bureau of Land Management (BLM) Rawlins Field Office	409,000	✓	✓		✓		✓		✓		✓	✓	✓	✓	✓
Colorado															
BLM Grand Junction Field Office	32,000								✓	✓	✓	✓		✓	
BLM Little Snake Field Office	75,000		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
BLM White River Field Office	125,000			✓		✓	✓	✓	✓		✓	✓			✓
Utah															
BLM Fillmore Field Office	2,300	✓	✓		✓	✓			✓		✓	✓	✓	✓	✓
BLM Moab Field Office	71,000		✓	✓		✓	✓		✓	✓	✓	✓		✓	✓
BLM Price Field Office	214,000		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
BLM Richfield Field Office	11,000			✓	✓	✓			✓	✓		✓			✓
BLM Salt Lake Field Office	5,000	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	✓
BLM Vernal Field Office	278,000		✓	✓	✓	✓	✓		✓		✓	✓			✓
Ashley National Forest	16,000		✓		✓		✓		✓		✓	✓		✓	✓
Manti-La Sal National Forest	38,000		✓		✓	✓	✓		✓	✓	✓	✓			✓
Uinta National Forest	54,000		✓		✓	✓	✓		✓	✓		✓		✓	

Off-highway Vehicle Use

OHVs, as defined by BLM Regulation Part 8340 Off-Road Vehicles, "are any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while

being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies" (BLM 2005a). Types of OHVs include 4-wheel drive jeeps, automobiles, pickups or sport utility vehicles; motorcycles designed for cross-country use; ATVs; and other specially designed or modified off-road motor vehicles used in a wide variety of ways (Cordell et al. 2008). In addition to being a recreation activity, OHV use can occur on public lands for business and commuting purposes such as managing animals on grazing leases, accessing oil and/or gas development areas, or as transportation to reach recreational areas for hunting, fishing, and/or camping.

The BLM's OHV designations are determined through travel management planning and are incorporated into their RMPs. BLM's OHV designations are defined as follows (43 CFR 8342.1):

- **Open**. An area where all types of vehicle use is permitted at all times.
- **Limited**. An area restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, but can generally be accommodated in the following categories: numbers of vehicles; types of vehicles; time or season of vehicle use; permitted or licensed use only; use on existing roads and trails; use on designated roads and trails; and other restrictions.
- **Closed**. An area where off-road vehicle use is prohibited. Use of off-road vehicles in closed areas may be allowed for certain reasons but must be approved by the authorized officer.

Each national forest designates areas as open, limited, or closed for OHV uses and typically limits these uses to designated roads and trails. In 2005 the USFS published its final travel management rule that required designation of roads, trails, and areas for OHV use on national forests with these designations made by class of vehicle and time of year. This final travel management rule prohibits all motor vehicles from going off of designated roads and trails, and in areas generally not designated for motorized use (Cordell et al. 2008). To illustrate where these OHV use areas are, each forest has developed motor vehicle use maps, which are available at each national forest's website.

OHV use also occurs on state lands. Regulations for state OHV use vary by state and/or local agency.

Special Recreation Use Permit

A special recreation use permit issued by the BLM is "… authorization which allows for recreation uses of the public lands and related waters. The permits are issued as a means to control visitor use, protect recreational and natural resources, and provide for the health and safety of visitors" (BLM 2006a) and are typically time restricted. There are six different types of permits:

- **Commercial Use**. A recreational use of public lands and related waters for financial gain
- **Competitive Use**. An organized, sanctioned, or structured use, event, or activity on public land where two or more contestants compete and either of the following elements apply:
  - participants register, enter, or complete an application for the event; or
  - a predetermined course or area is designated
- **Vending**. These are temporary, short-term, non-exclusive, revocable authorizations to sell goods or services on public lands in conjunction with a recreation activity;
- **Special-area Use**. Permits required for individual recreation use in special areas such as floating certain BLM-managed rivers and hiking in certain wilderness areas

- **Organized Group Activity and Event Use**. Group outdoor recreation activities or events that are neither commercial nor competitive
- **Relationship with Other Permits**. This would include a commercial filming permit issued in conjunction with a special recreation permit or a special recreation permit issued in conjunction with other programs such as an activity that has a commercial recreation component. In these cases, a special recreation use permit and the additional program permit would be required (BLM 2006a).

For example, the Labyrinth Canyon SRMA in the BLM Price Field Office is crossed by an alternative route considered for the Project and requires a special recreation permit for all recreational users in the SRMA. There is no consistent dataset available for current special recreation use permits for the alternative route study corridors or a feasible method to anticipate the future permit demands; therefore, the potential effects on the special recreation use permit program or permitted uses are not considered in the analysis.

Trails

The BLM, USFS, and counties also have trails that have been designated as historic or recreational (i.e., motorized and non-motorized) in the alternative route study corridors. Historic trails in Wyoming are designated to protect historic values and to reduce natural and human caused damage or conflicts. These trails, located in the BLM Rawlins Field Office, are considered avoidance areas for siting of future utilities.

Recreational use of motorized trails allows for ATVs and four-wheel drive vehicles. There are areas designated in the BLM field offices and USFS for OHV users including trails open for cross-country recreational OHV use. As discussed above under Dispersed Recreation, OHV use occurs throughout the Project area. Motorized trails in the alternative route study corridor are listed below in Table 3-200 and are discussed in Section 3.2.12.5.

Non-motorized trails also occur throughout the Project area and allow for users such as horse-back riding, hiking, and mountain biking. Non-motorized trails tend to be in areas that allow the user to be in a natural setting with few human modifications. Non-motorized trails in the alternative route study corridors are listed in Table 3-200 and are discussed in Section 3.2.12.5. The scenic, cultural, and recreational trails in the alternative route study corridors are described in Table 3-200 and are discussed in Section 3.2.18 and 3.2.19.

National historic and scenic trails are discussed in Section 3.2.19.

TABLE 3-200
TRAILS IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Trail Name	Management and Use	Relevant Alternative Routes
Wyoming		
Rawlins to Baggs Road Historic Trail	BLM Rawlins Approved RMP Approximately 113 miles long, managed for the preservation of historic values An avoidance area for linear utilities within 0.25 mile of the trail or the visual horizon, whichever is closer	All WYCO

TABLE 3-200
TRAILS IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Trail Name	Management and Use	Relevant Alternative Routes
Colorado		
Motorized Trails	Garfield County Used for 4-wheel drive vehicles and pack trips	All COUT BAX
Motorized Trails	BLM Grand Junction Field Office Users that include all-terrain vehicles (ATV) and 4-wheel drive vehicles	All COUT BAX
Antelope Knoll Well, Godiva Rim, Horse Draw, Juniper Mountain, Mud Springs Loop, North Lone Tree Well, Peck Mesa Connector A, Peck Mesa Northwest, Peck Mesa Southeast, Pinyon Ridge Road, Pole Gulch, Ruedloff Powder Wash, West Sims Berry, Yampa Valley	BLM Little Snake Field Office Motorized trails designated for 4-wheel drive vehicles	All WYCO
Motorized Trails	Mesa County Designated for 4-wheel drive use	All COUT BAX
Motorized Trails	BLM Little Snake and Grand Junction Field Offices and Garfield and Mesa counties	All COUT BAX and WYCO
Utah		
Trails 10128, 10154, 10172, 10489, 10491, 10496, 10657, 10658, and South Death Trap Canyon, (also trails with no names)	Ashley National Forest Motorized trails used by ATVs and motorcycles	All COUT except COUT-A
Mill Hollow, Quitchampau	Ashley National Forest Non-motorized trails for hiking, pack and saddle, bicycle or as labeled use	COUT-B
Western Loop	Carbon County Motorized trails used by ATVs and motorcycles	COUT BAX-E, COUT-H
Cottonwood Ridge, Scad Valley Divide	Manti-La Sal National Forest Motorized trails for ATVs	All COUT-BAX, COUT-H, COUT-I
Blind Canyon, Booths Canyon, James Canyon, Maple Canyon Fork, Oak Creek, Seeley Canyon Spur, Sky High	Manti-La Sal National Forest Non-motorized trails for hiking or pack and saddle	All COUT BAX and COUT
Crystal Geyser, Guy's, Thompson Single Track	BLM Moab Field Office Motorized trails designated just for motorcycles; ATVs prohibited	All COUT BAX
Motorized Trails	BLM Price Field Office Designated for ATVs, motorcycles, and any other vehicle	All COUT BAX, COUT-H, COUT-I

TABLE 3-200
TRAILS IN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Trail Name	Management and Use	Relevant Alternative Routes
Great Western Trail, Indian Creek/Trail Hollow Loop, Left Fork White River, Nebo Loop, Sheep Creek to Indian Springs, Tie Fork	Uinta National Forest Motorized trails for motorcycles and snowmobiles	All COUT BAX and COUT
Buffalo Canyon, French Hollow, Indian Creek to Willow Creek Ridge, Indian Creek Sheep Camp #1, Strawberry Narrows, Teat Mountain, Willow Creek South	Uinta National Forest Non-motorized trails for hiking or pack and saddle	All COUT except COUT-H and COUT-I
Far Side	BLM Vernal Field Office Non-motorized track	COUT-A, COUT-B

Scenic Byways and Backways

Scenic byways and backways are designated at a national, state, or local level. The National Scenic Byways Program (23 U.S.C. 162) is managed by the Federal Highway Administration (FHWA) under U.S. Department of Transportation, which recognizes roads that have outstanding scenic, historic, cultural, natural, recreational, and/or archaeological qualities. The National Scenic Byways Program provides funding to states and Indian tribes for the implementation of projects to protect the features the byways are designated for, as well as to provide interpretative sites for users and maintain facilities along the byways (FHWA 2011). Other scenic byways are identified by states and counties that are managed at a state or local level.

Table 3-201 describes in detail the designated byways and backways located in the alternative route study corridors.

TABLE 3-201
SCENIC BYWAYS AND BACKWAYS ALTERNATIVE ROUTE STUDY CORRIDORS

Scenic Byway/Backway Name and State Location	Management Agency (or Program) and Description of Scenic Byway or Backway	Relevant Alternative Routes
Dinosaur Diamond Prehistoric Byway (Colorado and Utah)	Part of the National Scenic Byways Program Located in eastern Utah and western Colorado with the Town of Naples, City of Price, and Town of Green River along the route in Utah and the community of Dinosaur, the Town of Rangely, and community of Mack in Colorado An approximately 512-mile loop providing users opportunities to see dinosaur bones being excavated and prepared for museum display; museums and numerous recreation opportunities located along the byway (Colorado Tourism Office 2010)	All COUT BAX and COUT

TABLE 3-201
SCENIC BYWAYS AND BACKWAYS ALTERNATIVE ROUTE STUDY CORRIDORS

Scenic Byway/Backway Name and State Location	Management Agency (or Program) and Description of Scenic Byway or Backway	Relevant Alternative Routes
The Energy Loop: Huntington/Eccles Canyons Scenic Byway (Utah)	Part of the National Scenic Byways Program Crosses through the Manti-La Sal National Forest and passes the Towns of Scofield and Huntington and the City of Fairview Offers opportunities to view coal mining operations, historic mining towns, and coal-fired power plants (FHWA n.d.[a])	COUT BAX-E, COUT-B, COUT-H, COUT-I
Indian Canyon Scenic Byway (Utah)	Part of the National Scenic Byways Program Approximately 47-mile-long byway connects U.S. Highway 40 and U.S. Highway 6, from the City of Duchesne to just north of the City of Helper Passes by unique rock formations and vegetation and offers several different recreation opportunities (FHWA n.d.[b])	COUT-B, COUT-C, COUT-H
Nebo Loop Scenic Byway (Utah)	Part of the National Scenic Byways Program Running north and south from Utah State Route 198 and Interstate 15, west of the Town of Salem to Utah State Route 132 and to the south, east of Nephi City and Interstate 15 Approximately 37 miles in length and designated for scenic qualities (FHWA n.d.[c])	All COUT BAX and COUT
Nine Mile Canyon Backway (Utah)	Part of the National Scenic Byways Program Starting at U.S. Highway 6/191 near the Town of Wellington and proceeding northeast; eventually splitting into two routes with one portion stopping a short distance to the east after the split and the other portion proceeding north; connecting to U.S. Highway 40/191 southwest of the Town of Myton. Approximately 78 miles in length and designated by the State of Utah for cultural features related to the prehistoric Fremont culture. (FHWA n.d.[d])	COUT-C, COUT-H, COUT-I
Outlaw Trail Loop Scenic Drive (Wyoming)	Designated by Carbon County Follows Wyoming Highway 789 starting at Interstate 80 at Creston Junction to the Town of Baggs. Provides scenic and historical opportunities to users	All WYCO
Reservation Ridge Scenic Backway (Utah)	Designated by the State of Utah for its scenic qualities with portions managed by the Ashley National Forest and Uinta National Forest Located between U.S. Highway 191 at the Avantaquin Campground turnoff west along the ridgeline to U.S. Highway 6, just east of Soldier Summit. Offers recreation opportunities (State of Utah 2014)	COUT-B, COUT-C

TABLE 3-201
SCENIC BYWAYS AND BACKWAYS ALTERNATIVE ROUTE STUDY CORRIDORS

Scenic Byway/Backway Name and State Location	Management Agency (or Program) and Description of Scenic Byway or Backway	Relevant Alternative Routes
Skyline Drive Scenic Backway (Utah)	Designated by the State of Utah with portions managed by the Manti-La Sal National Forest Approximately 80 miles long and follows the spine of the Wasatch Plateau beginning near the ghost town of Tucker and ending at Interstate 70. Designated for its scenic qualities (Sanpete County 2012a)	COUT BAX-C, COUT BAX-E, All COUT except COUT-A
Wedge Overlook/ Buckhorn Drive Scenic Backway (Utah)	Designated and managed by the State of Utah Located in the northern portion of the San Rafael Swell, connecting Utah State Route 10 to Interstate 70, west of the City of Green River Provides opportunities to view the Bureau of Land Management's Wedge Overlook and scenery of the Little Grand Canyon of the San Rafael River, a camping area near the river, and the Buckhorn Wash pictograph that is more than 2,000 years old (Utah Travel Industry 2013a)	COUT BAX-B and COUT BAX-C
White River/Strawberry Road Scenic Backway (Utah)	Designated by the State of Utah in portions managed by Uinta National Forest Approximately 28 miles long and follows a portion of the left fork of the White River before ending at Strawberry Reservoir and Strawberry campground Designated for scenic values with numerous recreation opportunities (Public Lands Interpretive Association 2014b)	COUT-A, COUT-C

Special Recreation Management Areas

SRMAs are designated to manage intensively used recreation areas and provide certain recreation opportunities, such as boating, hunting, camping, and hiking. According to the BLM, SRMAs are "…administrative units where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, and/or distinctiveness, especially as compared to other areas used for recreation" (BLM 2012d).

Table 3-202 describes the SRMAs located with the alternative route study corridors.

TABLE 3-202
SPECIAL RECREATION MANAGEMENT AREAS IN
THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Special Recreation Management Area	Management Prescription	Relevant Alternative Routes
Wyoming		
Continental Divide National Scenic Trail	Designated in the Bureau of Land Management (BLM) Rawlins Field Office A 0.25 mile corridor for approximately 80 miles in the federal portion of the special recreation management area Provides diverse topography, geography, vegetation, wildlife, and scenic opportunities to trail users and is designated as an avoidance area for linear utilities (BLM 2008b)	All WYCO
North Platte	Designated in the BLM Rawlins Field Office Approximately 5,000 acres, including a 0.25 mile area on either side of the North Platte River Provides high-quality recreational opportunities, including floating, fishing, camping, and sightseeing, and is designated as an avoidance area for linear facilities (BLM 2008b)	All WYCO
Colorado		
Juniper Mountain	Designated by the BLM Little Snake Field Office Approximately 1,780 acres Provides opportunities for boating, hunting, camping, and hiking, and is considered an avoidance area for linear facilities; rights-of-way determined on a case-by-case basis consistent with the special recreation management area's objectives (BLM 2011b)	WYCO-D
Serviceberry	Designated by the BLM Little Snake Field Office Approximately 12,380 acres Provides backcountry, non-motorized hunting, and heritage interpretation/education experiences; rights-of-way determined on a case-by case basis (BLM 2011b)	WYCO-D
Utah		
Fantasy Canyon	Designated by the BLM Vernal Field Office Approximately 69 acres Designated for opportunities for self-guided touring and hiking and allows for rights-of-way (BLM 2008f)	COUT-C, COUT-H, COUT-I

TABLE 3-202
SPECIAL RECREATION MANAGEMENT AREAS IN
THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE

Special Recreation Management Area	Management Prescription	Relevant Alternative Routes
Labyrinth Canyon	Designated by the BLM Price Field Office Approximately 34,240 acres Managed to provide users opportunities for flat water or novice river corridor recreation; no structures can be built in the recreation opportunity spectrum primitive class; allows for rights-of-way consistent with resource management plan (RMP) goals and objectives (BLM 2008d)	All COUT BAX
Labyrinth Rims/Gemini Bridges	Designated by the BLM Moab Field Office Approximately 300,650 acres Managed for scenery, endangered fish, camping, and private boating in Labyrinth Canyon under a cooperative agreement with Utah Division of State Parks and Recreation, and Fire, Forestry, and State Lands; allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008c)	All COUT BAX
Nine Mile Canyon	Designated by the BLM Vernal Field Office Approximately 44,168 acres Managed to protect high-value cultural resources and scenic quality; allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008i)	COUT-C, COUT-H, COUT-I
	Designated by the BLM Price Field Office Approximately 24,300 acres Managed for visitors to enjoy prehistoric and archaeological sites, including extensive rock panels; allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008d)	COUT-C, COUT-H, COUT-I
San Rafael Swell	Designated by the BLM Price Field Office Approximately 938,500 acres Managed for motorized and recreational opportunities in an expansive and unique geologic setting; allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008d)	All COUT BAX
Utah Rims	Designated by the BLM Moab Field Office Approximately 15,424 acres Managed for sustainable motorized, mechanized, and non-motorized recreation while protecting and maintaining resource values that include range, wildlife habitat, scenic, cultural, recreational, and riparian values; allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008c)	All COUT BAX

Recreation Opportunity Spectrum

ROS classifications have been identified on the Manti-La Sal, Ashley, and Uinta National Forests and the BLM Rawlins, White River, and Price Field Offices in the Project study area. The purpose of the ROS is to provide a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. The ROS is typically broken out into six different classifications, which encompass geographic areas throughout the forest or BLM field office (BLM 2008b). In addition to the typical six categories, there are two classifications specific to the BLM Rawlins Field Office (Front Country and Middle Country) and one that is not used as often (roaded modified) occurring in the Uinta National Forest. Table 3-203 describes the ROS classifications, as well as their applicable management agency and the alternative routes that cross each classification.

TABLE 3-203
RECREATION OPPORTUNITY SPECTRUM AREAS

Classification	Forest or BLM Field Office and Management Prescription	Relevant Alternative Routes
Front Country	Division of the Adobe Town Dispersed Recreation Use Area in the Western Extensive Recreation Management Area in the Bureau of Land Management (BLM) Rawlins Field Office Characterized in general as a natural environment with moderate evidence of the sights and sounds of man; resource modification and utilization practices evident, but in harmony with the natural environment Low to moderate concentration of users (BLM 2008b).	WYCO-C
Middle Country	Division of the Adobe Town Dispersed Recreation Use Area in the Western Extensive Recreation Management Area in the BLM Rawlins Field Office Characterized as a predominately unmodified natural environment Low concentration of visitors; motorized use is permitted (BLM 2008b).	WYCO-C
Primitive	Alternative routes in the BLM Price Field Office and Uinta National Forest Unmodified natural environment with isolation from man-made sights, sounds, and management controls; motorized use prohibited, but non-motorized trails acceptable; structures very rare (BLM 2008d).	All COUT BAX and COUT
Semi-primitive Non-motorized	Alternative routes in the BLM Price Field Office and Ashley National Forest Natural settings with some subtle modifications, but non-motorized trails acceptable with little or no evidence of motorized routes; structures rare or isolated (BLM 2008d).	COUT BAX-B, all COUT except COUT-A

TABLE 3-203 RECREATION OPPORTUNITY SPECTRUM AREAS		
Classification	**Forest or BLM Field Office and Management Prescription**	**Relevant Alternative Routes**
Semi-primitive Motorized	Alternative routes in the BLM Price and White River Field Offices, Ashley, Manti-La Sal, and Uinta National Forests Natural setting with moderate alterations; strong evidence of motorized trails, routes, and roads with isolated structures (BLM 2008d)	All WYCO, COUT BAX, COUT
Roaded Natural	Alternative routes in the BLM White River Field Office and Manti-La Sal and Ashley National Forests Natural setting with easily observed to dominant modifications to the setting; strong evidence of maintained roads and highways and scattered structures noticeable from travel routes (BLM 2008d). The alternative route study corridor crosses this ROS area in the BLM White River Field Office, Manti-La Sal National Forest, and Ashley National Forest.	All WYCO, COUT BAX, COUT
Roaded Modified	Alternative routes in the Uinta National Forest Area that provides visitors opportunities to get away to a more natural environment and provides easy access; roads found in this category, as well as dispersed camping (Stankey et al. 1986).	All COUT BAX and COUT
Rural	Alternative route in the BLM Price and Rawlins Field Offices and Uinta National Forest Modified natural setting with dominant modifications observed often; strong evidence of maintained roads and highways with structures especially apparent (BLM 2008d)	WYCO-C, all COUT BAX and COUT
Urban	Alternative route in the BLM Price and White River Field Offices Development dominates the setting with minor natural elements; strong evidence of maintained roads and highways with structures as a dominant feature (BLM 2008d)	All COUT BAX, COUT-H

3.2.12.4.2 Impact Assessment and Mitigation Planning

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project could result in both direct and indirect effects on parks, preservation, and recreation resources. Direct effects associated with construction, operation, and maintenance activities could include:

- Trail and scenic byway closures during construction (short-term)
- Increased access into areas not suitable for vehicular travel as a result of new access roads constructed for the Project (e.g., non-motorized trails,) (long-term)
- Limit expansion of recreation sites (long-term)

- Potential diminished recreational experience at popular campgrounds, trails, and other recreation areas as a result of the sights, sounds, and presence of the transmission line and maintenance roads (e.g., Indian Creek Campground) (long-term)

Criteria for Assessing Level of Impacts

Criteria were developed to assess the level of potential effects on parks, preservation, and recreation resources associated with implementation of the Project (Table 3-204). The assessment of impacts was based on the relationship between the level of a potential effect of each use to estimated disturbance associated with the Project construction, operation, and maintenance. The methodology for assessing the potential impacts on parks, preservation, recreation resources associated with implementing the Project generally includes:

- Identifying the types of potential effects on parks, preservation, and recreation resources that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities
- Developing criteria for assessing the level of a potential effect on parks, preservation, and recreation resources
- Assessing the initial impacts on parks, preservation, and recreation resources
- Identifying the appropriate selective mitigation measures for minimizing potential adverse effects
- Determining specific areas where selective mitigation should be applied
- Disclosing potential residual impacts on parks, preservation, and recreation resources (refer to Table 3-206)

Aesthetic impacts on views from recreation areas (i.e., campgrounds, SRMAs, state parks, OHV areas, and motorized and non-motorized trails) are described in the visual resources section (Section 3.2.18).

TABLE 3-204
CRITERIA FOR ASSESSING LEVEL OF RECREATION IMPACTS ON PARKS, PRESERVATION, AND RECREATION RESOURCES

Level of Impacts	Description
High	▪ Areas where the Project would conflict physically with any designated recreation or preservation use area (i.e., right-of-way crosses use area) ▪ Areas where the Project would conflict with any applicable adopted management prescription or goal of the affected land-management agency (e.g., campground)
Moderate	▪ Areas where the Project would create an indirect conflict with a recreational use or designation (i.e., where new or improved access to a recreation use area would be created) ▪ Areas where the transmission line would require expansion of an existing right-of-way in a designated recreation area
Low	▪ Areas where recreation or preservation area management prescription is compatible with a transmission line

Mitigation and Effects Analysis

Assessment of Initial Impacts

The level of the potential effects on parks, preservation, and recreation resources that could result from implementation of the Project was used as the basis for assessing initial impacts. The level of initial impacts on these areas was based on the compatibility of the park, preservation, or recreation resource

with construction of a new transmission line. The initial impacts were assigned using the criteria presented in Table 3-204.

The impact analysis for ROS, SRMAs, and scenic byways is different than other parks, preservation, and recreation resources because high, moderate, and low impact criteria were not used to assess impacts. Instead a discussion of how many miles the Project crosses a designation is reported, and a qualitative discussion of how the management prescriptions and the relevant/important values or special characteristics that would result in an agency's ability to manage these land-use designations is presented. Each ROS, SRMA, and scenic byway is designated and managed for a specific resource, making impacts varied for each crossing. For specific information regarding the effects on resources occurring in a ROS, SRMA, and scenic byways, and the alternative routes that cross them, refer to the applicable resource section (i.e., wildlife, cultural resources, etc.)

Mitigation Planning and Effectiveness

In addition to the design features described as part of the Project description (Table 2-8), selective mitigation measures also would be used to minimize adverse impacts on parks, preservation, and recreation resources; these are described in Table 3-205.

TABLE 3-205
SELECTIVE MITIGATION FOR PARKS, RECREATION, AND PRESERVATION AREAS

Selective Mitigation Measure	Description of Mitigation	Example of Application
4	Minimize tree clearing	Minimize disturbance to vegetated areas near recreation sites (e.g., campgrounds, picnic areas, etc.)
5	Minimize new and improved accessibility	Relocating a portion of an alternative route to avoid a non-motorized trail
7	Span and/or avoid sensitive features	Placing structures in a manner that would span over a trail or recreation-use area
8	Match transmission line spans	Matching transmission towers and spans to avoid further disturbing a campground or recreation site
9	Maximize the span between the transmission towers	Locate structures the maximum distance possible from each side of trail

Residual Impacts

Table 3-206 summarizes the initial impacts on parks, preservation, and recreation resources, the selective mitigation measures (Table 2-13) applied to mitigate potentially adverse effects on those resources; and the remaining residual impacts. Section 3.2.12.5 reports on the high and moderate residual impact mileages that would occur after selective mitigation is applied.

TABLE 3-206
SUMMARY OF INITIAL AND RESIDUAL IMPACTS
ON PARKS, RECREATION, AND PRESERVATION AREAS

Resource[1]	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Campground	High	4, 5, 7, 8	Moderate
Off-Highway Vehicle/Motorized Use Area	Moderate	7	Low
Recreation Opportunity Spectrum (ROS) Classification – Front Country[2]	Not applicable	Not applicable	Not applicable
ROS Classification – Primitive[2]	Not applicable	Not applicable	Not applicable

TABLE 3-206
SUMMARY OF INITIAL AND RESIDUAL IMPACTS
ON PARKS, RECREATION, AND PRESERVATION AREAS

Resource[1]	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
ROS Classification – Semi-Primitive Non-motorized[2]	Not applicable	Not applicable	Not applicable
ROS Classification – Semi-Primitive Motorized[2]	Not applicable	Not applicable	Not applicable
ROS Classification – Roaded Natural[2]	Not applicable	Not applicable	Not applicable
ROS Classification – Roaded Modified[2]	Not applicable	Not applicable	Not applicable
ROS Classification – Rural[2]	Not applicable	Not applicable	Not applicable
ROS Classification – Urban[2]	Not applicable	Not applicable	Not applicable
Recreation Site	High	4, 5, 7, 8	Moderate
Recreation Trail-Motorized	High	5, 7, 9	Low
Recreation Trail-Non-motorized	High	4, 5, 7, 8, 9	Moderate
State Historic Trails	High	5, 7, 9	Moderate
Scenic Highways/Byways/Backways[2]	Not applicable	Not applicable	Not applicable
Shooting/Archery Range[2]	High	7	Low
Special Recreation Management Area[2]	Not applicable	Not applicable	Not applicable

NOTES:
[1]Only resources crossed by the alternative routes are listed in this table.
[2]The impact analysis for recreation opportunity spectrums, special recreation management areas, and scenic byways is different than other parks, preservation, and recreation resources because high, moderate, and low impact criteria were not used to assess impacts.

3.2.12.5 Results

In this section, the term reference centerline is used to describe impacts on a park, preservation, or recreation resource. Reference centerline also refers to impacts in the Project's associated 250-foot-wide right-of-way. When discussing where the reference centerline crosses a park, preservation, or recreation area, the term crossing also includes where the reference centerline may be adjacent to a project or facility.

3.2.12.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.12.5.2 Impacts Common to All Action Alternatives

General Construction Impacts on Dispersed Recreation

Dispersed recreation occurs in the study corridors mainly on BLM- or USFS- administered lands. Dispersed recreation users typically utilize existing infrastructure to access dispersed recreation areas. A quantitative impact analysis was not completed for dispersed recreation due to lack of data. Construction is expected to affect dispersed recreation use, particularly on Saturdays and possibly on Sundays although no construction is planned on Sundays; seasons of use may vary by region. The duration of transmission line construction activities on any given parcel of land may extend up to a year although the total amount of time of actual construction activity would be much shorter (in the range of a few months). Over any particular section of the selected route, transmission line construction would be characterized by short periods (ranging from a day to 1 to 2 weeks) of relatively intense activity interspersed with periods of no activity. However, effects on dispersed recreation users are expected to be similar between alternative

routes as discussed below. Impacts on recreation infrastructure (such as trails) are assessed by alternative route under Section 3.2.12.5.4.

Off-highway Vehicle Users

OHV users are mainly restricted to designated roads, trails, or OHV areas. Short-term effects on OHV users during construction could include restricted access or temporary closure of roads, trails, or OHV areas and increased traffic from construction vehicles and equipment. Increased dust/vehicle emissions also could occur. Long-term effects from the Project on OHV users would be minimal. Roads, trails, or OHV areas are not anticipated to be permanently unavailable. In addition, Selective Mitigation Measure 5 would be used to restrict OHV users from using the Project right-of-way as an OHV trail or road.

The use of guyed structures is proposed in Wyoming, Colorado, the Uintah Basin in Utah. In dispersed recreation areas, where guyed structures are used, there is a potential for recreational accidents (i.e., OHV collisions, etc.). The Applicant will coordinate with the agencies on locating those structures.

Hunters and Wildlife Viewers

During different times of the year, hunters and wildlife viewers would be accessing BLM- or USFS-administered lands to hunt, view, or photograph specific wildlife species. Short-term effects from construction activities would include temporary disturbance, restriction or closure of access to hunting or viewing areas, and noise and construction activities disrupting wildlife for hunters, wildlife viewers, and wildlife photographers. Selective Mitigation Measure 12 would restrict activities during sensitive times of the year for wildlife (e.g., calving, etc.) Long-term effects generally would be expected to be minimal with occasional noise and dust that may occur during maintenance activities on the transmission line.

Commercial hunting operations occur throughout the Project area. Short-term effects from construction activities on these operations would include temporary disturbance, restriction or closure of access to hunting, any noise, and construction activities disrupting wildlife. Long-term effects generally would be expected to be minimal with occasional noise and dust occurring during maintenance activities on the transmission line. Selective Mitigation Measure 12 also would be applied to these areas and compensation for land and private property concerns would be negotiated by the Applicant with the land and/or business owner.

Camping

Dispersed camping is located predominately near existing trails or roads and do not have permanent infrastructure in place (e.g., restrooms, running water, etc.). Short-term effects on dispersed camping from construction activities would include visual, noise, dust, and vehicle emission impacts from construction equipment and restriction or closure of campsite access points. Long-term effects generally would be minimal with occasional noise and dust that may occur during maintenance activities on the transmission line.

Non-motorized Recreation Users

Non-motorized users include hikers, backpackers, mountain bikers, horse-back riders, and individuals participating in geo-caching. Non-motorized users are generally drawn to disperse recreation areas with little evidence of human presence. Trail systems allow for non-motorized users to access disperse recreation areas. Short-term effects on non-motorized users would include restriction or temporary closure of access to trails and associated facilities (e.g., campgrounds, trailhead facilities, restrooms, etc.), as well as a temporary increase of dust, vehicle emissions, visual, and noise impacts from construction equipment and activities. Long-term effects from the Project on non-motorized users could include views

influenced or dominated by the Project infrastructure. Occasional noise and dust may occur during maintenance activities on the transmission line.

3.2.12.5.3 345-kilovolt Ancillary Transmission Components

There are no parks, preservation, or recreation areas crossed or in the study corridor of the 345kV ancillary transmission components.

3.2.12.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Table 3-207 reports the number of miles of estimated residual impacts on parks, preservation, and recreation resources for WYCO alternative routes.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Alternative WYCO-B in Wyoming crosses the following parks, preservation, and recreation resource areas (including miles):

- Rawlins to Baggs Road Trail (0.3 mile)
- North Platte SRMA (0.2 mile)
- Outlaw Trail Loop Scenic Drive (0.2 mile)

The following parks, preservation, and recreation resource areas are not crossed by Alternative WYCO-B in Wyoming, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Fort Steele Rest Area
- North Platte River
- Fort Steele/Rochelle Public Access Area
- Ripple Ridge Raceway
- Continental Divide National Scenic Trail (NST) SRMA

Environmental Consequences (Wyoming)

Alternative WYCO-B in Wyoming would have 0.3 mile of moderate residual impacts and no high residual impacts on parks, preservation, and recreation resources.

Alternative WYCO-B in Wyoming crosses the Rawlins to Baggs Road Trail, which is considered an avoidance area for utility rights-of-way in the BLM Rawlins Field Office RMP. By applying Selective Mitigation Measures 5, 7, and 9, direct impacts on the trail location could be avoided. These mitigation measures also would alleviate interference with the designated avoidance area for the trail, which is compliant with the BLM Rawlins Field Office RMP. If a trail would be affected directly by the Project, the BLM Rawlins Field Office would need to approve crossing into the avoidance area. Visual impacts from the towers crossing the trails are addressed in Section 3.2.18. Additional analysis and information for this trail crossing is in Section 3.2.19.5, in accordance with BLM Manual 6280.

TABLE 3-207
ALTERNATIVE ROUTE COMPARISON FOR PARKS, PRESERVATION, AND RECREATION RESOURCES INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Recreation Sites, Access, and Parks (miles)	Trails (miles)			Scenic Byways/ Backways (miles)[1]	Special Recreation Management Area (miles)[1]	Recreation Opportunity Spectrum (miles)[1]					Residual Impacts (miles)[2]		
			Rawlins to Baggs Road Trail	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	0.0	0.3	0.0	1.2	0.2	0.2	0.0	14.8	0.9	0.0	0.0	1.2	0.3	0.0
Wyoming	*141.0*	*0.0*	*0.3*	*0.0*	*0.0*	*0.2*	*0.2*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*	*1.2*	*0.0*	*0.0*	0.0	*14.8*	*0.9*	*0.0*	*0.0*	*1.2*	*0.0*	*0.0*
WYCO-C	210.0	0.0	0.3	0.0	1.2	0.2	0.2	0.0	18.6	0.9	0.0	0.0	1.2	0.3	0.0
Wyoming	*144.7*	*0.0*	*0.3*	*0.0*	*0.0*	*0.2*	*0.2*	0.0	*3.8*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*	*1.2*	*0.0*	*0.0*	0.0	*14.8*	*0.9*	*0.0*	*0.0*	*1.2*	*0.0*	*0.0*
WYCO-D	249.4	0.5	0.9	0.0	0.8	13.0	1.6	0.0	14.8	0.9	0.0	0.0	0.8	1.4	0.0
Wyoming	*134.9*	*0.0*	*0.9*	*0.0*	*0.0*	*13.0*	*0.2*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.9*	*0.0*
Colorado	*114.5*	*0.5*	*0.0*	*0.0*	*0.8*	*0.0*	*1.4*	0.0	*14.8*	*0.9*	*0.0*	*0.0*	*0.8*	*0.5*	*0.0*
WYCO-F	218.8	0.0	0.3	0.0	1.2	0.2	0.2	0.0	14.8	0.9	0.0	0.0	1.2	0.3	0.0
Wyoming	*153.5*	*0.0*	*0.3*	*0.0*	*0.0*	*0.2*	*0.2*	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*	*1.2*	*0.0*	*0.0*	0.0	*14.8*	*0.9*	*0.0*	*0.0*	*1.2*	*0.0*	*0.0*

NOTES:
[1]The impact analysis for state parks, scenic byways, special recreation management areas, and recreation opportunity spectrums, is different than other parks, preservation, and recreation resources because high, moderate, and low impact criteria were not used to assess impacts.
[2]Due to overlap of some parks, preservation, and recreation resources, the total miles of residual impacts are less than if all parks, preservation, and recreation impacts were added together.

Short-term effects on the North Platte SRMA would include visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the SRMA, affecting recreation areas and recreational users. Long-term effects from the Project would include potential restricted use of areas in the Project right-of-way. Visual impacts from Alternative WYCO-B crossing the North Platte SRMA are discussed in Section 3.2.18.

Short-term effects on the Outlaw Trail Loop Scenic Drive could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts are described in Section 3.2.18.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado crosses the following parks, preservation, and recreation resource areas (including miles):

- BLM White River Field Office ROS categories
  - Semi-primitive motorized and roaded natural (15.7 miles)
- BLM Little Snake Field Office motorized trails
  - Godiva Rim (0.2 mile)
  - Peck Mesa (0.6 mile)
  - Ruedloff Powder Wash (0.2 mile)
  - West Sims Berry (0.1 mile)
  - Yampa Valley (0.1 mile)

The following parks, preservation, and recreation resource areas are not crossed by Alternative WYCO-B in Colorado, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- South Cross Mountain Trailhead
- Horse Draw and Pinyon Ridge Road motorized trails (BLM Little Snake Field Office)

Environmental Consequences (Colorado)

Alternative WYCO-B in Colorado would have no high or moderate residual impacts on parks, preservation, and recreation resources.

The ROS categories do not restrict the development of Project, but mitigation still may be used by other resources that could reduce impacts on the ROS categories.

For the Godiva Rim, Peck Mesa, Ruedloff Powder Wash, and West Sims Berry motorized trails, Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative WYCO-C

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming crosses the same parks, preservation, and recreation resource areas as Alternative WYCO-B, except Alternative WYCO-C also crosses Front Country ROS category in the 3.8 miles and is in a designated underground pipeline utility corridor in the BLM Rawlins Field Office RMP.

The parks, preservation, and recreation areas that may be affected by being present in a portion of the 2-mile-wide study corridor are the same as Alternative WYCO-B, except for the addition of the Middle Country and Rural ROS category in the BLM Rawlins Field Office.

Environmental Consequences (Wyoming)

Alternative WYCO-C in Wyoming would have the same impacts as Alternative WYCO-B on parks, preservation, and recreation resources.

The Front Country ROS (semi-primitive motorized) does not restrict the development of the Project, but mitigation used by other resources may reduce impacts on the ROS category. The portion of the ROS being crossed by Alternative WYCO-C is also in a designated underground.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-C in Colorado crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative WYCO-B in Colorado.

Alternative WYCO-D

Affected Environment (Wyoming)

Alternative WYCO-D in Wyoming crosses the same parks, preservation, and recreation resource areas as Alternatives WYCO-B and WYCO-C, except for the miles associated with crossing Rawlins to Baggs Road Trail (0.9 mile), the Outlaw Trail Loop Scenic Drive (13.0 miles). Also, Alternative WYCO-D does not cross the Front Country, Middle Country, and Rural ROS areas in the BLM Rawlins Field Office.

The parks, preservation, and recreation resource areas that may be affected by being present in a portion of the 2-mile-wide study corridor are the same as Alternatives WYCO-B and WYCO-C, except for the additions of the Overland Trail Ruts interpretative site, Hanna Recreation Center, and municipal park in the Town of Hanna.

Environmental Consequences (Wyoming)

Alternative WYCO-D in Wyoming would have 0.9 mile of moderate residual impacts and no high residual impacts. The parks, preservation, and recreation resource areas are the same as those crossed by Alternatives WYCO-B and WYCO-C with differing total miles of moderate impacts.

Affected Environment (Colorado)

Alternative WYCO-D in Colorado crosses the same parks, preservation, and recreation resource areas as Alternatives WYCO-B and WYCO-C, except for the following:

- Juniper Mountain SRMA—considered an avoidance area for future utilities in the Little Snake RMP (1.4 miles)
- Recreation sites, access, and parks
  - Yampa River State Park and the Yampa River (0.3 mile)
  - South Beach Public River Access—a portion of Yampa River State Park in a river access area (0.5 mile)
- Motorized trails in the BLM Little Snake Field Office
  - Antelope Knoll Well (0.2 mile)
  - Mud Springs Loop (0.2 mile)
  - Yampa Valley (0.4 mile) motorized trails in the BLM Little Snake Field Office

The following parks, preservation, and recreation resource areas are not crossed by Alternative WYCO-D in Colorado, but these areas may be affected by bin a portion of the 2-mile wide study corridor:

- Serviceberry SRMA
- Recreation sites, access, and parks
  - Loudy Simpson Park
  - Craig Energy Wayside Exhibit Point of Interest
  - Fortification Rocks Viewpoint
  - U.S. Highway 40 Point of Interest
  - Juniper Canyon Boat Ramp
  - Juniper Canyon Recreation Site
  - South Beach Boat Ramp
  - South Beach Picnic Area
  - South Beach Trail Area
  - West Juniper Mountain Trailhead
  - Yampa Valley Sportsriders
- Motorized trails in the BLM Little Snake Field Office
  - Juniper Mountain
  - North Lone Tree Well
  - Pinyon Ridge Road

Pole Gulch Environmental Consequences (Colorado)

Alternative WYCO-D in Colorado would have 0.5 mile of moderate residual impacts and no high residual impacts.

The alternative route cross the Juniper Mountain SRMA for 1.4 miles, which is considered an avoidance area for utility rights-of-way in the BLM Little Snake RMP. Due to the distance of the crossing, the SRMA boundary cannot be spanned. To cross the Juniper Mountain SRMA, all other alternative routes would need to be found unviable and an approval to cross the SRMA would be required from the BLM Little Snake Field Office.

Alternative WYCO-D crosses the South Beach Public River Access, an access point to the Yampa River had would have low impacts.

For the Juniper Mountain, Pinyon Ridge Road, and Pole Gulch motorized trails, Selective Mitigation Measures such as 5, 7, and 9 could be applied to avoid impacting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F in Wyoming crosses the same parks, preservation, and recreation resource areas as Alternatives WYCO-B and WYCO-C, except Alternative WYCO-F does not cross any ROS areas like Alternative WYCO-C.

The parks, preservation, and recreation resource areas that may be affected by being present in a portion of the 2-mile-wide corridor are the same as Alternatives WYCO-B and WYCO-C, except for additions of the Little Robber Reservoir and an undeveloped recreation site.

Environmental Consequences (Wyoming)

Alternative WYCO-F in Wyoming crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternatives WYCO-B and WYCO-C in Wyoming.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-F in Colorado crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative WYCO-B.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

In Table 3-208, miles of residual impacts are reported for parks, preservation, and recreation resources for COUT BAX alternative routes.

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B in Colorado crosses the following parks, preservation, and recreation resource areas:

- Semi-primitive motorized, roaded natural, urban ROS categories managed by the BLM White River Field Office (26.7 miles)
- Dinosaur Diamond Prehistoric Byway (0.2 mile)
- Motorized trails (4.6 miles)
  - Motorized trails in Garfield County
  - Arapeen Trail
  - Crystal Geyser Trail
  - Paradise Creek
  - Thompson Single Track Trail

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT BAX-B in Colorado, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Buck N'Bull RV Park
- RBWCD Campground
- Carrot Men Rock Art Site
- Cedar Ridge Golf Course
- Crook's Brand Rock Art Site
- Dragon Road Kiosk
- Kenney Reservoir and Recreation Area
- Kenney Reservoir Boat Launch site
- Otto's Ridge Paragliding Site
- Rangely Fairgrounds
- Rangely Rock Crawling Park
- Taylor Draw River Access
- White River Bowmen (Archery)
- White River
- Motorized trails in BLM Grand Junction Field Office and Mesa County

TABLE 3-208
ALTERNATIVE ROUTE COMPARISON FOR PARKS, PRESERVATION, AND RECREATION RESOURCES INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Recreation Sites, Access, and Parks (miles)	State Parks (miles)[1]	Trails (miles)			Scenic Byways/ Backways (miles)[1]	Special Recreation Management Area (miles)[1]	Recreation Opportunity Spectrum (miles)[1]					Residual Impacts (miles)[2]		
				Rawlins to Baggs Road Trail	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
COUT BAX-B	279.9	0.2	0.0	0.0	0.1	7.3	1.7	13.5	*0.0*	44.7	35.6	*0.0*	0.6	7.3	0.1	*0.0*
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.6*	*0.2*	*0.0*	*0.0*	*24.6*	*1.5*	*0.0*	*0.6*	*4.6*	*0.0*	*0.0*
Utah	*192.9*	*0.2*	*0.0*	*0.0*	*0.1*	*2.7*	*1.5*	*13.5*	*0.0*	*20.1*	*34.1*	*0.0*	*0.0*	*2.7*	*0.1*	*0.0*
COUT BAX-C	290.4	0.2	*0.0*	*0.0*	0.1	9.3	2.3	10.1	*0.0*	34.3	53.1	*0.0*	0.6	9.3	0.1	*0.0*
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.6*	*0.2*	*0.0*	*0.0*	*24.6*	*1.5*	*0.0*	*0.6*	*4.6*	*0.0*	*0.0*
Utah	*203.4*	*0.2*	*0.0*	*0.0*	*0.1*	*4.7*	*2.1*	*10.1*	*0.0*	*9.7*	*51.6*	*0.0*	*0.0*	*4.7*	*0.1*	*0.0*
COUT BAX-E	292.2	1.1	*0.0*	*0.0*	0.1	6.6	2.6	4.0	*0.0*	58.8	33.1	2.3	0.6	6.7	1.1	*0.0*
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.0*	*4.6*	*0.2*	*0.0*	*0.0*	*24.6*	*1.5*	*0.0*	*0.6*	*4.6*	*0.0*	*0.0*
Utah	*205.2*	*1.1*	*0.0*	*0.0*	*0.1*	*2.0*	*2.4*	*4.0*	*0.0*	*34.2*	*31.6*	*2.3*	*0.0*	*2.1*	*1.1*	*0.0*

NOTES:
[1]The impact analysis for state parks, scenic byways, special recreation management areas, and recreation opportunity spectrums, is different than other parks, preservation, and recreation resources because high, moderate, and low impact criteria were not used to assess impacts.
[2]Due to overlap of some parks, preservation, and recreation resources, the total miles of residual impacts are less than if all parks, preservation, and recreation impacts were added together.

Environmental Consequences (Colorado)

Alternative COUT BAX-B would have no high or moderate residual impacts.

The semi-primitive motorized, roaded natural, urban ROS categories allow for motorized equipment, so they would not restrict the development of the Project; however, mitigation may still be used by other resources to reduce impacts on the natural environment in the ROS categories.

Short-term effects on the Dinosaur Diamond Prehistoric Byway could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts are described in Section 3.2.18.

For the motorized trails, Selective Mitigation Measures such as 5, 7, and 9 would be applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trails.

Affected Environment (Utah)

Alternative COUT BAX-B crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Paradise Creek Trailhead (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.4 mile)
- Skyline Drive Scenic Backway (0.2 mile)
- Wedge Overlook/Buckhorn Drive Scenic Backway (0.9 mile)
- Labyrinth Canyon SRMA (0.2 mile)
- Labyrinth Rims/Gemini Bridges SRMA (3.8 miles)
- San Rafael Swell SRMA (9.5 miles)
- Semi-primitive motorized, and roaded natural ROS categories in the BLM Price Field Office and Manti-La Sal National Forest (54.2 miles)
- BLM Moab Field Office motorized trails
  - Crystal Geyser (0.4 mile)
  - Thompson Spring single track (0.9 mile)
- BLM Price Field Office motorized trail (0.4 mile)
- Manti-La Sal National Forest motorized and non-motorized trails
  - Arapeen OHV Trail (0.9 mile)
  - Paradise Creek Trail (motorized) (0.1 mile)
  - Booths Canyon non-motorized trail

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT BAX-B in Utah, but these areas may be affected by being present in the 2-mile-wide study corridor:

- The Big Mountain Campground
- Buckhorn Draw interpretative site
- Camperworld
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Cottonwood Wash Trailhead
- Green River Overlook
- Indian Creek Campground
- Potter's Pond Campground, and Sam's Hollow Camping Site
- Utah Rims SRMA

- Nebo Loop Scenic Byway
- Semi-primitive non-motorized and primitive ROS categories in the BLM Price Field Office
- Roaded natural, rural, roaded modified, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest
- Semi-primitive non-motorized ROS category in the BLM Price Field Office
- Seeley Canyon spur non-motorized trail in the Manti-La Sal National Forest
- Guy's Trail motorized trail in the BLM Moab Field Office
- Scad Valley Divide motorized trail managed by the Manti-La Sal National Forest
- Nebo Loop snowmobile trail in the Uinta National Forest

Environmental Consequences (Utah)

Alternative COUT BAX-B in Utah would have 0.1 mile of moderate residual impacts and no high residual impacts on parks, preservation, and recreation resources.

For the Dinosaur Diamond Prehistoric Byway, Skyline Drive Scenic Backway, and the Wedge Overlook/Buckhorn Drive Scenic Backway, short-term effects could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts are described in Section 3.2.18.

Short term effects on the Labyrinth Canyon, Labyrinth Rims/Gemini Bridge, and San Rafael Swell SRMAs could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the SRMAs. Long-term effects may include restricted access to areas of the SRMAs in the Project right-of-way.

The semi-primitive motorized and roaded natural ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation may still be used by other resources to reduce impacts on the natural environment in the ROS categories.

Paradise Creek Trailhead is crossed by Alternative COUT BAX-B for 0.1 mile. By applying Selective Mitigation Measures 4, 5, 7, and 9, direct impacts on the Paradise Creek Trailhead could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trailhead are addressed in Section 3.2.18.

The Booths Canyon non-motorized trail in the Manti-La Sal National Forest is crossed by Alternative COUT BAX-B for 0.1 mile. By applying Selective Mitigation Measures 4, 5, 7, and 9, direct impacts on the Booths Canyon trail could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

For the motorized trails, Selective Mitigation Measures 5, 7, and 9 would be applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT BAX-C in Colorado crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative COUT BAX-B in Colorado.

Affected Environment (Utah)

Alternative COUT BAX-C in Utah crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Paradise Creek Trailhead (0.1 mile)Dinosaur Diamond Prehistoric Byway (0.9 mile)
- Skyline Drive Scenic Backway (0.2 mile)
- Wedge Overlook/Buckhorn Drive Scenic Backway (1.0 mile)
- The Labyrinth Canyon SRMA (0.2 mile) in the BLM Price Field Office
- Labyrinth Rims/Gemini Bridges SRMA in the BLM Moab Field Office (3.8 mile)
- San Rafael Swell SRMA in the BLM Price Field Office (6.1 mile)
- Semi-primitive motorized, and roaded natural ROS categories in the BLM Price Field Office and Manti-La Sal National Forest (61.3 miles)
- BLM Moab Field Office motorized trails
  - Crystal Geyser (0.4 mile)
  - Thompson Spring single track (0.9 mile)
- Manti-La Sal National Forest motorized trails
  - Arapeen OHV Trail (0.9 mile)
  - Paradise Creek Trail (0.1 mile)
- BLM Price Field Office motorized trails (2.4 miles)
- Booths Canyon non-motorized trail in the Manti-La Sal National Forest (0.1 mile)

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT BAX-C in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- The Big Mountain Campground
- Buckhorn Draw interpretative site
- Camperworld
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Cottonwood Wash Trailhead
- Crystal Geyser
- Green River Overlook
- Indian Creek Campground
- Potter's Pond Campground
- Sam's Hollow Camping Site
- Saleratus large group camping area
- Utah Rims SRMA
- Nebo Loop Scenic Byway
- The Green River (0.1 mile)
- Roaded natural, rural, roaded modified, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest
- Semi-primitive non-motorized and primitive ROS category in the BLM Price Field Office
- Seeley Canyon spur non-motorized trail in the Manti-La Sal National Forest
- Guy's Trail motorized trail in the BLM Moab Field Office
- Motorized trails in the BLM Price Field Office
- Scad Valley Divide motorized trail managed by the Manti-La Sal National Forest
- Nebo Loop snowmobile trail in the Uinta National Forest

Environmental Consequences (Utah)

Alternative COUT BAX-C in Utah would have a total of 0.1 mile of moderate residual impacts. Due to the overlap of recreation areas that generate moderate impact where the Project crosses them, the total miles of moderate impacts is less than when individual recreation area impacts are added together. There are no high residual impacts associated with the alternative route.

Paradise Creek Trailhead is crossed by Alternative COUT BAX-C for 0.1 mile. By applying selective mitigation measures, direct impacts on the Paradise Creek Trailhead could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trailhead are addressed in Section 3.2.18.

Short-term effects on the byways could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long term visual impacts from the Alternative COUT BAX-B crossing the scenic byways are described in Section 3.2.18.

Short-term effects on the SRMA could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions to the SRMA. Long-term effects may include restricted access to areas of the SRMAs in the Project right-of-way. Visual impacts from Alternative COUT BAX-C crossing the SRMAs are discussed in Section 3.2.18.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

For the motorized trails, Selective Mitigation Measures 5, 7, and 9 would be applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

The Booths Canyon non-motorized trail in the Manti-La Sal National Forest is crossed by the Alternative COUT BAX-C in Utah for 0.1 mile. By applying selective mitigation measures, direct impacts on the Booths Canyon trail could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT BAX-E in Colorado crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternatives COUT BAX-B and COUT BAX-C in Colorado.

Affected Environment (Utah)

Alternative COUT BAX-E in Utah crosses the following parks, preservation, and recreation resource areas similar to Alternatives COUT BAX-B and COUT BAX-C:

- Snow kite recreation areas (0.5 mile)
- Nephi Shooting Range (0.1 mile)
- LDS Church Ephraim Recreation Camp (0.5 mile)
- Dinosaur Diamond Prehistoric Byway (1.1 mile)
- Energy Loop Scenic Byway (Huntington/Eccles Canyons section)(1.3 mile)
- Labyrinth Canyon SRMA (0.2 mile) in the BLM Price Field Office
- Labyrinth Rims/Gemini Bridges SRMA (3.8 miles) in the BLM Moab Field Office

- Semi-primitive motorized, rural, and roaded natural ROS categories in the BLM Price Field Office
- Semi-primitive motorized and roaded natural ROS categories in the Manti-La Sal National Forest (68.1 miles)
- BLM Moab Field Office motorized trails
  - Crystal Geyser (0.4 mile)
  - Thompson Spring single track (0.9 mile)
- Western Loop motorized trail (0.3 mile) in Carbon County
- Cottonwood Ridge (0.4 mile) motorized trails in the Manti-La Sal National Forest
- Maple Fork non-motorized trail in the Manti-La Sal National Forest (0.1 mile).

The following parks, preservation, and recreation resource areas are crossed by Alternative COUT BAX-E in Utah but may be affected by their presence in a portion of the 2-mile-wide study corridor:

- Beaver Dam Reservoir Recreation Site
- Big Mountain Campground
- Burnout Canyon/Upper Electric Lake Scenic Byway Sign
- Camp MIA Shalom
- Camperworld
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Crystal Geyser
- Gooseberry Group Campground
- Green River Overlook
- Green River
- LDS Church Fairview Recreation Camp
- Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosks, Upper Huntington Creek Riparian Sign
- Nebo Loop Scenic Byway and Skyline Drive Scenic Backway
- Utah Rims SRMA
- Roaded natural, rural, roaded modified, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest
- Guy's Trail motorized trail in the BLM Moab Field Office
- Motorized trails in the BLM Price Field Office
- Nebo Loop snowmobile trail in the Uinta National Forest
- James Canyon and Oak Creek non-motorized trails in the Manti-La Sal National Forest

Environmental Consequences (Utah)

Alternative COUT BAX-E in Utah would have 1.1 miles of moderate residual impacts. Due to the overlap of recreation areas that generate moderate impacts when crossed by a Project alternative route, the total miles of moderate impacts is less than when individual recreation area impacts are added together. There are no high residual impacts associated with the alternative route.

By applying selective mitigation measures in the Snow kite recreation areas, long-term impacts on the area could be mitigated from high to a moderate.

By applying selective mitigation measures in the LDS Church Ephraim Recreation Camp, residual impacts on the area could be mitigated from high to moderate.

By applying selective mitigation measures in the area of the Nephi Shooting Range, residual impacts on the area could be mitigated from high to moderate.

Short-term effects on the byways, SRMA, could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byways or SRMA. Long-term visual impacts are described in Section 3.2.18.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project but mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

For the trails, Selective Mitigation Measures 5, 7, and 9 are applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

The Maple Fork non-motorized trail in the Manti-La Sal National Forest is crossed by Alternative COUT BAX-E in Utah for 0.1 mile. By applying mitigation measures such as minimizing tree and brush clearing for the Project right-of-way where the trail crossing occurs, minimizing new and improved accessibility to the trail so as to restrict unapproved access for recreationists, span or avoid the trail location so as to help reduce the impacts on the recreationist experience, and maximize the span over the trail location, direct impacts on the Maple Fork trail could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

In Table 3-209, miles of residual impacts are reported for parks, preservation, and recreation resources for COUT alternative routes.

Alternative COUT-A

Affected Environment (Colorado)

Alternative COUT-A in Colorado crosses the following parks, preservation, and recreation resource areas:

- Semi-primitive motorized and roaded natural ROS categories managed by the BLM White River Field Office (24.3 miles)
- Dinosaur Diamond Prehistoric Byway (0.1 mile)

The following parks, preservation, and recreation areas are not crossed by Alternative COUT-A in Colorado, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Elks Park
- Massadonna private campground

Environmental Consequences (Colorado)

Alternative COUT-A in Colorado has no high or moderate residual impacts.

The semi-primitive motorized and roaded natural ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

TABLE 3-209
ALTERNATIVE ROUTE COMPARISON FOR PARKS, PRESERVATION, AND RECREATION RESOURCES INVENTORY DATA AND RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Recreation Sites, Access, and Parks (miles)	State Parks[1]	Trails (miles)			Scenic Byways/ Backways (miles)[1]	Special Recreation Management Area (miles)[1]	Recreation Opportunity Spectrum (miles)[1]					Residual Impacts (miles)[2]		
				Rawlins to Baggs Road	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
COUT-A	207.9	0.1	*0.0*	0.0	0.5	1.8	0.6	*0.0*	*0.0*	24.6	19.8	0.0	0.0	1.9	0.5	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*20.9*	*3.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*0.1*	*0.0*	*0.0*	*0.5*	*1.8*	*0.5*	*0.0*	*0.0*	*3.7*	*16.4*	*0.0*	*0.0*	*1.9*	*0.5*	*0.0*
COUT-B	218.2	1.9	*0.0*	*0.0*	0.5	1.0	0.8	*0.0*	*0.0*	21.5	24.4	0.0	*0.0*	1.3	1.8	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*20.9*	*3.4*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*1.9*	*0.0*	*0.0*	*0.5*	*1.0*	*0.7*	*0.0*	*0.0*	*0.6*	*21.0*	*0.0*	*0.0*	*1.3*	*1.8*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	0.6	*0.0*	*0.0*	0.2	0.7	0.8	*0.0*	1.1	21.9	12.6	0.0	*0.0*	1.0	0.2	0.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.4*	*0.0*	*0.0*	*21.3*	*3.7*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*0.6*	*0.0*	*0.0*	*0.2*	*0.7*	*0.4*	*0.0*	*1.1*	*0.6*	*8.9*	*0.0*	*0.0*	*1.0*	*0.2*	*0.0*
COUT-H	200.6	1.1	*0.0*	*0.0*	0.1	3.1	2.9	*0.0*	1.4	26.7	10.5	1.5	*0.0*	3.2	1.1	0.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.4*	*0.0*	*0.0*	*21.3*	*3.7*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*1.1*	*0.0*	*0.0*	*0.1*	*3.1*	*2.5*	*0.0*	*1.4*	*5.4*	*6.8*	*1.5*	*0.0*	*3.2*	*1.1*	*0.0*
COUT-I	240.2	0.2	*0.0*	*0.0*	0.1	1.7	1.3	*0.0*	1.4	47.6	20.0	2.7	*0.0*	1.7	0.1	0.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.4*	*0.0*	*0.0*	*21.3*	*3.7*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*0.2*	*0.0*	*0.0*	*0.1*	*1.7*	*0.9*	*0.0*	*1.4*	*26.3*	*16.3*	*2.7*	*0.0*	*1.7*	*0.1*	*0.0*

NOTES:
[1]The impact analysis for state parks, scenic byways, special recreation management areas, and recreation opportunity spectrums, is different than other parks, preservation, and recreation resources because high, moderate, and low impact criteria were not used to assess impacts.
[2]Due to overlap of some parks, preservation, and recreation resources, the total miles of residual impacts are less than if all parks, preservation, and recreation impacts were added together.

Short-term effects on the Dinosaur Diamond Prehistoric Byway could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts are described in Section 3.2.18.

Affected Environment (Utah)

Alternative COUT-A in Utah crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.1 mile)
- White River/Strawberry Road Scenic Backway (0.4 mile))
- Roaded modified, roaded natural, and semi-primitive motorized ROS categories in the Uinta National Forest (20.1 miles)
- Uinta National Forest motorized trails
  - Strawberry OHV (1.5 mile)
  - Sheep Creek (and Tank Hollow Connector) (0.3 mile)
- Willow Creek South (0.1 mile)
- French Hollow (0.2 mile)
- Non-motorized trails in the Uinta National Forest
- Blind Canyon (0.2 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT-A in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Aspen Grove Campground and Boat Ramp
- Big Mountain Campground
- Bottle Hollow Reservoir Recreation Site
- Camperworld
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Cedar Haven Truck and RV Park
- Fort Duchesne Rifle Range
- LDS Church Fairview Recreation Area
- Private OHV track
- Narrow East Trailhead
- Sheep Creek Camping Area
- Soldier Creek Overlook
- Soldier Creek Dam Day Use Area
- Strawberry River Recreation Site, and Teat Mountain Trailhead
- Nebo Loop Scenic Byway
- Semi-primitive motorized and roaded natural ROS categories in the Manti-La Sal National Forest
- Rural and primitive ROS categories in the Uinta-Wasatch-Cache National Forest
- Far Side non-motorized trail in the BLM Vernal Field Office
- Uinta National Forest non-motorized trails
  - Willow Creek South
  - Strawberry Narrows
  - Buffalo Canyon
  - Teat Mountain
  - Sky High
- Nebo Loop motorized snow trail in the Uinta National Forest
- Great Western Trail
- Left Fork White River

- The Green River
- Strawberry River

Environmental Consequences (Utah)

Nephi Shooting Range is crossed for 0.1 mile. By applying selective mitigation measures on the shooting range, residual impacts on the area could be mitigated from high to moderate.

Short-term effects to the Nebo Loop Scenic byway could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts on the Dinosaur Diamond Prehistoric Byway are described in Section 3.2.18.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

For the motorized and non-motorized trails, selective mitigation measures would be applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative COUT-A in Utah would have a total of 0.5 mile of moderate residual impacts where the alternative route crosses Willow Creek South (0.1 mile) and French Hollow (0.2 mile) non-motorized trails in the Uinta National Forest and the Blind Canyon (0.2 mile) non-motorized trail in the Manti-La Sal National Forest. By applying mitigation measures, direct impacts on the Willow Creek South, French Hollow, and Blind Canyon trails could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing these trails are addressed in Section 3.2.18.

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-B in Colorado crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative COUT-A.

Affected Environment (Utah)

Alternative COUT-B in Utah crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Private OHV track (0.5 mile)
- LDS Church Camp Timberlane Recreation Camp (1.3 mile)
- Dinosaur Diamond Prehistoric Byway (0.3 mile)
- Indian Canyon Scenic Byway (0.2 mile)
- Energy Loop: Huntington/Eccles Canyons Scenic Byway (0.2 mile)
- ROS categories (21.6)
    - Roaded modified ROS category in the Uinta National Forest
    - Roaded natural ROS category in the Ashley National Forest
    - Roaded natural and semi-primitive motorized ROS categories in the Manti-La Sal National Forest.

- Trails managed by the USFS
  - Great Western Trail (0.1 mile)
  - Sheep Creek Trail (0.3 mile)
- Motorized trails in the Ashley National Forest
  - 10128 (0.2 mile)
  - 10489 (0.2 mile)
  - 10496 (0.1 mile)
  - 10172 (0.2 mile)
- Quitchampau (0.3 mile) non-motorized trail in the Ashley National Forest
- Blind Canyon (0.2 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT-B in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosks
- Skyline Drive Staging Area
- Fort Duchesne Rifle Range
- Cedar Haven Truck and RV Park
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Camperworld
- Bottle Hollow Reservoir Recreation Site
- Big Mountain Campground
- Sheep Creek Camping Area
- Teat Mountain Trailhead
- LDS Church Fairview Recreation Camp
- Nebo Loop Scenic Byway
- Reservation Ridge Scenic Backway
- Skyline Drive Scenic Backway
- Rural, roaded natural, semi-primitive motorized, and primitive ROS categories in the Uinta-Wasatch-Cache National Forest
- Semi-primitive motorized ROS category in the BLM Price Field Office
- Roaded natural in the Manti-La Sal National Forest
- Semi-primitive motorized and semi-primitive non-motorized ROS categories in the Ashley National Forest
- Ashley National Forest trails
  - 10491
  - 10657
  - South Death Trap Canyon motorized trail
- Uinta National Forest trails
  - Tank Hollow Connector motorized trail
  - Nebo Loop snow mobile trail
- Far Side non-motorized trail in BLM Vernal Field Office
- Mill Hollow non-motorized trail in the Ashley National Forest
- Sky High non-motorized trail in the Manti-La Sal National Forest
- Uinta National Forest non-motorized trails
  - Teat Mountain, Indian Creek to Willow Creek Ridge
  - Indian Creek Sheep Camp #1
- Green River (0.1 mile)

Environmental Consequences (Utah)

By applying selective mitigation measures to the Nephi Shooting Range and the LDS Church Timberlane Recreation Camp, residual impacts on the area could be mitigated from high to moderate.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project but mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

For the Great Western Trail and Sheep Creek Trail, Selective Mitigation Measures are applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative COUT-B in Utah would have 1.8 miles of moderate residual impacts where the alternative route crosses Quitchampau (0.3 mile) non-motorized trail in the Ashley National Forest and the Blind Canyon (0.2 mile) non-motorized trail in the Manti-La Sal National Forest. There would be no high residual impacts. By applying selective mitigation measures, direct impacts on the Quitchampau and Blind Canyon could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-C in Colorado crosses the following parks, preservation, and recreation resource areas:

- Semi-primitive motorized and roaded natural ROS categories managed by the BLM White River Field Office (25.0 miles)
- Dinosaur Diamond Prehistoric Byway (0.4 mile)

In following parks, preservation, and recreation areas are not crossed by Alternative COUT-C in Colorado, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Elks Park
- Massadona private campground

Environmental Consequences (Colorado)

Alternative COUT-C in Colorado would have no moderate or high residual impacts.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

Short-term effects on the Dinosaur Diamond Prehistoric Byway could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts are described in Section 3.2.18.

Affected Environment (Utah)

Alternative COUT-C in Utah crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Private OHV track (0.5 mile)
- Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.2 mile)
- Nine Mile Canyon Backway (0.2 mile)
- ROS categories (10.6 miles)
  - Roaded modified ROS category in the Uinta National Forest
  - Roaded natural and semi-primitive motorized ROS categories in the Manti-La Sal National Forest
  - Roaded natural ROS category in the Ashley National Forest
  - Semi-primitive non-motorized ROS category in the BLM Price Field Office
- 10658 (0.3 mile) motorized trail in the Ashley National Forest
- Great Western (0.1 mile) motorized trail managed by the USFS
- Sheep Creek Trail (0.3 mile)
- Blind Canyon (0.2 mile) non-motorized trail in the Manti-La Sal National Forest
- The Green River at a Lower Green River Suitable WSR segment (tentative scenic classification) with outstandingly remarkable values for recreational opportunities for fishing, hunting, waterfowl viewing, floating, camping, and canoeing in an attractive pastoral setting and fish values (BLM 2008h)

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT-C in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Enron Campground
- Fantasy Canyon Trailhead
- Fourmile Bottom River boat put-in
- Skyline Drive Staging Area
- Cedar Haven Truck and RV Park
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Camperworld
- Big Mountain Campground
- White River Raft Access
- Teat Mountain Trailhead
- Sheep Creek Camping Area
- LDS Church Colton Recreation Camp
- LDS Church Fairview Recreation Camp
- White River/Strawberry Road Scenic Byway
- Nebo Loop Scenic Byway
- Reservation Ridge Scenic Backway
- Skyline Drive Scenic Backway
- Fantasy Canyon SRMA
- Nine Mile SRMA
- Rural, roaded natural, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest
- Semi-primitive motorized ROS category in the BLM Price Field Office
- Roaded natural in the Manti-La Sal National Forest
- Roaded natural ROS categories in the Ashley National Forest
- Sheep Creek (Tank Hollow Connector) motorized trail
- Nebo Loop snowmobile trail in the Uinta National Forest

- Ashley National Forest motorized trails
  - 10154
  - 10658
- Sky High non-motorized trail in the Manti-La Sal National Forest
- Uinta National Forest trails
  - Teat Mountain
  - Indian Creek to Willow Creek Ridge
  - Indian Creek Sheep Canyon #1 non-motorized trail
- Green River
- White River

Environmental Consequences (Utah)

Alternative COUT-C in Utah crosses the Nephi Shooting Range for 0.1 mile. By applying selective mitigation measures, residual impacts on the area could be mitigated from high to moderate.

Short-term effects to the byways could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byways. Long-term visual impacts are described in Section 3.2.18.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

For the motorized and non-motorized trails, selective mitigation measures are applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative COUT-C in Utah has a 0.2 mile of moderate residual impacts where the alternative route crosses Blind Canyon non-motorized trail in the Manti-La Sal National Forest. By applying mitigation measures, direct impacts on Blind Canyon could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

The anticipated effects on recreational opportunties on the Lower Green River Suitable WSR segment are discussed in Section 3.2.14.5.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative COUT-C.

Alternative COUT-H

Affected Environment (Colorado)

Alternative COUT-H in Colorado crosses the following parks, preservation, and recreation resource areas:

- Semi-primitive motorized and roaded natural ROS categories managed by the BLM White River Field Office (25.0 miles).
- Dinosaur Diamond Prehistoric Byway (0.4 mile)

Alternative COUT-H in Colorado does not cross the Massadona private campground, but it may be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Colorado)

Alternative COUT-H in Colorado would have no moderate or high residual impacts.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of the Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

Short-term effects to the Dinosaur Diamond Prehistoric Byway could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byway. Long-term visual impacts are described in Section 3.2.18.

Affected Environment (Utah)

Alternative COUT-H in Utah crosses the following parks, preservation, and recreation resource areas:

- Snow kite recreation areas (0.5 mile)
- Nephi Shooting Range (0.1 mile)
- LDS Church Ephraim Recreation Camp (0.5 mile)
- Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (1.1 mile)
- Energy Loop: Huntington/Eccles Canyons Scenic Byway (1.2 mile)
- Nine Mile Canyon Backway (0.2 mile)
- Green River (0.1 mile)
- ROS categories (15.1 miles)
  - Roaded natural and semi-primitive motorized ROS categories in the Manti-La Sal National Forest
  - Roaded natural ROS category in the Ashley National Forest
  - Rural, roaded natural, semi-primitive non-motorized and semi-primitive motorized ROS categories in the BLM Price Field Office
- 10658 motorized trail in Ashley National Forest (0.3 mile)
- Cottonwood Ridge (0.4 mile)
- Western Loop motorized trail in Carbon County (2.4 miles)
- Maple Fork non-motorized trail in the Manti-La Sal National Forest (0.1 mile)

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT-H in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Bamberger Roadside Monument
- Beaver Dam Reservoir Recreation Site
- Big Mountain Campground
- Burnout Canyon/Upper Electric Lake Scenic Byway Sign
- Enron Campground, Energy Loop
- Huntington/Eccles Canyons Scenic Byway Kiosks
- Fourmile Bottom River boat put-in
- Gooseberry Group Campground
- Helper City picnic shelter
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Camperworld, Upper Huntington Creek Riparian Sign
- White River Raft Access

- LDS Church Fairview Recreation Area
- Snow kite areas
- Nebo Loop Scenic Byway
- Skyline Drive Scenic Backway
- Fantasy Canyon SRMA
- Nine Mile/Nine Mile Canyon SRMA
- Electric Lake
- Rural, roaded modified, roaded natural, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest
- Urban ROS category in the BLM Price Field Office
- Ashley National Forest motorized trails
  - 10154
  - 10658
- Motorized trails in the BLM Price Field Office
- Nebo Loop snow mobile trail in the Uinta National Forest
- Manti-La Sal National Forest
  - James Canyon
  - Oak Creek

Environmental Consequences (Utah)

Alternative COUT-H in Utah would have 1.1 miles of moderate residual impacts.

By applying selective mitigation measures to the Nephi Shooting Range and the LDS Church Ephraim Recreation Camp, residual impacts on the area could be mitigated from high to moderate.

Short-term effects to the Nebo Loop Scenic Byway and the Skyline Drive Scenic Backway could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byways. Long-term visual impacts are described in Section 3.2.18.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories. Motorized vehicles should avoid crossing semi-primitive non-motorized areas. If a vehicle must cross this area, existing trails or roads should be used.

For trails, Selective Mitigation Measures 5, 7, and 9 are applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Where Alternative COUT-H crosses the Maple Fork non-motorized trail in the Manti-La Sal National Forest, 0.1 mile of moderate impacts occur. By applying selective mitigation measures, direct impacts on Maple Fork non-motorized trail could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

In addition, Alternative COUT-H in Utah has 0.5 mile of moderate impacts where the alternative route crosses a snow kite recreation area. By applying selective mitigation measures, impacts on the area could be mitigated from high to moderate.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative COUT-C.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-I in Colorado crosses the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative COUT-H.

Environmental Consequences (Colorado)

For Alternative COUT-I in Colorado, there would not be any high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT-I in Utah crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Paradise Creek Trailhead (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.1 mile)
- Skyline Drive Scenic Backway (0.2 mile)
- Energy Loop: Huntington/Eccles Canyons Scenic Byway (0.2 mile)
- Nine Mile Canyon Backway (0.4 mile)
- Roaded natural and semi-primitive motorized ROS categories in the Manti-La Sal National Forest
- Roaded natural ROS category in the Ashley National Forest
- Rural, roaded natural, semi-primitive non-motorized and semi-primitive motorized ROS categories in the BLM Price Field Office (46.7 miles)
- 10658 motorized trail in the Ashley National Forest (0.3 mile)
- Paradise Creek motorized trail in the Manti-La Sal National Forest (0.1 mile)
- Motorized trail in the BLM Price Field Office (0.4 mile)
- Arapeen OHV Trail managed by the USFS (0.9 mile)
- Booths Canyon non-motorized trail in the Manti-La Sal National Forest (0.1 mile)

The following parks, preservation, and recreation resource areas are not crossed by Alternative COUT-I in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- The Big Mountain Campground
- Enron Campground
- Indian Creek Campground
- Fourmile Bottom River boat put-in
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)
- Camperworld
- Olsen Reservoir
- Potter's pond and Potter's Pond Campground
- White River Raft Access
- Nebo Loop Scenic Byway
- Fantasy Canyon SRMA
- Nine Mile/Nine Mile Canyon SRMA
- Rural, roaded modified, roaded natural, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest
- Roaded natural ROS category in the Ashley National Forest
- Ashley National Forest motorized trails
  - 10154
  - 10658 motorized trail
- Scad Valley Divide motorized trail in the Manti-La Sal National Forest

- Nebo Loop snow mobile trail in the Uinta National Forest
- Seeley Canyon Spur non-motorized trail in the Manti-La Sal National Forest
- Green River (0.1 mile) and White River (0.3 mile)

Environmental Consequences (Utah)

By applying selective mitigation measures to the Nephi Shooting Range crossed by Alternative COUT-I in Utah, residual impacts on the area could be mitigated from high to moderate.

Short-term effects onto the Skyline Drive and Energy Loop: Huntington/Eccles Canyons scenic byways could include visual, noise, dust, and vehicle emissions from construction activities and equipment, including traffic and restrictions on the byways. Long-term visual impacts are described in Section 3.2.18.

The ROS categories allow for motorized equipment, so the categories would not restrict the development of Project. However, mitigation would still be utilized to reduce impacts on the natural environment in the ROS categories.

Motorized vehicles should avoid crossing semi-primitive non-motorized areas. If a vehicle must cross this area, existing trails or roads should be used.

Paradise Creek Trailhead is crossed by Alternative COUT-I in Utah. By applying selective mitigation measures, direct impacts on the Paradise Creek Trailhead could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trailhead are addressed in Section 3.2.18.

For trails, Selective Mitigation Measures 5, 7, and 9 are applied to avoid affecting the trails as well as to prevent new, unauthorized access of areas outside of the existing designated trail.

Alternative COUT-I in Utah would have 0.1 mile of moderate residual impacts where the alternative route crosses Booths Canyon non-motorized trail in the Manti-La Sal National Forest. By applying selective mitigation measures, direct impacts on Booths Canyon non-motorized trail could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing the trail are addressed in Section 3.2.18.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same parks, preservation, and recreation resource areas and would have the same impacts as Alternative COUT-C.

3.2.12.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A contains the following parks, preservation, and recreation resources:

- BLM Little Snake Field Office motorized trails (located in the southern portion of Siting Area A)
  - East Ruedloff Draw
  - Ruedloff Powder Wash
  - Horse Draw
  - State Line #1

- Front Country ROS area in the BLM Rawlins Field Office (located in the far northwestern corner of Siting Area A)

Environmental Consequences

If a motorized trail is located in the vicinity of the series compensation station, the trail could be upgraded to provide access for construction, maintenance, and operation activities. The trail potentially could need to be re-routed or closed permanently if the series compensation station directly conflicts with the trail.

If located in the Front Country ROS area, the recreation user's ability to access the area potentially could be affected if access routes are re-routed or closed.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B contains the following parks, preservation, and recreation resources:

- Motorized trails in the BLM Little Snake Field Office (located in the southern portion of Siting Area B)
  - Godiva Rim
  - Major Draw

Environmental Consequences

If a motorized trail is located in the vicinity of the series compensation station, the trail could be upgraded to provide access for construction, maintenance, and operation activities. The trail potentially could need to be re-routed or closed permanently if it directly conflicts with the series compensation station.

Siting Area C – Maybell

Affected Environment

Siting Area C contains the following parks, preservation, and recreation resources:

- BLM Little Snake Field Office (located in the central and northern portion of Siting Area C)
  - The Peck Mesa Northwest, Southwest, Southeast, and Connector A, Yampa Valley, and East Cross Mountain motorized trails in the
- South Cross Mountain trailhead (located in the central portion of Siting Area C)

Environmental Consequences

If a motorized trail is located in the vicinity of the series compensation station, a trail could be upgraded to provide access for construction, maintenance, and operation activities. A trail potentially could need to be re-routed or closed permanently if it directly conflicts with the series compensation station.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C has the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C has the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C has the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Siting Area D contains the Little Yampa Canyon SRMA in the BLM Little Snake Field Office (located on the edge of the southwestern corner of Siting Area D)

Environmental Consequences

It is not anticipated the series compensation station would be located in the Little Yampa Canyon SRMA. If the series compensation station is located in the vicinity of the SRMA, access to the SRMA during construction and operation of the series compensation station may be altered. Potential visual impacts on the Little Yampa Canyon SRMA for Siting Area D are described in Section 3.2.18.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F has the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F has the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F has the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E

Siting Area G – Green River

Affected Environment

Siting Area G contains the following parks, preservation, and recreation resources:

- A motorized trail in the BLM Price Field Office (located in the southern portion of Siting Area G)
- Semi-Primitive motorized ROS category in the BLM Price Field Office (located in the southern portion and northeast corner of Siting Area G)

Environmental Consequences

If a motorized trail is located in the vicinity of the series compensation station, a trail could be upgraded to provide access for construction, maintenance, and operation activities. A trail potentially could need to be re-routed or closed permanently if it directly conflicts with the series compensation station.

If located in the semi-primitive motorized ROS area, a recreation user's ability to access the area potentially could be affected if access routes are re-routed or closed

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Siting Area F contains the following parks, preservation, and recreation resources:

- Far Side non-motorized trail in the BLM Vernal Field Office (located in the northern central portion of Siting Area F)
- Dinosaur Diamond Prehistoric Byway (located in the northwest corner of Siting Area F)
- Located in the northeastern portion of Siting Area F
  - Bottle Hollow Reservoir
  - Fort Duchesne Rifle Range
  - Fort Duchesne Park recreation sites

Environmental Consequences

If a series compensation station is located in the vicinity of a non-motorized trail, access could be altered/limited during construction.

Access for construction and operation for the series compensation station may affect the Dinosaur Diamond Prehistoric Byway if the series compensation station is located in the vicinity of the byway. Effects on the byway during construction include increased traffic, temporary closure of exit/on ramps located along the byway, temporary closure of interpretative or rest stop facilities along the byway, etc. These effects are not anticipated to continue after construction of the series compensation station. Potential visual impacts on the Dinosaur Diamond Prehistoric Byway for Siting Area F are described in Section 3.2.18.

It is not anticipated the series compensation station would be located on the Bottle Hollow Reservoir recreation area, Fort Duchesne Rifle Range, or Fort Duchesne Park, but access to these areas during construction and operation may be altered or limited.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B has the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Siting Area E contains the Fantasy Canyon SRMA (located on the western edge of Siting Area E).

Environmental Consequences

It is not anticipated the series compensation station would be located on the Fantasy Canyon SRMA, but access to this area during construction and operation may be altered or limited.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.13 Transportation and Access

3.2.13.1 Introduction and Regulatory Framework

Federal, state, and local transportation and access facilities and systems are located throughout the Project, including roadways, airports and aviation facilities, and railroad facilities. Transportation facilities were identified and evaluated for potential impacts from the Project, where transportation facilities were crossed by the alternative route. Roadways also were identified for the potential to be used for construction, operation, and maintenance of the Project.

As part of the EIS process, to be included as a condition of the BLM and USFS RODs, a POD (refer to Section 2.4) would be developed for the selected route. As part of the POD, a Traffic and Transportation Management Plan would be developed to address regulatory compliance, outline traffic management practices, and identify levels of right-of-way access and selective mitigation measures (i.e., the selective mitigation measures applied in the EIS, and through agency coordination during the development of the POD, to help reduce impacts related to transportation and the construction of temporary and long-term access in vicinity of the Project). The purpose of the Traffic and Transportation Management Plan would be to provide the BLM, USFS, and other public agencies; CIC; and the Applicant's construction contractor with a description of the type of access associated with the construction, operation, and maintenance of the Project and make evident the potential impacts that could be created by construction and operation of the Project. The goal of the Traffic and Transportation Management Plan would be to ensure impacts from construction of the Project and any associated access are kept to a minimum through the use of management practices and mitigation measures identified as part of the EIS process. The practices and measures that would be included in the plan are intended to mitigate the effects of access for the Project on environmental resources, roads, traffic, travel, and road safety.

3.2.13.1.1 Regulatory Framework

Federal

Roadways

Section 101 of the National Highway System Designation Act of 1995 (revision of 23 CFR 470) designates the National Highway System in the U.S., including the District of Colombia and the Commonwealth of Puerto Rico, and authorized the Secretary of Transportation to make future modifications to the system. This includes interstates and U.S. highways. The American Association of State Highway and Transportation Officials and the FHWA are responsible for interstate and U.S. highways in individual states. Design standards, specifications, and guidelines that would be used for design and traffic control on roadways identified for use by the Project would adhere to FHWA protocols in accordance with Wyoming, Colorado, and Utah adopted design standards and specifications for federal and state highways/routes.

Bureau of Land Management

Roads on BLM-administered land are typically managed through travel management planning. BLM travel management plans identify designated areas and roads for type of motorized use, motorized travel restricted areas, and seasonal restrictions. New and improved road construction on BLM-administered land used for Project construction, operation, and maintenance must meet or exceed the minimum standards of width, alignment, grade, surface, and other requirements identified by the BLM Travel Management Program and the BLM Manual Section 9113 (BLM 2011c). The BLM's 2007 *The Gold Book – Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development* is also an applicable standard for road construction and maintenance on BLM land (BLM 2007a).

U.S. Forest Service

Travel management plans for the USFS-administered land in the Project area have been developed and typically identify designated areas and roads for type of motorized use, motorized travel restricted areas, and seasonal restrictions. For USFS-administered land, compliance with the Forest Service Manual and Forest Service Handbook would be required. Applicable handbooks that are part of the Forest Service Handbook include; 7709.56 – Road Preconstruction Handbook, 7709.57 – Road Construction Handbook, and 7709.58 – Transportation System Maintenance Handbook.

Aviation Facilities

Title 14, Aeronautics and Space, of Chapter 1 of the Federal Aviation Administration (FAA), Department of Transportation, requires a Notice of Proposed Construction or Alteration (Form 7460-1) for a tower or span that meets the following criteria:

- Exceeds 200 feet aboveground level
- Within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet
- Within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet
- Within 5,000 feet of a public use heliport which exceeds a 25:1 surface
- When requested by the FAA
- Any construction or alteration located on a public use airport or heliport regardless of height or location

Railroads

Title 49 CFR, Federal Railroad Administration, Department of Transportation, applies to all private, common, and contract carriers by rail in interstate and/or intrastate commerce. The Federal Transit Administration and the Federal Railroad Administration regulate railroad operations and each individual state has a railroad commission.

The NESC (Institute of Electrical and Electronics Engineers [IEEE] Standards Association (2012) provides polices for overhead utility crossing of railroads. Installation, operation, or maintenance of the Project would have to conform to the NESC requirements.

State

Roadways

State departments of transportation are responsible for building and maintaining state highways and routes. As discussed above, these states adopt design standards, specifications, and guidelines for state highways and routes as well as the federal interstates and highways. The transportation departments also provide for encroachment and occupancy permits for utility construction and operation activities. The state regulations and design standards are discussed for each state below.

Wyoming

Title 24 – Highways, Wyoming State (of 1924), established roads in Wyoming as State or County highways as well as the Department of Transportation to manage and provide direction (State of Wyoming n.d.). Design standards, specifications, and guidelines are defined in Wyoming's Department of Transportation Road Design Manual (State of Wyoming 2014) and Standard Plans (State of Wyoming 2013).

Colorado

In Colorado, the Department of Transportation code of regulations (CCR 600) provides for the department's commission and offices, highway safety, development and other agency guidance ().. Design standards, specifications and guidelines are defined in Colorado Department of Transportation's M&S Standard Plans (State of Colorado 2013) and the 1998 State Highway Access Code.

Utah

UDOT receives administrative and operations and maintenance powers through Title 72 of the State of Utah code. Design standards, specifications and guidelines are defined in UDOT's Standards and Specifications (State of Utah 2012b) and UDOT's Access Management Program.

Local

Roadways

County and local roads have standards set by each county or city to guide the building and maintenance of these roads. Similar to the Departments of Transportation of each state, counties and cities have encroachment permitting requirements for utility construction and operation activities.

3.2.13.2 Issues Identified for Analysis

The public and agencies (including BLM and USFS realty specialists, recreation planners, other agency staff, and planners and representatives from cooperating agencies) raised issues and expressed concerns

during Project scoping and data inventory phases of this EIS that are summarized in Table 3-210. These issues and concerns were used to guide the focus and level of detail of the analysis. This section is organized to reflect and respond to these identified issues.

TABLE 3-210
TRANSPORTATION AND ACCESS RESOURCES ISSUES FOR ALL ALTERNATIVE ROUTES

Issue Raised	Concern	General Location/Description
Airports and landing strips	Towers could interfere with airport and landing strip operations	Throughout the study corridors, mainly near cities and towns
County roads	Small county road maintained and not blocked or changed from use as defined in the county's transportation plan	Duchesne and Uintah counties, throughout the study corridors where crossed
General health and safety	Potential for conflict between transportation and access users during Project activities (i.e., construction, operation, and maintenance)	Throughout the study corridors

3.2.13.3 Regional Setting

3.2.13.3.1 Wyoming

Interstates, U.S. highways, and state highways in Wyoming support high travel speeds and traffic volume and occur in the vicinity of and/or are crossed by Project alternative routes. These high speed and high traffic volumes roadways support interstate, state, and regional travel, commerce, and energy development. Other roadways consisting of BLM, county, private, and local roads support direct access to livestock/rangeland operations, remote areas for recreational uses, and energy development. These other roadways support lower speeds and lower volumes of travelers and range from paved two-way roads and graded roads with gravel travel surfaces to two-track roads with native soil surfaces. Seasonal stipulations and/or weather conditions may limit access throughout the year. Railroads in the Wyoming portion of the study area support energy development and commerce and are typically concentrated in areas adjacent to other linear facilities. Airports in the Wyoming portion of the study area are generally located in the vicinity of municipalities and support interstate and regional flight. Private airstrips generally occur in areas of rangeland operations to support those operations.

3.2.13.3.2 Colorado

The study area in Colorado has U.S. and state highways that support state, regional and interstate travel, commerce, and energy development. Interstate travel accounts for less traffic volume when compared to Wyoming and the interstate highway that occurs in the Wyoming portion of the study area. These roadways support high speed and traffic volume and provide connection to other roadways, which are similar to those discussed for Wyoming. Railroads in the Colorado portion of the study area support energy development, commerce, and travel and are typically concentrated in areas adjacent to other linear facilities. Airports in the Colorado portion of the study area are generally located in the vicinity of municipalities and support interstate and regional flight. Private airstrips generally occur in areas of agricultural and rangeland operations to support those operations.

3.2.13.3.3 Utah

Similar to Wyoming, the interstate, U.S. highways, and state highways in Utah support high travel speeds and high traffic volume of interstate, state, and regional travel, commerce, and energy development. Other roadways supporting state, regional, and local travel, commerce, and energy development are similar to those discussed for Wyoming. Railroads in Utah are similar to those discussed in Colorado and support

energy development, commerce, and travel. Private airports and airstrips are similar to those discussed for both Wyoming and Colorado.

3.2.13.4 Study Methodology

This section discusses the study methodologies used to identify impacts for transportation and access resources.

Specific access routes for each Project alternative route have not been identified because the location of transmission line facilities (tower locations, etc.) is not known at this time. Once a route is selected, detailed engineering would occur to spot tower locations and design access roads. If this were done for all alternative routes being studied, the costs to develop detailed engineering would not be practical. Section 2.7.1.2, discusses the method used to estimate, for each alternative route, the amount (i.e., number of miles of existing roads to be used for Project activities versus new roads to be constructed for Project. This method was developed to facilitate comparison of alternative routes. Table 2-10 in Chapter 2 provides an overview of the modeling assumptions used for the analysis of existing and new access for the Project. The modeling assumptions were designed to estimate access required for Project alternative routes. The results of the access models are displayed as an estimate of miles of the reference centerline that could be accessed using existing roads (including existing roads to be improved) and new access. These results have been incorporated in Section 3.2.13.5.

Traffic volume anticipated during the construction of the Project also is discussed qualitatively in Section 3.2.13.5.2. The qualitative discussion of the potential impacts associated with increased traffic volume is based on information from the construction duration and manpower estimates provided by the Applicant.

3.2.13.4.1 Inventory

The transportation and access resources (roadways, aviation facilities, and railroads) crossed by the transmission line alternative routes were identified using primary and secondary data sources, aerial photography interpretation, and data gathered during field reconnaissance in 2009 and 2011.

Roadways

An inventory of roadways crossed by the reference centerline was conducted utilizing Environmental Systems Research Institute (ESRI) road data and includes interstates, highways, and a variety of other roads. Roadways identified are operated and maintained on federal, state, local (county and city), and private levels. The types of roads identified from the secondary data sources include major and other roads. Major roads include interstates, U.S. highways, and state highways. Other roads include all other road types (improved county roads, two-track native soil roads) contained in the ESRI data. Summaries of the road types are provided in Tables 3-215 through 3-217. Discussions of the major roads, likely to be affected during construction, are discussed by alternative route in the affected environment portions of Section 3.2.13.5.

Railroads

An inventory of railroads crossed by the reference centerlines for the alternative routes was identified using the ESRI railroad data. These include railroads operated by the Union Pacific Railroad in Wyoming, Colorado, and Utah; WFUX in Colorado and Utah; and the Utah Railway Company in Utah. The number of railroad crossings identified is provided in 3-215 through 3-217.

Aviation Facilities

An inventory of aviation facilities (i.e., airports and private airstrips) was collected for the 2-mile-wide alternative route study corridors. No airports or airstrips are crossed by the reference centerline (or associated right-of-way) for the alternative routes. Refer to the Aviation Facility portion of Section 3.2.13.1.1 for information regarding notice of construction for the FAA.

FAA registered airports include private and public facilities. For both municipal and private air facilities, the FAA requires utility line separation from runways and horizontal and conical zones for the safety of the planes and helicopters using the airports. Airports and airstrips were identified using an FAA database of registered airports. Table 3-211 lists the airports and airstrips in the 2-mile-wide alternative route study corridor by state.

TABLE 3-211
AVIATION FACILITIES BY STATE

Facility Name	Description	Relevant Alternative Routes
Wyoming		
Ellis Ranch	Private airstrip	All WYCO
Colorado		
Baxter Pass	Private heliport	All COUT BAX
Craig-Moffat	Municipal airport	WYCO-D
Mesa View Ranch	Private airstrip	WYCO-D
Rangely	Municipal airport	All COUT BAX
Utah		
Bonanza Power Plant	Private heliport	COUT-C, COUT-H, COUT-I
Duchesne Municipal	Municipal airport	COUT-A
Green River Municipal	Municipal airport	All COUT BAX
Mount Pleasant Municipal	Municipal airport	COUT BAX-B, COUT BAX-C, COUT-I
Nephi Municipal Airport	Municipal airport	All COUT BAX and COUT
Rogers Roost	Private airstrip	All COUT BAX routes
Roosevelt Municipal Airport	Municipal airport	COUT-A and COUT-B
Westwater	Private airstrip	All COUT BAX

3.2.13.4.2 Impact Assessment and Mitigation Planning

As discussed in Section 2.3 and Appendix B of this document, the Applicant proposes to use existing roads for the Project where possible. In areas where the existing roads do not meet the requirements of the Applicant, existing roads would be enhanced and/or new roads would be constructed to the Applicant's standard (Appendix B, Applicant's Project Description, Sections 2.5, 2.6.2, 3.2.1, 3.3.2, 3.4.1, and Attachment A). In all cases, road improvements and new roads constructed for the Project also would be constructed to meet or exceed agency standards/requirements. The Applicant would incorporate design features (refer to Table 2-8) as part of the Project description to limit impacts on transportation and access. The design features applicable to transportation and access resources include Design Features 26 and 27.

Types of Potential Environmental Effects

The improvement of existing access and new road construction during the construction, operation, and maintenance of the Project would result in effects on transportation and access resources. Short- and long-term effects associated with construction, operation, and maintenance of the Project could include:

- Increased traffic on roadways from construction personnel and transportation of construction equipment (short-term).
  - During construction, roadways would experience increases in the volume of traffic as a result of construction personnel commuting from towns in the vicinity of the Project to the job site(s), typically in the morning and evenings.
  - Throughout the workday, deliveries of materials and transport of construction equipment and/or personnel to various work areas also could occur.
  - Increases in traffic volume (both from commuting to/from the worksite and/or from construction related activities) could result in congestion of traffic on the existing road network. Increased traffic volume could result increased accidents on the existing roadway network and require additional emergency response.
- Maintenance activities as required by the Applicant and/or agencies with jurisdiction over access for the Project. Maintenance would occur periodically throughout the life of the Project and would be required in accordance with the Applicant's and/or agency maintenance standards for roadways (long-term).
- Traffic delays and/or temporary closures of roadways and/or railroads during construction (short-term).
  - Construction of the Project would require conductors to span roadways and railroads. It is not anticipated construction of the Project would alter the alignment of roadways and railroads crossed by the Project, but delays and/or temporary closures could occur because of safety concerns during stringing operations of conductors.
- Potential interference with railroad communication signal frequencies for switching facilities (short-term).

Criteria for Assessing Level of Impacts

Criteria were developed to assess the level of potential effects on transportation and access associated with implementation of the Project (Table 3-212). The assessment of impacts on each type of transportation facility is based on the relationship between the level of a potential effect on each facility to estimated disturbance associated with Project construction, operation, and maintenance.

TABLE 3-212
CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON TRANSPORTATION AND ACCESS

Level of Impacts	Description
High	▪ Areas where the Project would conflict physically and create a direct long-term conflict with existing roadways, aviation facilities, or railway facilities (i.e., displacement of roads, aviation or railroad facilities, or related maintenance facilities) ▪ Areas where the Project would conflict with the management of a transportation facility that would not allow for a facility to continue to operate (i.e., crossing height restriction areas for aviation facilities with towers taller than the conical zone allows)
Moderate	▪ Areas where the Project would create short-term impacts on access, roadways, aviation or railway operations during construction, operation, and maintenance activities (i.e., road closures during the construction of where the Project crosses a high capacity road) ▪ Areas where the transmission lines would require expansion of the existing right-of-way in existing roadway, aviation, or railway facility areas
Low	▪ Areas where the Project would not conflict with the operation or maintenance of the transportation and access resource ▪ Areas where intensity of impacts from the Project on the transportation and access resource is compatible with a transmission line

Mitigation and Effects Analysis

Assessment of Initial Impacts

The level of Project effects on transportation and access resources that could result from implementation of the Project was used as the basis for assessing initial impacts. Design features of the Proposed Action for environmental protection (refer to Table 2-8; specifically Design Features 26 and 27) would reduce impacts on transportation and access resources and were considered when assessing potential impacts on specific resources. Based on the level of a potential effect, initial impacts were assigned (Table 3-214) using the criteria presented in Table 3-212.

Mitigation Planning and Effectiveness

In addition to design features of the Proposed Action (Table 2-8), selective mitigation measures (Table 2-13) were developed to minimize adverse impacts on transportation and access facilities and systems. Selective mitigation measures to be applied where applicable and feasible based on the Project description to minimize adverse impacts on transportation and access facilities and systems are summarized in Table 3-213.

TABLE 3-213
SELECTIVE MITIGATION FOR TRANSPORTATION AND ACCESS

Mitigation Number	Description of Mitigation	Example of Application
5	Minimize new or improved accessibility	Applied to minimize new opportunities for public access via new or improved access routes
6	Tower design modification	Applied to address site-specific constraints on airports, airstrips, heliports, and other air facilities, such as height restrictions
7	Span and/or avoid sensitive features	Placing structures in a manner that would avoid, where ever possible, runways and heliports
9	Maximize span at crossing	Placement of structures at the maximum feasible distance from roadways and railroads

Residual Impacts

Selective mitigation measures are applied to reduce the level of impacts associated with Project construction, operation, and maintenance. Residual impacts are anticipated impacts on transportation and access resources after the application of the selective mitigation measures described in Table 3-214. The level of potential residual impacts on transportation and access resources associated with implementation of the Project was assessed using the criteria presented in Table 3-212. A summary of anticipated initial and residual impacts on transportation and access, as well as selective mitigation measures applied, are presented in Table 3-214. Residual impacts are discussed in Section 3.2.13.5.

TABLE 3-214
SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON TRANSPORTATION AND ACCESS

Resource	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Interstates	Moderate	9	Moderate
U.S. and state highways	Moderate	5, 9	Moderate
Other roads	Low	–	Low
Railroads	Moderate	9	Moderate
Aviation facilities	High	6, 7	Low

3.2.13.5 Results

3.2.13.5.1 No Action Alternative

If the Project is not built, then transportation and access will remain as it currently exists.

3.2.13.5.2 Impacts Common to All Action Alternatives

Roadways

Improvement of existing access and new road construction for the Project would be expected to increase traffic (i.e., the number of daily trips) on the regional roadway network. The increase in daily trips would occur primarily in the mornings and evenings due to construction workers commuting to and from the worksite. Increases in daily trips would be less apparent on interstates, U.S. highways, and state highways.

Construction of the Project would be implemented in three distinct construction spreads as described in Section 2.4.6, Construction Elements. Generally, spread 1 would include construction of the Project in Wyoming and Colorado. Spread 2 would include the eastern portions of Utah, generally from the Utah/Colorado border westward to the Wasatch Plateau. Spread 3 would include the construction of the Project in central Utah.

As discussed in Section 3.2.22.5.2, spread 1 is anticipated to have the largest peak of workers (263 workers) over 8 months (from months 15 to 22 of a 32-month construction schedule anticipated to conclude in December 2020). The proposed phased approach for construction (refer to Section 2.4.6) would likely require workers/crews to be spread throughout the geographic area of spread 1. Assuming workers commuting to and from work sites would average 2.5 workers per vehicle, an additional (approximate) 210 daily trips (i.e., 105 morning trips and 105 evening trips) on the existing roadway network would be anticipated during the 8-month construction period. The additional vehicles would be concentrated in the vicinity of the Project right-of-way throughout the Wyoming and Colorado portions of the Project area. Because of the size of the construction spread and existing access available in Wyoming and Colorado, it is not anticipated that the additional daily trips from workers commuting to and from the work site would create significant impacts on the existing roadway network in Wyoming and Colorado.

Spread 2 is anticipated to have the largest peak of workers (243 to 254) over 4 months (from months 15 to 18 of a 32-month construction schedule anticipated to conclude in December 2020). Similar to spread 1, the phased approach of construction (refer to Section 2.4.6) would likely require workers/crews to be spread throughout the geographic area of spread 2. Assuming workers commuting to and from work sites would average 2.5 workers per vehicle, an additional (approximate) 200 daily trips (i.e., 100 morning trips and 100 evening trips) on the existing roadway network would be anticipated during the 4-month construction period. These additional vehicles would be concentrated in the vicinity of the Project right-of-way throughout eastern Utah. The geographic size of spread 2 would be smaller than spread 1 and would have a shorter time frame. However, because of the extensive existing road network in the vicinity of the Project alternative routes, it would not be anticipated that the additional daily trips/vehicles from workers commuting would create significant impacts on the existing roadway network in eastern Utah.

Spread 3 is anticipated to have the largest peak of workers (230 to 244) over 3 months (from months 23 to 25 of a 32-month construction schedule anticipated to conclude in December 2020). Similar to the other spreads, the phased approach of construction would likely require workers/crews to spread throughout the geographic area of spread 3. Assuming workers commuting to and from work sites would average 2.5 workers per vehicle, an additional (approximate) 188 daily trips (i.e., 94 morning trips and 94 evening trips) on the existing roadway network would be anticipated during the 3-month construction period. These additional vehicles would be concentrated in the vicinity of the Project right-of-way throughout

central Utah. The geographic size of spread 3 would be smaller than spread 2 and would have a shorter construction period. Similar to spread 2, because of the extensive existing road network in the vicinity of the Project alternative routes, it would not be anticipated that the additional daily trips/vehicles from workers commuting would create significant impacts on the existing roadway network in central Utah.

Increased traffic and/or congestion on the existing roadway network throughout the Project area could occur from slow moving, oversized loads of materials and/or construction equipment being delivered to multi-purpose construction yards. From the multi-purpose construction yards, materials and equipment would be dispersed where needed on the access roads identified and approved in the POD (to be developed as part of the EIS process and approved prior to the BLM and USFS RODs). It is anticipated the multi-purpose construction yards would be located near existing roadways that can support oversized loads. It also is anticipated congestion would be minimal and safety procedures, to be outlined in the POD (i.e., temporary signage alerting drivers, flaggers, pilot trucks/escorts), would be followed to limit the potential of accidents. The potential for the greatest congestion could occur throughout the Project area in the spring of 2019 through the summer of 2020 (Section 3.2.22.5.2). However, it is anticipated deliveries and/or the transportation of construction equipment would be staggered during working hours of the work week when congestion on roadways is less likely to occur.

Throughout the life of the Project, the access roads required for the operation and maintenance of the Project would need to be maintained in accordance with the Applicant's and/or agencies' maintenance standards. Existing access that would be improved to meet the requirements of the Project could require the agencies' responsible for maintenance of the improved existing access to maintain these roads to a higher standard than maintained previously. New access developed for the Project would typically be done under the assumption that new access would only be used by the Applicant's personnel for purposes associated with the Project. It is anticipated these new access roads would be maintained by the Applicant but also would likely need to be incorporated into the agencies' travel management plans. The new access has the potential to increase access into areas previously inaccessible through unauthorized OHV use. The unauthorized access would have the potential for additional administrative considerations for agencies (i.e., additional enforcement, signage, disturbance and sensitive features, etc.). Through the application of selective mitigation measures to limit unauthorized access, it is anticipated minimal impact would occur.

Railroads

During construction, railroad communications systems used to operate switching facilities could experience interference with signal frequencies. Coordination of scheduling with the railway operator during this phase of construction could avoid curtailment of railway operations. Safety and operational issues could arise if the transmission line were to closely parallel the railway for some distance, instances of which for this Project are expected to be rare. In addition, induction in the rails, especially during a short-circuit event, can cause risk to persons along the rail (rare) and to signal systems. Mitigation of the instances described above can be mitigated through coordination with the railway operator prior to construction.

Aviation Facilities

No impacts on aviation and/or airstrip facilities would be anticipated because none are physically crossed by the alternative routes considered for the Project. However, for both municipal and private air facilities, the FAA requires utility line separation from runways and horizontal and conical zones for the safety of the planes and helicopters using the airports. To determine if the Project would be a hazard to these operations, the Applicant would conduct an obstruction evaluation/airport airspace analysis in coordination with the FAA. This would occur before the ROD is issued. The obstruction evaluation/airport airspace analysis would determine if a tower or span exceeds or is within any of the criteria listed in Section 3.2.13.1.1. To conduct an obstruction evaluation/airport airspace analysis, the

towers and spans for the selected route are processed through the Notice Criteria Tool and the FAA would notify the Applicant of which towers and/or spans are required to file Form 7460-1, *Notice of Proposed Construction or Alteration*. The Applicant would file Form 7460-1 and the FAA would provide a determination of no hazard or hazard to airspace. If the tower or span were found to be of no hazard, there are no further requirements (unless Form 7460-2*, Supplemental Notice*, was requested). If the tower were determined a hazard, steps would be taken to mitigate the hazard until it was determined there was no hazard. The FAA also would outline any conditions (i.e., marking, lighting, etc.) required of the Applicant during construction in the determination letter.

3.2.13.5.3 345-kilovolt Ancillary Transmission Components

Transportation and access resources would have low impacts from implementation of 345kV ancillary transmission components because the Project facilities to be constructed would occur in an area where existing substations and transmission lines exist and existing access for those facilities would be used to the extent practical.

3.2.13.5.4 500-kilovolt Transmission Line Components

Residual impacts on transportation and access resources would be anticipated to be low to moderate impact. A discussion of the moderate residual impacts and an overview of the amount the Project alternative routes that could be accessed using existing and new access are presented in this section.

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The baseline resource inventory for the WYCO alternative routes is presented in Table 3-215. The table identifies the type of roadways crossed by the Project alternative routes, the number of railroad crossings, miles of residual impacts, and the miles of the alternative routes that would be accessed using existing access and new access.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Roadways

Alternative WYCO-B in Wyoming crosses I-80 east of Walcott Junction and then parallels the interstate for a short distance (Link W30). U.S. Highway 30 is crossed twice northeast of Walcott Junction (Link W35) and Wyoming Highway 789 is crossed once south of Creston (Link W32). The alternative route also crosses and/or parallels various secondary roads such as Hanna Draw Road (Link W210), Sage Creek Road (Link W30), Wamsutter Road (Links W108 and W116), Standard/Hangout Road (Link W113), and Cherokee Trail Road (Link W409).

Railroads

Alternative WYCO-B crosses four railroad lines in the area west/southwest of Hanna and Walcott Junctions, Wyoming.

TABLE 3-215
ALTERNATIVE ROUTE COMPARISON FOR TRANSPORTATION AND ACCESS INVENTORY DATA FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Number of Roadway Crossings (Estimated)[1]					Number of Railroad Crossings (Estimated)	Residual Impacts (miles)[3]			Alternative Route to be Accessed from Existing Versus New Access Roads[4] (miles)	
		Interstates	U.S. Highways	State Highways	County Roads	Other Roads[2]		Low	Moderate	High	Existing Access	New Access
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	1	1	3	11	164	4	16.4	1.0	0.0	132.3	74.0
Wyoming	*141.0*	*1*	*0*	*2*	*2*	*135*	*4*	*12.8*	*0.8*	*0.0*	*100.9*	*40.1*
Colorado	*65.3*	*0*	*1*	*1*	*9*	*29*	*0*	*3.6*	*0.2*	*0.0*	*31.4*	*33.9*
WYCO-C	210.0	1	1	3	12	160	4	16.1	1.0	0.0	137.8	72.2
Wyoming	*144.7*	*1*	*0*	*2*	*3*	*131*	*4*	*12.5*	*0.8*	*0.0*	*106.4*	*38.3*
Colorado	*65.3*	*0*	*1*	*1*	*9*	*29*	*0*	*3.6*	*0.2*	*0.0*	*31.4*	*33.9*
WYCO-D	249.4	1	3	9	33	184	8	20.9	2.0	0.0	173.5	75.9
Wyoming	*134.9*	*1*	*2*	*7*	*2*	*108*	*5*	*10.4*	*1.5*	*0.0*	*108.7*	*26.2*
Colorado	*114.5*	*0*	*1*	*2*	*31*	*76*	*3*	*10.5*	*0.5*	*0.0*	*64.8*	*49.7*
WYCO-F	218.8	1	1	3	12	171	4	17.3	1.0	0.0	133.2	85.6
Wyoming	*153.5*	*1*	*0*	*2*	*3*	*142*	*4*	*13.7*	*0.8*	*0.0*	*101.8*	*51.7*
Colorado	*65.3*	*0*	*1*	*1*	*9*	*29*	*0*	*3.6*	*0.2*	*0.0*	*31.4*	*33.9*

NOTES:
[1]Roadway crossings were identified using Environmental Systems Research Institute (ESRI) Road Layer data.
[2]Other roadways include roads identified using the ESRI Road Layer other than interstates, U.S. highways, state highways, and county roads.
[3]The residual impacts do not equal the total miles as there are areas where roads or railroads are not present.
[4]Based on the outcome of the access modeling incorporated into the disturbance model (refer to Section 2.7.1.2), results are an estimate of the extent (in miles) of the alternative route reference centerline that could be accessed using existing access (including access that would be improved) versus new (constructed) access routes.

Environmental Consequences (Wyoming)

Roadways

Moderate impacts would be anticipated on roadways crossed by Alternative WYCO-B in Wyoming when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during daytime hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies and to minimize impacts on other roadway users during Project construction or maintenance.

Railroads

Moderate impacts would be anticipated on all railroads crossed by Alternative WYCO-B in Wyoming when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during daytime hours of the work week.

Affected Environment (Colorado)

Roadways

Alternative WYCO-B in Colorado crosses U.S. Highway 40 southwest of Maybell, Colorado (Link C92) and Colorado State Highway 318 northwest of Maybell, Colorado (Link C91).

Railroads

Alternative WYCO-B in Colorado does not cross any railroads.

Environmental Consequences (Colorado)

Roadways

Moderate impacts would be anticipated on roadways crossed by Alternative WYCO-B in Colorado when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies and to minimize impacts on other roadway users during Project construction or maintenance.

Railroads

No impacts anticipated on railroads would be anticipated from implementation of Alternative WYCO-B in Colorado.

Alternative WYCO-C

Affected Environment (Wyoming)

Roadways

Roadways crossed and/or paralleled by Alternative WYCO-C in Wyoming are similar to those discussed for Alternative WYCO-B except that Standard/Hangout Road is not crossed.

Railroads

Alternative WYCO-C in Wyoming crosses the same railroads as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Roadways

Impacts on roadways for Alternative WYCO-C in Wyoming would be the same as Alternative WYCO-B.

Railroads

Impacts on railroads for Alternative WYCO-C in Wyoming would be the same as Alternative WYCO-B.

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative WYCO-C in Colorado would be the same as Alternative WYCO-B.

Alternative WYCO-D

Affected Environment (Wyoming)

Roadways

Roadways crossed or paralleled by Alternative WYCO-D in Wyoming are similar to those discussed for Alternative WYCO-B except that Alternative WYCO-D generally parallels Wyoming Highway 789, crossing it five times (Links W32, W110, W111, and W299), and cross Standard/Hangout Road.

Railroads

Alternative WYCO-D in Wyoming cross five railroad lines in the area west/southwest of Hanna and Walcott Junctions, Wyoming.

Environmental Consequences (Wyoming)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative WYCO-D in Wyoming when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative WYCO-D in Wyoming when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Affected Environment (Colorado)

Roadways

Alternative WYCO-D in Colorado crosses U.S. Highway 40 (Link C100), crosses (two times) and parallels Colorado State Highway 13 (Links C20, C13, C100, and C105), and crosses Colorado State Highway 394. The alternative route also crosses and/or parallels various secondary roads such as Moffat County Road 4 (Links C27 and C20), Routt County Road 86/Moffat County Road 29 (Link C100), Moffat County Road 30 (Link C105), and Moffat County Road 57 (Link C106).

Railroads

Alternative WYCO-D in Colorado crosses three railroad lines in the area around Craig, Colorado.

Environmental Consequences (Colorado)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative WYCO-D in Colorado when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative WYCO-D in Colorado when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Alternative WYCO-F

Affected Environment (Wyoming)

Roadways

Roadways crossed and/or paralleled by Alternative WYCO-F in Wyoming are similar to those discussed for Alternative WYCO-B with the exception of crossing Sand Creek Road (Link W120) and not crossing Standard/Hangout Road.

Railroads

Alternative WYCO-F in Wyoming crosses the same railroads as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative WYCO-F in Wyoming when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Impacts on railroads for Alternative WYCO-F in Wyoming are the same as Alternative WYCO-B.

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative WYCO-F in Colorado are the same as Alternative WYCO-B.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The baseline resource inventory for the COUT BAX alternative routes is presented in Table 3-216. The table identifies the type of roadway crossed by the Project alternative routes, the number of railroad crossings, miles of residual impacts, and the miles of the alternative routes that would be accessed using existing access and new access.

Alternative COUT BAX-B

Affected Environment (Colorado)

Roadways

Alternative COUT BAX-B in Colorado crosses Colorado State Highway 64 (Link C177) and Colorado State Highway 139 (Link C185) in the area around Rangely, Colorado. This alternative route also crosses and/or parallels various secondary roads such as Dragon Road (Link C195) and Rio Blanco County Road 25/Garfield County Road 201/Mesa County Road 4 (Links C196 and C197).

Railroads

Alternative COUT BAX-B in Colorado crosses one railroad line northeast of Rangely.

Environmental Consequences (Colorado)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT BAX-B in Colorado when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on the railroad crossed by Alternative COUT BAX-B in Colorado when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Affected Environment (Utah)

Roadways

Alternative COUT BAX-B in Utah crosses I-70 twice (Link U487) in the area around Green River, Utah, and I-15 once (Link U650) east of Nephi, Utah. U.S. Highway 89 is crossed (Link U630) between Fairview and Mount Pleasant, Utah. Utah State Route 29 (Link U765), Utah State Route 132 (Links U639 and U650), and Utah State Route 28 (Link U650) are all crossed by this alternative route. Alternative COUT BAX-B also crosses and/or parallels various secondary roads such as the Green River Cutoff Road (Links U729 and U732), Buckhorn Draw Road (Link U732), Miller Flat Road (Link U630), and Skyline Drive (Link U630).

Railroads

Alternative COUT BAX-B in Utah parallels and crosses (five times) a railroad in the area of Thompson Springs, Utah (Links U486 and U487) and also crosses a railroad near Nephi, Utah (Link U650).

TABLE 3-216
ALTERNATIVE ROUTE COMPARISON FOR TRANSPORTATION AND ACCESS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Number of Roadway Crossings (Estimated)[1]					Number of Railroad Crossings (Estimated)	Residual Impacts (miles)[3]			Alternative Route to be Accessed from Existing Versus New Access Roads[4] (miles)	
		Interstates	U.S. Highways	State Highways	County Roads	Other Roads[2]		Low	Moderate	High	Existing Access	New Access
COUT BAX-B	279.9	3	1	7	38	147	5	17.6	1.7	0.0	159.5	120.4
Colorado	*87.0*	*0*	*0*	*2*	*23*	*45*	*0*	*6.5*	*0.2*	*0.0*	*70.2*	*16.8*
Utah	*192.9*	*3*	*1*	*5*	*15*	*102*	*5*	*11.1*	*1.5*	*0.0*	*89.3*	*103.6*
COUT BAX-C	290.4	3	3	7	37	151	7	17.9	2.2	0.0	172.6	117.8
Colorado	*87.0*	*0*	*0*	*2*	*23*	*45*	*0*	*6.5*	*0.2*	*0.0*	*70.2*	*16.8*
Utah	*203.4*	*3*	*3*	*5*	*14*	*106*	*7*	*11.4*	*2.0*	*0.0*	*102.4*	*101.0*
COUT BAX-E	292.2	3	3	13	27	166	12	18.0	3.4	0.0	181.2	111.0
Colorado	*87.0*	*0*	*0*	*2*	*23*	*45*	*0*	*6.5*	*0.2*	*0.0*	*70.2*	*16.8*
Utah	*205.2*	*3*	*3*	*11*	*4*	*121*	*12*	*11.5*	*3.2*	*0.0*	*111.0*	*94.2*

NOTES:
[1]Roadway crossings were identified using Environmental Systems Research Institute (ESRI) Road Layer data.
[2]Other roadways include roads identified using the ESRI Road Layer other than interstates, U.S. highways, state highways, and county roads.
[3]The residual impacts do not equal the total miles as there are areas where roads or railroads are not present.
[4]Based on the outcome of the access modeling incorporated into the disturbance model (refer to Section 2.7.1.2), results are an estimate of the extent (in miles) of the alternative route reference centerline that could be accessed using existing access (including access that would be improved) versus new (constructed) access routes.

Environmental Consequences (Utah)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT BAX-B in Utah when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative COUT BAX-B in Utah when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT BAX-C in Colorado are the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Roadways

Roadways crossed by Alternative COUT BAX-C are the same as COUT BAX-B with the addition of crossing U.S. Highway 6 twice (Links U488 and U734) and additional crossing/paralleling of the Green River Cutoff Road.

Railroads

Alternative COUT BAX-C in Utah crosses the same railroads as Alternative COUT BAX-B with additional crossings and paralleling of the railroad west of Green River, Utah.

Environmental Consequences (Utah)

Roadways

Impacts on roadways for Alternative COUT BAX-C in Utah are the same as Alternative COUT BAX-B.

Railroads

Impacts on railroads for Alternative COUT BAX-C in Utah are the same as Alternative COUT BAX-B.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT BAX-C in Colorado are the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Roadways

Alternative COUT BAX-E in Utah crosses I-70 twice (Link U487) in the area around Green River, Utah, and I-15 once (Link U650) near Nephi, Utah. U.S. Highway 6 is paralleled and crossed twice (Links U488 and U489). U.S. Highway 89 is crossed (Link U636) between north of Fairview, Utah. Utah State Route 10 (Link U493), Utah State Route 264/Skyline Drive (Link U600), Utah State Route 31 (Link U600), Utah State Route 132 (Links U639 and U650), and Utah State Route 28 (Link U650) is crossed Alternative COUT BAX-E.

Railroads

Alternative COUT BAX-E in Utah parallels and crosses (nine times) a railroad in the area of Thompson Springs/Green River, Utah (Links U486, U487, U488, U489, U495). It also crosses railroads near Wellington, Utah (Link U495), west of Price, Utah (Link U537), and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Impacts on roadways for Alternative COUT BAX-E in Utah are the same as Alternative COUT BAX-B.

Railroads

Impacts on railroads for Alternative COUT BAX-E in Utah are the same as Alternative COUT BAX-B.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The baseline resource inventory for the COUT alternative routes is presented in Table 3-217. The table identifies the type of roadway crossed by the Project alternative routes, the number of railroad crossings, miles of residual impacts, and the miles of the alternative routes that would be accessed using existing access and new access.

Alternative COUT-A

Affected Environment (Colorado)

Roadways

Alternative COUT-A in Colorado crosses Colorado State Highway 64 south of Dinosaur, Colorado (Link C187) and the Blue Mountain Road (secondary road) east of Dinosaur, Colorado (Link C186).

Railroads

There are no railroads crossed by Alternative COUT-B in Colorado.

TABLE 3-217
ALTERNATIVE ROUTE COMPARISON FOR TRANSPORTATION AND ACCESS INVENTORY DATA
FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Number of Roadway Crossings (Estimated)[1]					Number of Railroad Crossings (Estimated)	Residual Impacts (miles)[3]			Alternative Route to be Accessed from Existing Versus New Access Roads[4] (miles)	
		Interstates	U.S. Highways	State Highways	County Roads	Other Roads[2]		Low	Moderate	High	Existing Access	New Access
COUT-A	207.9	1	4	12	4	170	3	15.7	2.0	0.0	114.9	93.0
Colorado	*24.3*	*0*	*0*	*1*	*3*	*16*	*0*	*1.7*	*0.1*	*0.0*	*12.0*	*12.3*
Utah	*183.6*	*1*	*4*	*11*	*1*	*154*	*3*	*14.0*	*1.9*	*0.0*	*102.9*	*80.7*
COUT-B	218.2	1	7	10	4	183	6	16.5	2.5	0.0	132.7	85.5
Colorado	*24.3*	*0*	*0*	*1*	*3*	*16*	*0*	*1.7*	*0.1*	*0.0*	*12.0*	*12.3*
Utah	*193.9*	*1*	*7*	*9*	*1*	*167*	*6*	*14.8*	*2.4*	*0.0*	*120.7*	*73.2*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	1	5	6	5	98	8	10.7	1.7	0.0	128.9	79.3
Colorado	*25.0*	*0*	*0*	*1*	*4*	*19*	*1*	*1.7*	*0.1*	*0.0*	*13.6*	*11.4*
Utah	*183.2*	*1*	*5*	*5*	*1*	*79*	*7*	*9.0*	*1.6*	*0.0*	*115.3*	*67.9*
COUT-H	200.6	1	2	11	5	162	7	15.3	2.1	0.0	122.4	78.2
Colorado	*25.0*	*0*	*0*	*1*	*4*	*19*	*0*	*2.1*	*0.1*	*0.0*	*13.6*	*11.4*
Utah	*175.6*	*1*	*2*	*10*	*1*	*143*	*7*	*13.2*	*2.0*	*0.0*	*108.8*	*66.8*
COUT-I	240.2	1	2	9	5	166	3	15.8	1.5	0.0	139.7	100.5
Colorado	*25.0*	*0*	*0*	*1*	*4*	*19*	*0*	*2.1*	*0.1*	*0.0*	*13.6*	*11.4*
Utah	*215.2*	*1*	*1*	*8*	*1*	*147*	*3*	*13.7*	*1.4*	*0.0*	*126.1*	*89.1*

NOTES:
[1]Roadway crossings were identified using Environmental Systems Research Institute (ESRI) Road Layer data.
[2]Other roadways include roads identified using the ESRI Road Layer other than interstates, U.S. highways, state highways, and county roads.
[3]The residual impacts do not equal the total miles as there are areas where roads or railroads are not present.
[4]Based on the outcome of the access modeling incorporated into the disturbance model (refer to Section 2.7.1.2), results are an estimate of the extent (in miles) of the alternative route reference centerline that could be accessed using existing access (including access that would be improved) versus new (constructed) access routes.

Environmental Consequences (Colorado)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT-A in Colorado when temporary closers and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

There are no impacts anticipated on railroads for Alternative COUT-A in Colorado.

Affected Environment (Utah)

Roadways

Alternative COUT-A in Utah crosses I-15 north of Nephi, Utah, and then parallels the interstate for a short distance (Link U650). U.S. Highway 40 is crossed twice in the Uinta Basin (Links U410 and U426). U.S. Highway 6 is crossed once east of Thistle, Utah (Link U433). U.S. Highway 89 is crossed once south of Birdseye, Utah (Link U625). Utah State Route 45 (Link U241), Utah State Route 88 (Link U390), Utah State Route 87 (Links U410 and 420), Utah State Route 35 (Link U420), Utah State Route 208 (Link U421), Utah State Route 132 (Links U639 and U650), and Utah State Route 28 (Link U650) are crossed by Alternative COUT-A. Alternative COUT-A also crosses and/or parallels various secondary roads such as Sheep Creek Road (Link U433).

Railroads

Alternative COUT-A in Utah crosses railroads in Spanish Fork Canyon (Link U433) and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT-A in Utah when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative COUT-A in Utah when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-B in Colorado are the same as Alternative COUT-A.

Affected Environment (Utah)

Roadways

Roadways crossed and/or paralleled by Alternative COUT-B in Utah are similar to those discussed for Alternative COUT-A with the exception that Alternative COUT-B crosses U.S. Highway 191 (Links U524,) and cross U.S. Highway 6 two more times than COUT-A.

Railroads

Railroads crossed and/or paralleled by Alternative COUT-B in Utah are similar to those discussed for Alternative COUT-A.

Environmental Consequences (Utah)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT-B in Utah when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative COUT-B in Utah when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-C in Colorado are the same as Alternative COUT-A.

Affected Environment (Utah)

Roadways

Alternative COUT-C in Utah crosses I-15 north of Nephi, Utah, and then parallels the interstate for a short distance (Link U650). U.S. Highway 191 is crossed north of Helper, Utah (Link U514), U.S. Highway 6 is crossed near Soldier Summit, Utah and Spanish Fork Canyon (Links U527, U530, U539, and U560), and U.S. Highway 89 is crossed once south of Birdseye, Utah (Link U625). Utah State Route 45 (Link U242), Utah State Route 96 (Link U527), Utah State Route 132 (Links U639 and U650), and Utah State Route 28 (Link U650) are crossed by Alternative COUT-C. This alternative route crosses and/or parallels various secondary roads such as Sheep Creek Road (Link U539).

Railroads

Alternative COUT-C in Utah crosses railroads northeast of Bonanza, Utah (Link U242), near Soldier Summit, Utah and Spanish Fork Canyon (Links U527, U530, U560, and U539), and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT-C in Utah when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative COUT-C in Utah when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on transportation and access would be similar to impacts common to all alternatives and for Alternative COUT-C.

Alternative COUT-H

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-H in Colorado are the same as Alternative COUT-B.

Affected Environment (Utah)

Roadways

Alternative COUT-H in Utah crosses I-15 north of Nephi, Utah, and then parallels the interstate for a short distance (Link U650). U.S. Highway 191 would be paralleled through Indian Canyon north of Helper, Utah (Link U435), U.S. Highway 6 would be crossed north of Martin (Link U545), Utah, and U.S. Highway 89 would be crossed north of Fairview, Utah (Link U636). Utah State Route 45 (Link U242), Utah State Route 264 (Link U600), Utah State Route 31 (Link U600), Utah State Route 132 (Links U639 and U650), and Utah State Route 28 (Link U650) would be crossed by this alternative route. This alternative route also crosses and/or parallels various secondary roads such as Argyle Canyon Road (Links U404 and U407).

Railroads

Alternative COUT-H in Colorado crosses railroads northeast of Bonanza, Utah (Link U242), north and west of Helper/Martin, Utah (Links U545, U546, and U548), and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT-H in Utah when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative COUT-H in Utah when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on transportation and access would be similar to impacts common to all alternatives and for Alternative COUT-C.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-I in Colorado are the same as Alternative COUT-A.

Affected Environment (Utah)

Roadways

Alternative COUT-I in Utah crosses I-15 north of Nephi, Utah, and then parallels the interstate for a short distance (Link U650). U.S. Highway 6 is crossed east of Wellington, Utah (Link U494) and U.S. Highway 89 is crossed between Mount Pleasant and Fairview, Utah (Link U630). Utah State Route 45 (Link U242), Utah State Route 10 (Link U493), Utah State Route 31 (Link U498), Utah State Route 132 (Links U639 and U650), and Utah State Route 28 (Link U650) is crossed by Alternative COUT-I. This alternative route also crosses and/or parallels various secondary roads such as Argyle Canyon Road (Links U404 and U407), Miller Flat Road (Link U630) and Skyline Drive (Link U630).

Railroads

Alternative COUT-I in Utah crosses railroads northeast of Bonanza, Utah (Link U242), southwest of Wellington, Utah (Link U494), and north or Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate impacts are anticipated on roadways crossed by Alternative COUT-I in Utah when temporary closures and/or detours would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week. A Traffic and Transportation Management Plan would be developed as part of the POD to ensure necessary coordination occurs with roadway agencies to limit any conflict between roadway users and the Project.

Railroads

Moderate impacts are anticipated on all railroads crossed by Alternative COUT-I in Utah when temporary delays in railroad operations would be required for construction of the Project. Impacts would be short-term and occur during working hours of the work week.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Impacts on transportation and access would be similar to impacts common to all alternatives and for Alternative COUT-C.

3.2.13.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A contains Moffat County Road 4. From County Road 4, there are other roads that provide access into the siting area.

Environmental Consequences

Impacts on Moffat County Road 4 would include increased traffic and maintenance as well as temporary road closures, delays, and/or detours during construction. The other roads may require improvement to the Applicant's standards and there may be cases where new access roads need to be constructed.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B contains Moffat County Road 21. Also, from County Road 21, there are other roads that provide access into the siting area.

Environmental Consequences

Impacts on Moffat County Road 21 and other roads would be similar to Siting Area A.

Siting Area C – Maybell

Affected Environment

Siting Area C contains U.S. Highway 40, Moffat County Road 10, and other roads that provide access into the siting area.

Environmental Consequences

Impacts on U.S. Highway 40 would be minimal and similar to Siting Area A but also may require turnouts for access into the siting area. Impacts on other roads would be similar to Siting Area A.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Siting Area D – Bell Rock contains U.S. Highway 40, Moffat county roads 30 and 90, and other roads that provide access into the siting area.

Environmental Consequences

Impacts on U.S. Highway 40 would be minimal and similar to Siting Area A but also may require turnouts for access into the siting area. Impacts on other roads would be similar to Siting Area A.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

Siting Area G contains I-70, U.S. Highway 6, and other roads that provide access into the siting area. In the siting area, there is a railroad that parallels U.S. Highway 6 and the Green River Airport.

Environmental Consequences

Impacts on I-70 and U.S. Highway 6 would be minimal and similar to Siting Area A but also may require turnouts on the highway for access into the siting area. Impacts on other roads would be similar to Siting Area A.

It is anticipated the series compensation station would avoid the railroad and Green River Airport and by doing so there would be no direct impacts. If sited on or in the vicinity of these uses, the series compensation station potentially would interfere with the operation of the airport and trigger an obstruction evaluation/airport airspace analysis. Impacts on the railroad would be similar to those described in Section 3.2.13.5.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Siting Area F contains U.S. Highway 40 and Fort Duchesne Road. From these major roads there are other roads that provide access into the siting area.

Environmental Consequences

Impacts on U.S. Highway 40 and Fort Duchesne Road would include increased traffic and maintenance, as well as temporary road closures, delays, and/or detours during construction. The other roads may require improvement to the Applicant's standards and there may be cases where new access roads need to be constructed.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment

Transportation and access resources for Siting Area F are the same as described for Alternative COUT-A.

Environmental Consequences

Impacts on transportation and access for Siting Area F are the same as described for Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Siting Area E contains Utah State Route 45. From Utah State Route 45 there are other roads that provide access into the siting area.

Environmental Consequences

Impacts on State Route 45 would include increased traffic and maintenance as well as temporary road closures, delays, and/or detours during construction. Also, impacts could include construction of pullouts needed to access the series compensation station if built along this road. The other roads may require improvement to the Applicant's standards and there may be cases where new access roads need to be constructed.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment

Transportation and access resources for Siting Area E are the same as described for Alternative COUT-C.

Environmental Consequences

Impacts on transportation and access for Siting Area E are the same as described for Alternative COUT-C.

3.2.14 Congressional Designations

3.2.14.1 Introduction and Regulatory Framework

Congressional designations are lands managed by federal agencies to protect values and land uses unique to an area. These areas require more intensive management emphasis than is applied to surrounding public lands because these areas are designated by an act of Congress. Congressionally designated areas discussed in this section include wilderness areas, national monuments, national heritage areas, and national conservation areas (NCAs).

In addition, wilderness areas, WSA, and river segments suitable for inclusion into the wild and scenic river (WSR) system are discussed in this section. No congressionally designated WSRs are located in the 2-mile-wide study corridor.

3.2.14.1.1 Regulatory Framework

The management plans (and plan amendments) relevant to the Project area are discussed in Section 1.7.3. The specific federal laws and manuals responsible for designating a congressional designation in an alternative route study corridor include the following:

- National Landscape Conservation System (NLCS), H.R. 146 (111th): Omnibus Public Land Management Act of 2009, Title II, Sec. 2002 (16 U.S.C. 1; 123 Stat. 991 of Public Law 111-11) established the National Landscape Conservation System, which was administratively established by Secretarial Order in 2000 "in order to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations". The NLCS includes these areas administered by the BLM: national monuments, NCAs, wilderness areas, WSAs, WSRs, national scenic and historic trails, cooperative management and protection areas, outstanding natural areas, and forest reserves.
- Wilderness Act of 1964; (16 U.S.C. 1131-1136, 78 Stat. 890). P.L. 88-577, approved September 3, 1964, designates by Congress wilderness areas, which are defined as "…an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain …" and as "Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, and other features of scientific, educational, scenic, or historical value." Wilderness areas are part of the National Landscape Conservation System.

- FLPMA of 1976 (P.L. 94-579, Section 603) designates WSAs, which are similar to wilderness areas and are part of the NLCS. To be designated as a WSA, the area must meet the following criteria:
  - Size – generally, a roadless area that is at least 5,000 acres
  - Naturalness – generally appears to be primarily affected by the forces of nature
  - Opportunities – provides outstanding opportunities for solitude, or primitive or unconfined types of recreation in at least part of the area
  - Supplemental values – May also contain ecological, geological, or other features of scientific, educational, scenic, historical value

  For WSAs, FLPMA mandates: "During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness…" Specific management objectives and prescriptions for the individual WSAs are provided in the relevant BLM land-use plans for the administrative jurisdiction in which they occur.
- BLM Manual 6100 – NLCS Management Manual (Public) provides the general policy for BLM personnel on how to manage public lands in the NLCS. In general, the BLM's objective is to protect, conserve and restore the values the NLCS units were designated for; manage valid existing rights and compatible uses in a NLCS unit; utilize science, local knowledge, partnerships, and volunteers to effectively manage NLCS units; provide recreational, educational, interpretation, and visitor services; and use and showcase innovative techniques to manage compatible multiple uses in an NLCS unit (BLM 2012d). Types of NLCS units inventoried for the Project include wilderness areas, wilderness study areas, a national monument, an NCA, and national scenic and historic trails.
- BLM Manual 6220 – National Monuments, National Conservation Areas, and Similar Designations (Public) provides the general policy on how BLM personnel should manage the specific components of the NLCS, specifically NCAs, national monuments, and other similar designations (BLM 2012e). In general, the BLM's objectives are the same as the objectives described above for BLM Manual 6100.
- BLM Manual 6330 – Management of Wilderness Study Areas (Public) provides "…policy on the non-impairment standard to BLM personnel for use when managing Wilderness Study Areas (WSAs), which are part of the BLM's National Landscape Conservation System. Specifically, this policy applies to: (1) WSAs identified by the wilderness review required by Section 603 of the Federal Land Policy and Management Act (FLPMA) and currently under review by Congress…; (2) legislative WSAs (WSAs established by Congress)…; and (3) WSAs identified during land use planning process under the authority of Section 202 of FLPMA…" (BLM 2012f). The objectives outlined in the manual for WSAs include, "be consistent with relevant law, manage and protect WSAs to preserve wilderness characteristics so as not to impair the suitability of such areas for designation by Congress as wilderness [and] provide policy guidance for prolonged stewardship of WSAs until Congress makes a final determination of the management of the WSAs" (BLM 2012h).
- BLM Manual 6340 – Management of Designated Wilderness Areas (Public) provides "…guidance to BLM personnel on managing BLM lands that have been designated by Congress as part of the National Wilderness Preservation System. The lands are also managed as part of the BLM's National Landscape Conservation System." It outlines the BLM's objectives with the manual "…to manage and protect BLM wilderness areas in such a manner as to preserve wilderness character; manage wilderness for the public purposes of recreational, scenic, scientific, education, conservation, and historic use while preserving wilderness character; and effectively

manage uses permitted under Section 4(c) and 4(d) of the Wilderness Act of 1964 while preserving wilderness character" (BLM 2012h). No alternative route would cross a wilderness area. BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management (Public) provides the "…policy and program direction for the identification, evaluation, and management of eligible and suitable wild and scenic rivers (WSRs) and the management of designated components of the National Wild and Scenic Rivers System (National System). The policies and program guidance for wild and scenic rivers (WSR) in this manual are consistent with NLCS's mission to conserve, protect, and restore nationally significant landscapes recognized for outstanding cultural, ecological, and scientific values" (BLM 2012i).

- Central Utah Project Completion Act of 1992 (P.L. 102-575) The URMCC is an Executive Branch of the federal government, authorized under this Act. The Act sets terms and conditions for completing the CUP, which diverts and stores large quantities of water from Utah rivers in the Uinta Basin for use in the more populous Bonneville Basin and Wasatch Front.

3.2.14.2 Issues Identified for Analysis

During scoping, potential issues were identified by both the public and the agencies in relation to congressional designations or potential congressional designations (i.e, WSAs, suitable WSR segments). Table 3-218 outlines the issues raised, provides context, and identifies the relevant alternative routes. In addition to issues raised by the public and agencies during scoping, other issues that were identified during the data inventory are identified below.

TABLE 3-218
CONGRESSIONAL DESIGNATION ISSUES IDENTIFIED FOR ANALYSIS

Issue	Concern	Relevant Document Section	Relevant Alternative Routes
Potential conflicts with National Conservation Areas	Exclusion areas for rights-of-way and/or requiring permission for a right-of-way to cross (e.g., McInnis Canyons National Conservation Area)	Refer to Section 3.2.14.1.1; subheading National Conservation Areas	All COUT BAX
Potential conflicts with right-of-way exclusion and avoidance areas	Compliance with management prescriptions in relevant Bureau of Land Management (BLM) management plans	Refer to Section 3.2.14.1.1; information for the different special designations and other management areas provided in subsections for each special designation	WYCO-D, COUT-A, COUT-H, COUT-I, all COUT BAX
Wyoming			
No potential conflicts or issues with congressional designations or potential congressional designations (e.g., wilderness study areas or suitable wild and scenic river segments) were identified in Wyoming.			
Colorado			
Potential conflicts with a national monument	Avoid impacting a national monument.	Refer to Section 3.2.14.1.1; subheading National Monuments	WYCO-B route variations (addressed in Appendix F)

TABLE 3-218 CONGRESSIONAL DESIGNATION ISSUES IDENTIFIED FOR ANALYSIS			
Issue	**Concern**	**Relevant Document Section**	**Relevant Alternative Routes**
Utah			
Potential impacts on recreational and land-use values of rivers designated as suitable or eligible in the Wild and Scenic Rivers (WSR)	Compliance with BLM Manual 6400 and management prescriptions in relevant BLM management plans (i.e., avoidance or exclusion areas for utility rights-of-way; e.g., Lower Green River suitable wild and scenic rivers) (BLM Vernal Resource Management Plan)	Refer to Section 3.2.14.1.1; wild and scenic rivers	COUT-C, COUT-H, COUT-I

3.2.14.3 Regional Setting

Several types of congressionally designated areas that occur in the alternative route study corridor. This includes (by state): an NCA and a national monument in Colorado and a national heritage area in Utah. There are no congressionally designated areas that occur in the Wyoming portion of the alternative route study corridor. These congressionally designated areas have been designated to protect natural, biological, and cultural resources in addition to providing recreational opportunities and experiences.

One wilderness area and one WSA in Utah and two WSAs in Colorado are located 2-mile-wide study corridor. A suitable WSR segment is located in Utah. However, no congressionally designated WSRs are located in the 2-mile-wide study corridor.

3.2.14.4 Study Methodology

3.2.14.4.1 Inventory

Information for congressionally designated areas, WSAs, or suitable WSR segments was gathered from secondary data sources, including BLM management plans, and data received or downloaded from federal and state agencies. The management plans were reviewed for specific management prescriptions pertaining to linear energy facility development and rights-of-way authorizations. This inventory identified congressionally designated areas, WSAs, or suitable WSR segments located in the alternative route study corridors; however, only those congressional designations, WSAs, or suitable WSR segments crossed (i.e., crossed or paralleled by the Project reference centerline) are analyzed in detail and discussed in Section 3.2.14.5. This section and MV-18a and MV-18b include information on the congressionally designated areas, WSAs, and the suitable WSR segment identified in the alternative route study corridors. The biological resources sections (Sections 3.2.5 through 3.2.10) and the visual resource and cultural resource sections (Sections 3.2.18 and 3.2.20, respectively) discuss the resources in the congressional designations, WSAs, and the suitable WSR segment that may be affected. This section identifies the congressional designations, WSAs, and the suitable WSR segment occurring in the 2-mile-wide alternative route study corridors. Specific management prescriptions are identified for these areas with the majority of the congressional designations being managed as exclusion areas for linear development (i.e., right-of-way leases or grants).

Wild and Scenic Rivers

In 1968 Congress established a national policy to protect certain undeveloped rivers and streams through the Wild and Scenic Rivers Act (P.L. 90-542) and the creation of the National WSR System. The evaluation of a river(s) for possible inclusion in the National System follows a three-step process: (1) determination of eligibility, (2) tentative classification (wild, scenic, or recreational), and (3) determination of suitability. To be eligible for inclusion in this system, a river must be free-flowing and the stream corridor must contain at least one outstandingly remarkable resource value, such as its scenic and habitat qualities or its recreational potential. Eligible rivers are tentatively classified either as wild, scenic, or recreational rivers, based on their naturalness and accessibility for recreational uses (BLM 2011i). Eligible rivers are then further evaluated for their suitability for inclusion in the National WSR System. Suitability analyses assess jurisdictional and management constraints, among other issues, within a land use planning process.

If designated by Congress, management emphasis would be placed on administering the WSR in such manner as to protect and enhance the river values in a manner that preserves them and their immediate environments for the use and enjoyment of present and future generations (BLM 2012i). Table 3-219 lists the suitable WSR in the alternative route study corridors.

TABLE 3-219
WILD AND SCENIC RIVERS BY STATE

Name and Classification	Location and Outstandingly Remarkable Values and Classification	Bureau of Land Management's Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes
Wyoming			
There are no wild and scenic river (WSR) segments in the alternative route study corridors in Wyoming.			
Colorado			
There are no WSR segments in the alternative route study corridors in Colorado.			
Utah			
Bureau of Land Management Vernal Field Office			
Lower Green River Suitable	30 mile segment from public land boundary south of Ouray, Utah, to the Carbon county line with an additional 80 miles south of this point; outstandingly remarkable values are recreation and fish with a tentative scenic classification	For river segments found suitable and recommended for designation, each will be managed in accordance with the WSR Act, to prevent impairment of outstandingly remarkable values up to 0.25 mile from high water mark on each side of the river not to exceed 320 acres per mile. This segment is protected with both Class I and II Visual Resource Management (VRM) categories (Section 3.2.18 for further information about VRM categories); even though there are VRM concerns with crossing this area (the Fourmile Bottom area), the area is identified for future utilities in the Bureau of Land Management Vernal Resource Management Plan.	COUT-C, COUT-H, COUT-I

National Conservation Areas

NCAs are designated by Congress to "… conserve, protect, enhance, and manage public lands for the enjoyment of present and future generations. NCAs offer visitors landscapes with exceptional natural, recreational, cultural, wildlife, aquatic, archaeological, paleontological, historical, educational or scientific resources" (BLM 2010c).

In the alternative route study corridors for Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, there is one NCA designated near Grand Junction, Colorado, the McInnis Canyons NCA. It consists of 123,430 acres of BLM-administered land, including the more than 75,000 acres of Black Ridge Canyons Wilderness Area. However, it is not crossed by the reference centerlines or associated rights-of-way of the alternative routes.

National Heritage Area

National heritage areas are designated by Congress. The Mormon Pioneer National Heritage Area (MPNHA) was originally designated by the State of Utah as a heritage area in 2004 with two bills: 5B72-4-209 officially designating the Mormon Pioneer Heritage Area and 53B-18-1001, 1002, which established the Mormon Pioneer Heritage Center in connection with Utah State University. This heritage area was recognized nationally as the MPNHA by the National Heritage Areas of Act of 2006, P.L. 109-338, 120 STAT.1738. The Utah Heritage Highway 89 Alliance is the managing entity for the MPNHA. The MPNHA consists of five heritage districts. The MPNHA includes six counties and multiple cities and towns. The MPNHA spans 250 miles from the town of Fairview, Utah, to the Arizona/Utah border and has outstanding examples of historical, cultural, and natural resources including architecture, heritage products, and cultural events that demonstrate the way of life of the Mormon Pioneers (Utah Heritage Highway 89 Alliance and McKinnon-Mulherin, Inc. 2009).

The Project crosses the northernmost portion of the MPNHA, in the Little Denmark District with alternative routes COUT-H and COUT-I. Impacts on the historical, cultural, and natural resources in the MPNHA are discussed in the applicable resource sections (i.e., 3.2.20) of the EIS.

National Monuments

National monuments are designated under the authority of the American Antiquities Act of 1906. The American Antiquities Act states

> That the president of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated on the lands owned or controlled by the Government of the United States to be national monuments.

The majority of national monuments today are managed by the NPS. The Dinosaur National Monument is crossed by the WYCO-B route variations discussed in Appendix F. Refer to Appendix G for further information regarding the crossing the Deerlodge Road portion of Dinosaur National Monument.

Wilderness Areas and Wilderness Study Areas

Pursuant to the Wilderness Act of 1964, federal land management agencies manage congressionally designated portions of the lands they administer as wilderness areas for protection of primitive natural landscapes that are primarily affected by natural processes. These areas allow for solitude or a primitive experience for the recreationist.

WSAs were identified for potential designation as wilderness following an inventory and study of roadless areas on BLM-administered lands. For each WSA, a final decision by Congress on whether to designate a WSA as a wilderness area or to release the area for multiple-use management is pending. Until a decision is made by Congress on whether to designate these areas, WSAs are protected from future development to maintain their suitability for potential future designation as wilderness (BLM 2013d). Table 3-220 lists the wilderness areas and WSAs in the 2-mile-wide alternative route study corridor.

TABLE 3-220
WILDERNESS AREAS AND WILDERNESS STUDY AREAS BY STATE

Wilderness Area or Wilderness Study Area	Bureau of Land Management Field Office or National Forest	Size of Designated Area (acres)	Crossed by Reference Centerline of Alternative Route	Relevant Alternative Route(s)
Wyoming				
No wilderness areas or wilderness study areas (WSAs) are in the 2-mile-wide alternative route study corridors in Wyoming.				
Colorado				
Demaree WSA	Bureau of Land Management (BLM) Grand Junction Field Office	22,500	No	All COUT BAX
Oil Spring Mountain WSA	BLM White River Field Office	17,700	No	All COUT BAX
Utah				
Mount Nebo Wilderness Area	Uinta – Wasatch – Cache National Forest	22,800	No	All COUT BAX and COUT
Mexican Mountain WSA	BLM Price Field Office	59,600	No	COUT BAX-B

Utah Reclamation Mitigation and Conservation Commission Properties

The URMCC is responsible for designing, funding, and implementing projects to offset the impacts on fish, wildlife, and related recreation resources caused by CUP and other federal reclamation projects in Utah. Several of the WMAs in Utah provide mitigation for impacts on wildlife resulting from the construction and operation of the CUP. Use of these lands for purposes other than wildlife mitigation would require concurrence from the URMCC and the FWS and would require suitable alternate mitigation. Portions of the Tabby Mountain and Currant Creek WMAs, lands owned and managed by the URMCC as mitigation commitments for the CUP, are crossed by Alternative COUT-A in Utah. WMAs are discussed in Section 3.2.15.

3.2.14.4.2 Impact Assessment and Mitigation Planning

Types of Potential Environmental Effects

Potential direct or indirect effects on congressional designations or potential congressional designations (i.e., WSAs, the suitable WSR segment) associated with construction, operation, and maintenance activities could include the following:

- Construction activities conflicting with management prescriptions for congressional designations or potential congressional designations (short-term)
- Presence of the transmission and ancillary facility conflicts with management prescriptions for congressional designations or potential congressional designations (long-term)
- Alteration of the free-flowing condition of the suitable WSR segment by construction or presence of the Project (short-term and long-term)

- Effects on the outstandingly remarkable values identified for the suitable WSR segment
- Vegetation management of transmission line corridor (e.g., right-of-way clearing) conflicts with management prescriptions for congressional designations or potential congressional designations (short-term and long-term)

Mitigation and Effects Analysis

Effects Analysis

The effects analysis for congressional designations, WSAs, and the suitable WSR segment varies from the analysis of other resources within this EIS because the high, moderate, and low criteria were not used to assess level of impacts. Instead the number of miles the Project alternative routes cross a congressional designation is presented, followed by a qualitative discussion of how this crossing may affect the management prescriptions and the values of the area. The analysis also discloses potential impacts on an agency's ability to manage these congressional designations or potential congressional designations according to their current respective management plans. For specific information regarding the impacts on resources located within a congressional designation, WSA, or suitable WSR segment crossed by an alternative route, refer to the applicable resource section (i.e., biological resources, cultural resources, etc.).

Mitigation Planning and Effectiveness

In addition to the design features of the Proposed Action for environmental protection that are part of the project description (Table 2-8), selective mitigation measures (Table 2-13) were developed to minimize adverse impacts on congressional designations, WSAs, and the suitable WSR segment.

3.2.14.5 Results

This section and MV-18a and MV-18b provides a summary of inventory and effects analysis for congressional designations, WSAs, and the suitable WSR segment crossed, which includes the affected environment and environmental consequences, for each alternative route considered.

3.2.14.5.1 No Action Alternative

If the Project was not built, the current resource conditions of a congressionally designated area, WSA, or suitable WSR segment occurring in the alternative route study corridors would remain as it presently exists.

3.2.14.5.2 Impacts Common to All Action Alternatives

There are no impacts common to all alternative routes for the Project.

3.2.14.5.3 345-kilovolt Ancillary Transmission Components

No impacts would be anticipated because there are no congressional designations, WSAs, and the suitable WSR segment located in the vicinity of the 345kV ancillary transmission components.

3.2.14.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The baseline resource inventory and the miles crossed for the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes considered are presented in Table 3-221.

TABLE 3-221
ALTERNATIVE ROUTE COMPARISON FOR CONGRESSIONALLY DESIGNATED AREAS INVENTORY DATA FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	National Park Service Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild and Scenic River (Suitable)
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	0.0	0.0	0.0
Wyoming	*141.0*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*
WYCO-C	210.0	0.0	0.0	0.0
Wyoming	*144.7*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*
WYCO-D	249.4	0.0	0.0	0.0
Wyoming	*134.9*	*0.0*	*0.0*	*0.0*
Colorado	*114.5*	*0.0*	*0.0*	*0.0*
WYCO-F	218.8	0.0	0.0	0.0
Wyoming	*153.5*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*0.0*	*0.0*

Affected Environment (Wyoming and Colorado)

The WYCO alternative routes including Alternative WYCO-B, the Agency Preferred Alternative and the Applicant Preferred Alternative, in Wyoming and Colorado do not cross any congressionally designated areas, WSAs, or suitable WSR segments.

Environmental Consequences (Wyoming and Colorado)

The WYCO alternative routes including Alternative WYCO-B, the Agency Preferred Alternative and the Applicant Preferred Alternative, in Wyoming and Colorado would not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The baseline resource inventory and the miles crossed for the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes are presented in Table 3-222.

TABLE 3-222
ALTERNATIVE ROUTE COMPARISON FOR CONGRESSIONALLY DESIGNATED AREAS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild and Scenic River (Suitable)
COUT BAX-B	279.9	0.0	*0.0*	*0.0*
Colorado	*87.0*	*0.0*	*0.0*	*0.0*
Utah	*192.9*	*0.0*	*0.0*	*0.0*
COUT BAX-C	290.4	0.0	0.0	0.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*
Utah	*203.4*	*0.0*	*0.0*	*0.0*

TABLE 3-222
ALTERNATIVE ROUTE COMPARISON FOR CONGRESSIONALLY DESIGNATED AREAS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild and Scenic River (Suitable)
COUT BAX-E	292.2	0.0	0.0	0.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*
Utah	*205.2*	*0.0*	*0.0*	*0.0*

Affected Environment (Colorado and Utah)

No congressionally designated areas, WSAs, or suitable WSR segments are crossed by the COUT BAX alternative routes in Colorado or Utah.

Environmental Consequences (Colorado and Utah)

The COUT BAX alternative routes in Colorado and Utah would not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The baseline resource inventory and the miles crossed for the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes considered are presented in Table 3-223.

TABLE 3-223
ALTERNATIVE ROUTE COMPARISON FOR CONGRESSIONALLY DESIGNATED AREAS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild and Scenic River (Suitable)
COUT-A	207.9	0.0	4.3	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*0.0*	*4.3*	*0.0*
COUT-B	218.2	0.0	0.0	0.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*0.0*	*0.0*	*0.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	0.0	0.0	0.8
Colorado	*25.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*0.0*	*0.0*	*0.8*
COUT-H	200.6	0.0	0.0	0.8
Colorado	*25.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*0.0*	*0.0*	*0.8*
COUT-I	240.2	0.0	0.0	0.8
Colorado	*25.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*0.0*	*0.0*	*0.8*

Alternative COUT-A

Affected Environment (Colorado)

Alternative COUT-A in Colorado does not cross any congressional designations.

Environmental Consequences (Colorado)

Alternative COUT-A in Colorado does not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Affected Environment (Utah)

Alternative COUT-A in Utah crosses the URMCC Property for 4.3 miles.

Environmental Consequences (Utah)

Alternative COUT-A in Utah crosses a total of 4.3 miles of URMCC lands managed for wildlife values, including sage-grouse habitat and big game winter range with portions of Currant Creek WMA also being managed by the URMCC. Although these managed lands do not necessarily preclude development, including overhead transmission, these areas should be considered avoidance areas for tower placement pending further direction from the URMCC in regards to specific mitigation and terms of the license agreement that would be required for Alternative COUT-A to cross these lands. For more information regarding WMAs, refer to Section 3.2.15.

Alternative COUT-B

Affected Environment (Colorado)

Alternative COUT-B in Colorado does not cross any congressional designations.

Environmental Consequences (Colorado)

Alternative COUT-B in Colorado does not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Affected Environment (Utah)

Alternative COUT-B in Utah does not cross any congressional designations.

Environmental Consequences (Utah)

Alternative COUT-B in Utah does not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-C in Colorado does not cross any congressional designations.

Environmental Consequences (Colorado)

Alternative COUT-C in Colorado would have no effects on congressional designations.

Affected Environment (Utah)

Alternative COUT-C in Utah crosses the Lower Green River Suitable WSR segment, tentatively classified as scenic, in the BLM Vernal Field Office for 0.8 mile within a one-mile-wide utility corridor (near Fourmile Bottom) designated in the Vernal RMP.

The visual setting of the Lower Green River suitable segment is described in the Vernal RMP as having very few intrusions that are visible from the river. Oil and gas wells can be seen near Parget Draw. Roads access the river corridor at Parget Draw, near Willow Creek, Moon Bottom, Four Mile Draw, Nine Mile Creek, and both sides of the river at Sand Wash (BLM 2008h). Currently, there are two buried natural gas pipelines in the designated utility corridor near Fourmile Bottom.

Two outstandingly remarkable values are identified in the Vernal RMP for this 29.6 mile segment: (1) recreational opportunities for fishing, hunting, waterfowl viewing, floating, camping, and canoeing in an attractive pastoral setting; and (2) fish values for two endangered fish species– the humpback chub and the Colorado squawfish (BLM 2008h).

Access to the portion of the Lower Green River in the utility corridor occurs from a series of unimproved put-ins to the north or from the White River. The portion of the suitable river segment crossed by the utility corridor and Alternative COUT-C is located approximately 10 miles upstream of the Sand Wash Ranger Station where recreationists access Desolation Canyon, a popular white-water rafting and floating area on a segment of the Green River requiring access permits. The portion of the Lower Green River suitable segment in the Fourmile Bottom utility corridor is not located on a segment of the river requiring permits for noncommercial use. The river character in this segment is flat; thus, the segment receives very low visitation. Per the American Whitewater National Inventory (2015), "there are no rapids from Ouray [the start of the segment] to about 15 miles past Sand Wash, so most river trips start at Sand Wash rather than Ouray. Still, if one has the time, enjoys slow floats with occasional views of oil derricks, and likes to watch the landscape change, it can be nice to launch near Ouray."

Environmental Consequences (Utah)

Alternative COUT-C in Utah crosses the Lower Green River suitable WSR for 0.8 mile within the 1-mile-wide utility corridor designated in the Vernal RMP. Short-term effects from the alternative route crossing the suitable WSR could include increased noise and dust; increased activity along both sides of the river disturbing recreation users, and could affect recreational access to the river during construction in the Project area. No new access routes would be constructed within 0.25 mile from the bank on each side of the river.

The Project would not alter the river's free-flowing condition. Also, the outstandingly remarkable values described for recreational opportunities and fish would not be directly affected by the Project. The Project would affect the view and experience of recreational users traveling on the river (i.e., rafting, canoeing) but would not hinder opportunities for fishing, hunting, waterfowl viewing, floating, and camping. If the Project were constructed in the utility corridor near Fourmile Bottom, a recreationist's viewshed while rafting or canoeing would begin to be influenced by the conductors spanning the river as the recreationists floated southbound (or downstream) past Moon Bottom, approximately 2.5 miles upstream from the location where the Project crosses the river. Continuing to the south, recreationists would begin to see two skylined structures located on the east bank (shown on the visual simulation from key observation point [KOP] #203 in Appendix N), which would increasingly dominate views up to the location where the Project crosses the river. As a recreationist approaches the proposed crossing of the Lower Green River, the tower structures would be skylined on either side of the river with conductors spanning approximately 2,700 feet across the river. Continuing past the location where the Project crosses the river, views of the Project would diminish until passing Fourmile Bottom where topography would begin to screen the

structures from view approximately 0.75 mile past Fourmile Bottom except for views directly upriver where skylined structures would be visible up to Hydes Bottom (1.25 miles past Fourmile Bottom). For a discussion of compliance with BLM visual resource Management (VRM) objectives associated with this area, refer to Section 3.2.18. For a discussion of effects on the recreational setting, refer to Section 3.2.12. No impacts on the fish outstandingly remarkable value would be anticipated (refer to Section 3.2.10).

Placement of any Project components across the Lower Green River suitable segment would be micro-sited prior to construction in coordination with BLM to minimize surface or visual disturbances from towers or other facilities and to minimize impacts on sensitive plant species (refer to Section 3.2.6); recreation setting (refer to Section 3.2.12); the visual environment (refer to Section 3.2.18); and other natural and cultural resource values. Other selective mitigation measures that would be applied include minimizing ground disturbance associated with construction and maximizing the span length between transmission line structures at the river crossing to reduce their dominance within the Lower Green River viewshed to the extent that is technically feasible. These measures include limiting the construction of new access roads within view of the river and positioning the transmission line structures where they would less visible from the river to the extent practicable.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same impacts on congressional designations as Alternative COUT-C.

Alternative COUT-H

Affected Environment (Colorado)

Alternative COUT-H in Colorado does not cross any congressional designations.

Environmental Consequences (Colorado)

Alternative COUT-H in Colorado does not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Affected Environment (Utah)

Alternative COUT-H in Utah crosses the Lower Green River Suitable WSR segment in the BLM Vernal Field Office for 0.8 mile in the one-mile–wide designated utility corridor near Fourmile Bottom.

Environmental Consequences (Utah)

Alternative COUT-H in Utah would have the same effects as described for Alternative COUT-C where the reference centerline crosses the Lower Green River suitable WSR.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same impacts on congressional designations as Alternative COUT-C.

Alternative COUT-I

Affected Environment (Colorado)

Alternative COUT-I in Colorado does not cross any congressionally designated areas, WSAs, or suitable WSR segments.

Environmental Consequences (Colorado)

Alternative COUT-I in Colorado does not affect any congressionally designated areas, WSAs, or suitable WSR segments.

Affected Environment (Utah)

Alternative COUT-I in Utah crosses the Lower Green River Suitable WSR segment in the BLM Vernal Field Office for 0.8 miles within the one-mile-wide designated utility corridor near Fourmile Bottom.

Environmental Consequences (Utah)

Alternative COUT-I in Utah would have the same effects as described for Alternatives COUT-C and COUT-H where the reference centerline crosses the Lower Green River Suitable WSR.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same impacts on congressional designations as Alternative COUT-C.

3.2.14.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

WYCO Alternative Routes

Siting Area A – Powder Wash

Affected Environment

There are no congressionally designated areas, WSAs, or suitable WSR segments in Siting Area A.

Environmental Consequences

No effects on congressionally designated areas, WSAs, or suitable WSR segments in Siting Area A would be anticipated.

Siting Area B – Nine Mile Basin

Affected Environment

There are no congressionally designated areas, WSAs, or suitable WSR segments in Siting Area B.

Environmental Consequences

No effects on congressionally designated areas, WSAs, or suitable WSR segments in Siting Area B would be anticipated.

Siting Area C – Maybell

Affected Environment

Deerlodge Road (part of Dinosaur National Monument) is located in the southern portion of Siting Area C.

Environmental Consequences

It is assumed the specific location identified for the series compensation station associated with Alternative WYCO-B, the Agency Preferred Alternative and Applicant Preferred Alternative, would be

located outside of the Deerlodge Road easement (part of Dinosaur National Monument) because these areas preclude utility development. No direct or indirect effects on these areas would be anticipated.

COUT BAX Alternative Routes

Siting Area G – Green River

Affected Environment

There are no congressionally designated areas, WSAs, or suitable WSR segments in Siting Area G.

Environmental Consequences

There are no effects on congressionally designated areas, WSAs, or suitable WSR segments in Siting Area G.

COUT Alternative Routes

Siting Area F – Roosevelt

Affected Environment

There are no congressionally designated areas, WSAs, or suitable WSR segments in Siting Area F.

Environmental Consequences

No effects on congressionally designated areas, WSAs, or suitable WSR segments in Siting Area F would be anticipated.

Siting Area E – Bonanza

Affected Environment

There are no congressionally designated areas, WSAs, or suitable WSR segments in Siting Area E.

Environmental Consequences

No effects on congressionally designated areas, WSAs, or suitable WSR segments in Siting Area E would be anticipated.

3.2.15 Special Designations and Other Management Areas

3.2.15.1 Introduction and Regulatory Framework

Special designations and other management areas are lands managed by federal or state agencies to protect values and land uses unique to an area. These areas require more intensive management emphasis than is applied to surrounding public lands. Special designation areas are administratively designated. Administrative designations include ACEC and Wild Horse Herd Management Areas (WHHMA). Special designations are created to protect values and land uses unique to an area, which typically require a more intensive management emphasis than is applied to surrounding public land.

Other management areas discussed in this section include designations administered and managed by state natural resource and wildlife departments. These entities include missions to protect habitat, recreation opportunities, and provide educational opportunities. The other management areas include WHMA, Colorado state wildlife areas (SWA), and Utah WMAs. Also, conservation easements,

preservation areas, and LWCF sites are addressed in the section. These areas are designated to protect certain features, such as vegetation or habitat, in a legally binding document.

Congressionally designated areas are described in Section 3.2.14; non-WSA lands with wilderness characteristics (hereafter, lands with wilderness characteristics) are described in Section 3.2.16 and IRAs and Unroaded and Undeveloped Areas are described in Section 3.2.17.

3.2.15.1.1 Regulatory Framework

The management plans (and plan amendments) relevant to the Project area are discussed in Section 1.7.3. State plans and Federal regulations applicable to the state managed lands in the Project area are discussed below. A federal report and specific laws related to special designation areas in alternative route study corridors are located in Section 3.2.15.4 under each special designation and other management area heading and description.

National Park Service

- Land and Water Conservation Fund Sites, Land and Water Conservation Fund Annual Report (2011) details how the LWCF State and Local Assistance Program provided the public with outdoor recreation opportunities in the 2011 fiscal year.

State

Wyoming

- Access to Wyoming's Wildlife, Wildlife Habitat Management Areas guide (2010) provides information regarding what each WHMA was designated for and the allowable activities and developed facilities at each of these areas. The regulations in this guide were established to protect WGFD Commission property, provide responsible use of public access areas, and reduce disturbance to wildlife.

Colorado

- Colorado Parks and Wildlife, Colorado State Wildlife Areas guide (2011 to 2012) provides information about the SWAs and state fish units in Colorado. It includes guidelines for use and descriptions and maps of the designated area.

Utah

- Utah Division of Wildlife Resources, Access to Wildlife Lands in Utah guide (2002) provides details on the WMAs throughout Utah, including descriptions of the WMAs, available activities, rules for use, and maps of the sites.

3.2.15.2 Issues Identified for Analysis

During scoping, potential issues were identified by both the public and the agencies in relation to special designations. Table 3-224 outlines the issues raised, provides context, and identifies the relevant alternative routes. In addition to issues raised by the public and agencies during scoping, other issues that were identified during the data inventory are identified below.

TABLE 3-224
SPECIAL DESIGNATIONS AND OTHER
MANAGEMENT AREA ISSUES IDENTIFIED FOR ANALYSIS

Issue	Concern	Relevant Document Section	Relevant Alternative Routes
Potential conflicts with Areas of Critical Environmental Concern (ACECs)	Compliance with management prescriptions in relevant Bureau of Land Management (BLM) management plans (i.e., avoidance or exclusion areas for utility rights-of-way; e.g., Big Hole ACEC, Lower Green River Corridor ACEC)	Refer to Section 3.2.15.4.1; subheading Areas of Critical Environmental Concern	All COUT-BAX, COUT-C, COUT-H, COUT-I
Potential conflicts with Land and Water Conservation Fund Sites	Avoidance areas for rights-of-way	Refer to Section 3.2.15.4.1, subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	All WYCO and COUT-BAX
Potential conflicts with existing and future conservation and environmental easements and National Conservation Areas	Exclusion areas for rights-of-way and/or requiring permission for a right-of-way to cross (e.g., Tuttle Ranch Conservation Easement and North Moroni Conservation Easement)	Refer to Section 3.2.15.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	All WYCO, COUT-BAX, and COUT
Potential conflicts with right-of-way exclusion and avoidance areas	Compliance with management prescriptions in relevant BLM management plans	Refer to Section 3.2.15.4.1; information for the different special designations and other management areas provided in subsections for each special designation	All WYCO, COUT-BAX, and COUT
Potential conflicts with Wild Horse Herd Management Area	May require federal plan amendment to cross if management prescriptions do not provide for utility rights-of-way	Refer to Section 3.2.15.4.1, subheading Wild Horse Herd Management Area	WYCO-B, WYCO-C, WYCO-F, all COUT BAX
Wyoming			
Potential conflicts with crossing the Red Rim/Daley and other Wildlife Habitat Management Areas (WHMA)	Compliance with management prescriptions in relevant management plans; could require formal permission from the Wyoming Game and Fish Commission in the form of a right-of-way, easement, special-use agreement, or other similar mechanism to cross the WHMA	Refer to Section 3.2.15.4.1; subheading Wyoming WHMAs, Colorado State Wildlife Areas (SWA), and Utah Wildlife Management Areas (WMA)	All WYCO

TABLE 3-224
SPECIAL DESIGNATIONS AND OTHER
MANAGEMENT AREA ISSUES IDENTIFIED FOR ANALYSIS

Issue	Concern	Relevant Document Section	Relevant Alternative Routes
Colorado			
Potential conflict with Cross Mountain Ranch Conservation Easement	Precluding future rights-of-way from crossing conservation easement	Refer to Section 3.2.15.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	All WYCO
Potential conflicts with SWAs	Specific mitigation or avoidance may be necessary depending on rationale for designation; specific segments include Bitterbrush and Yampa River SWAs	Refer to Section 3.2.15.4.1; subheading Wyoming WHMAs, Colorado SWAs, and Utah WMAs	WYCO-D
Utah			
Potential conflict with the Allan Smith-Deep Creek Investment Conservation Easement and Grassland Reserve Program area	Precluding or restricting future right-of-ways from crossing lands	Refer to Section 3.2.15.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	COUT-A
Potential conflict with Crawford Farm Conservation Easement	Precluding future rights-of-way from crossing conservation easement	Refer to Section 3.2.15.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	COUT-BAX-E, COUT-H
Potential conflict with Nuttall Farm Conservation Easement	Precluding future rights-of-way from crossing conservation easement	Refer to Section 3.2.15.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	COUT-BAX-E, COUT-H
Potential conflict with Ioka Nature Conservancy Preservation property	Crossing property would require mitigation of flowers penstemon	Refer to Section 3.2.15.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	COUT-B, COUT-C

TABLE 3-224
SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREA ISSUES IDENTIFIED FOR ANALYSIS

Issue	Concern	Relevant Document Section	Relevant Alternative Routes
Potential conflicts with Utah WMA	Utah Division of Wildlife Resources (UDWR) lacks the authority to issue a right-of-way on the property until the federal agency amends their existing grant agreement with UDWR, since federal funding was used to purchase these areas. The different federal agencies involved with the WMAs would tier to this Environmental Impact Statement to support a decision to amend existing grant agreements, allowing UDWR to issue the needed rights-of-way.	Refer to Section 3.2.15.4.1; Wyoming WHMAs, Colorado SWAs, and Utah WMAs	All COUT BAX and COUT

3.2.15.3 Regional Setting

There are several different special designations and other management areas that occur in the alternative route study corridor. This includes (by state), 1 WHHMA, 1 LWCF site, and 2 WHMAs in Wyoming; 5 ACECs, 2 SWAs, 1 WHHMA, 4 LWCF sites, and 2 conservation easements in Colorado; 6 ACECs, 1 research natural area (RNA), 1 WHHMA, 8 conservation easements, 2 Nature Conservancy properties, and 15 WMAs in Utah. These special designations and other management areas have been designated to protect natural, biological, and cultural resources in addition to providing recreational opportunities and experiences.

3.2.15.4 Study Methodology

3.2.15.4.1 Inventory

Special designation and other management area information was gathered from secondary data sources, including BLM and USFS management plans, and data received or downloaded from federal, state, and local agencies. This information was reviewed for specific management prescriptions pertaining to linear energy facility development and rights-of-way authorizations. The inventory identified special designations located in the alternative route study corridors; however, only those special designations crossed (i.e., crossed or paralleled by the Project reference centerline) are discussed and analyzed in detail. The following section and MV-18a and MV-18b includes information on the special designation and other management areas identified in the alternative route study corridors. The biological resources sections (Sections 3.2.5 through 3.2.10) and the visual resource and cultural resource sections (Sections 3.2.18 and 3.2.20, respectively) also discuss special designation and other management areas. This section identifies special designations in the 2-mile-wide alternative route study corridors. Specific management prescriptions are identified for these areas, including avoidance or exclusion of some activities or uses (i.e., right-of-way leases or grants).

Management Areas

Areas of Critical Environmental Concern

According to the FLPMA, ACECs are "…areas within the public land where special management attention is required (where such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources, or other natural systems or processes; or to protect life/provide safety from natural hazards".

Table 3-225 lists the ACECs in the alternative route study corridors and the relevant and important values and management prescriptions for each area.

TABLE 3-225
AREAS OF CRITICAL ENVIRONMENTAL CONCERN BY STATE

Name of Area of Critical Environmental Concern	Relevant and Important Values	Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes
Wyoming			
There are no Areas of Critical Environmental Concern (ACEC) in the alternative route study corridors in Wyoming.			
Colorado			
Bureau of Land Management Grand Junction Field Office			
Badger Wash	Sensitive plants and use for hydrologic research	Considered unsuitable for public utilities	All COUT BAX
Bureau of Land Management White River Field Office			
Oil Spring Mountain	Spruce-fir community and important biologically diverse plant communities	Avoidance area for land-use authorizations including rights-of-way	All COUT BAX
Raven Ridge	Candidate, threatened, and endangered plants; sensitive plants; and remnant vegetation associations	Exclusion area for land-use authorizations including rights-of-way	COUT-H, COUT-I
Raven Ridge Addition	Candidate, threatened, and endangered plants; sensitive plants; paleontological values; and fragile soils	Exclusion area for land-use authorizations including rights-of-way	COUT-H, COUT-I
White River Riparian	Important biologically diverse plant communities, bald eagle roosts, federally listed Colorado River squawfish below Taylor Draw Dam	Avoidance area for land-use authorizations including rights-of-way	All COUT BAX
Utah			
Bureau of Land Management Price Field Office			
Big Hole (part of the Rock Art ACEC)	Rock art site	Exclusion area for future rights-of-way	COUT BAX-B
Cottonwood Canyon (part of the Rock Art ACEC)	Rock art site	Exclusion area for future rights-of-way	COUT BAX-B
San Rafael Canyon	Scenic and vegetation values	Avoidance area for future rights-of-way	COUT BAX-B, COUT BAX-C

TABLE 3-225 AREAS OF CRITICAL ENVIRONMENTAL CONCERN BY STATE			
Name of Area of Critical Environmental Concern	**Relevant and Important Values**	**Management Prescriptions Relevant to Utility Rights-of-Way**	**Relevant Alternative Routes**
Bureau of Land Management Vernal Field Office			
Lears Canyon	Relic plant communities	Right-of-way crossings to be assessed on a case-by-case basis	COUT-C, COUT-H, COUT-I
Lower Green River Corridor	Riparian habitat and scenery	Right-of-way crossings to be assessed on a case-by-case basis	COUT-C, COUT-H, COUT-I
Nine Mile Canyon	Cultural resources, high quality scenery, and special status species	Right-of-way crossings to be assessed on a case-by-case basis	COUT-C, COUT-H, COUT-I

Research Natural Area

RNAs are designated to preserve significant natural ecosystems and their inherent processes as baseline areas to be strictly used for scientific research, passive observation and monitoring, and educational use. RNAs can be designated by various federal agencies. One RNA, called the Lance Canyon RNA, is located in the Ashley National Forest in the alternative route study corridor for Alternative COUT-B but is not crossed by this alternative route. The RNA is approximately 295 acres and consists of "stands and mixtures with mountain big sagebrush and bluebunch wheatgrass; open pinyon pine woodlands with the former as understory; mountain-mahogany with scattered Utah serviceberry shrubs; four habitat types in the Douglas-fir; and a stand of limber pine" (USFS 2012a). The RNA is an exclusion area for rights-of-way.

Wild Horse Herd Management Areas

WHHMAs are designated in 10 western states to protect and preserve the herds of wild horses roaming public lands. Herd areas include those where wild horses were located when the Wild Free-Roaming Horses and Burros Act of 1971 was enacted (BLM 2014a). WHHMAs are locations where populations of wild horses are being managed for appropriate herd numbers. There are three WHHMAs occurring in the alternative route study corridors. Information about the WHHMAs is presented in Table 3-226.

TABLE 3-226 WILD HORSE HERD MANAGEMENT AREA BY STATE			
Wild Horse Herd Management Area	**Herd Management Level**	**Management Prescriptions Relevant to Utility Rights-of-Way**	**Relevant Alternative Routes**
Wyoming			
Bureau of Land Management Rawlins Field Office			
Adobe Town	Appropriate management level for unit, 700 adults before foaling and 812 after foaling	No restrictions on rights-of-way	All WYCO
Colorado			
Bureau of Land Management White River Field Office			
Piceance/East Douglas	Appropriate management level for the unit, between 135 and 235 horses	No restrictions on rights-of-way	All COUT BAX

TABLE 3-226 WILD HORSE HERD MANAGEMENT AREA BY STATE			
Wild Horse Herd Management Area	**Herd Management Level**	**Management Prescriptions Relevant to Utility Rights-of-Way**	**Relevant Alternative Routes**
Utah			
Bureau of Land Management Vernal Field Office			
Hill Creek	Field office working to remove all wild horses from this unit	No restrictions for rights-of-way	COUT-C, COUT-H; COUT-I

Conservation Easements, Preservation Areas, and Land and Water Conservation Fund Sites

In the alternative route study corridors, there are areas designated by federal or state agencies or a combination of both to protect certain sections of land with unique features or areas that have been funded using federal monies that preclude any development from crossing these lands, including overhead utilities. These include conservation easements, Grassland Reserve Program areas, and LWCF sites. In addition to these areas, the Nature Conservancy also has purchased lands to protect from future development.

Conservation easements are a voluntary, legally binding agreement with private landowners that limits certain types of uses or prevents development from taking place on a piece of property while protecting the property's ecological or open-space values. Under a conservation easement, the landowner voluntarily agrees to give up or sell certain rights, such as dividing or developing the property; and a private organization or a public agency agrees to enforce the conservation easement agreement. Since this is a legally binding agreement, the conservation easement is not revoked if the property is sold or bequeathed to an heir (Natureserve 2014). Funding for conservation easements can come from many different sources, including state agencies and private entities.

The Grassland Reserve Program is authorized by the Food Security Act of 1985, as amended, and is administered by the NRCS and Farm Service Agency. This program provides financial assistance to landowners and operators to protect eligible grazing lands, including rangeland, pastureland, shrubland and certain other lands using rental contracts or conservation easements (NRCS 2009). Participants voluntarily limit the amount of future development and crop uses on these lands. Depending on the terms of the agreement, rights-of-way may be excluded from the designated areas, especially where a conservation easement agreement also is in place.

In addition to conservation easements and Grassland Reserve Program contracts, the NPS LWCF Program provides matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities (as well as funding for shared federal land acquisition and conservation strategies). The program helps to create and maintain high quality recreation areas and facilities and stimulate nonfederal investments in protection and maintenance of recreation resources in the U.S. These areas are protected under Section 6(f)(3) of the LWCF Act, which states,

> No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only on such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

Although these sites are legally protected from development other than recreation, NPS recognizes the fact that changes in land uses may occur and make some assisted areas obsolete over time, especially in urban areas that are rapidly developing. There are several requirements that must be met for a LWCF site to go through the conversion process from a public outdoor recreation use to a non-recreation use, including evaluating all practical alternative routes to the proposed conversion and identifying property that would be reasonably equivalent in fair market property value, usefulness, and location with the final decision on the conversion being made by the NPS. This process should only be considered in situations when all other alternative routes are considered unfeasible.

In addition to the programs listed above, the Nature Conservancy also purchases lands to protect biological resources (both vegetation and wildlife). Purchasing these lands from private landowners allows these resources to be protected from future development.

Table 3-227, provides information of the conservation easements, NRCS grassland reserve program areas, LWCF sites, and nature conservancy properties in the alternative route study corridors; the managing agency; the management prescriptions for each; and the relevant alternative routes.

TABLE 3-227
CONSERVATION EASEMENTS, PRESERVATION AREAS, AND LAND AND WATER CONSERVATION SITES BY STATE

Easement or Area	Type of Easement and Managing Agency	Relevant Important Values and Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes
Wyoming			
Hanna Energy Park/Municipal Park	Land and Water Conservation Fund Site (LWCF), City of Hanna	Received federal monies in 1979 and 1984 to develop the parks; if the Project was to cross and no other alternative routes could be identified, a conversion process could be used	WYCO-D
Colorado			
Cross Mountain Ranch	Conservation Easement, Colorado Cattleman's Agricultural Land Trust	Approximately 16,069 acres in Moffat County, protecting agricultural lands, big-game habitat and migration corridors, and habitat for special status species and the greater sage-grouse; overhead transmission lines across easement lands are prohibited	All WYCO
Moffat County Road #11	LWCF, Moffat County	Received federal monies between 1967 and 1968 for acquisition of land; no development in the road easement unless all other alternative routes have been found unfeasible, then a conversion process could be utilized	WYCO-D

TABLE 3-227
CONSERVATION EASEMENTS, PRESERVATION AREAS, AND LAND AND WATER CONSERVATION SITES BY STATE

Easement or Area	Type of Easement and Managing Agency	Relevant Important Values and Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes
Tuttle Ranch Easement	Conservation Easement, Colorado Parks and Wildlife	Approximately 15,000 acres in Moffat County, including white-tailed prairie dog complex to allow for black-footed ferret reintroduction and conservation of sage-grouse leks; overhead transmission lines across easement lands are prohibited unless approved by the State of Colorado	All WYCO
White River Recreation Area	LWCF site, Rio Blanco County	Area of the White River that allows for canoeing, rafting, and limited kayaking; also allows for camping, biking, climbing, fishing, hiking, hunting, and wildlife viewing along the banks; federal monies used to develop the area; no development allowed in the recreation area unless all other alternative routes considered are determined to be unfeasible (then a conversion process could be used)	All COUT BAX
Yampa River Park	LWCF site, Moffat County	Access point to the Yampa River located in the Yampa River Recreation Area that allows for fishing and boating opportunities; federal monies provided to Moffat County for development of recreation area; since this is a LWCF site, no development is allowed unless all other alternative routes considered are determined to be unfeasible (then a conversion process could be used)	WYCO-D
Yampa River Recreation Area	LWCF site, Moffat County	The recreation area is in portions of the Yampa River managed for fishing and boating opportunities; federal monies provided to Moffat County for development of recreation area; since this is a LWCF site, no development is allowed in the recreation area unless all other alternative routes considered are determined to be unfeasible (then a conversion process could be used)	All WYCO

TABLE 3-227
CONSERVATION EASEMENTS, PRESERVATION AREAS, AND LAND AND WATER CONSERVATION SITES BY STATE

Easement or Area	Type of Easement and Managing Agency	Relevant Important Values and Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes
Utah			
Allan Smith-Deep Creek Investment Conservation Easements and Grassland Reserve Program Area	Conservation Easement; State of Utah, Utah Department of Natural Resources, Utah Division of Wildlife Resources (UDWR), and Utah Natural Resources Conservation Service	Designated to protect grasslands, open space, crucial wintering area for deer and elk, sage-grouse habitat, and other natural characteristics of the property; linear utilities are precluded from crossing the conservation easement	COUT-A
Crawford Farm	Conservation Easement; UDWR	Designated to protect Columbia spotted frog habitat and to prevent any uses that may harm natural open space and ranching conditions on the property; linear utilities precluded from crossing the conservation easement	COUT BAX-E, COUT-H
Hilltop	Conservation Easement; UDWR	Designated to protect Tidestrom penstemon, the natural habitat of the San Pitch River watershed and ecosystem; all new linear utilities are prohibited from crossing the conservation easement; if new utilities are approved, they will be buried and the disturbed area reclaimed and mitigation for the flowers penstemon would be required	COUT BAX-E, COUT-H
Ioka Nature Conservancy Property	Preservation Area; The Nature Conservancy	Purchased property from private landowner to protect rare flowers penstemon populations; if crossed, mitigation for the Flowers penstemon would be required	COUT-A, COUT-B
Lasson Family	Conservation Easement; UDWR	Purchased to protect big game winter range adjacent to the Spencer Fork Unit wildlife management area	COUT-A, COUT-B, COUT-C
North Moroni Conservation Easement	Conservation Easement; UDWR	Designated to protect crucial deer and elk winter range; written approval from the Grantee is required for a right-of-way or easement to cross the property	COUT BAX-B, COUT BAX-C, COUT-I

TABLE 3-227
CONSERVATION EASEMENTS, PRESERVATION AREAS, AND LAND AND WATER CONSERVATION SITES BY STATE

Easement or Area	Type of Easement and Managing Agency	Relevant Important Values and Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes
Nuttall Farm	Conservation Easement; UDWR	Designated to retain natural, scenic, wetland and agricultural conditions and to prevent any use from affecting the conservation values of the property, including potential Columbia spotted frog and northern leopard frog species, as well as the southern leatherside chub and rare native fish; linear utilities precluded from crossing the conservation easement	COUT BAX-E, COUT-H
Sandwash/Sinkdraw	Conservation Easement; UDWR	Designated to protect grasslands, open space, crucial wintering areas for deer and elk, sage-grouse habitat, and other natural characteristics of the property; linear utilities are precluded from crossing the conservation easement	COUT-A
The Starvation Canyon Nature Conservancy Property	Preservation Area; The Nature Conservancy	Purchased to protect clay phacelia habitat; new rights-of-way are not permitted unless the project is a Utah Power & Light Company (Rocky Mountain Power) project	COUT-B, COUT-C

Wyoming Wildlife Habitat Management Areas, Colorado State Wildlife Areas, and Utah Wildlife Management Areas

WHMAs, SWAs, and WMAs can be managed by federal, state, or a combination of both governments. These areas are designated to manage and protect habitats for wildlife and to allow for the public to use in a recreational or educational manner.

WHMAs were established cooperatively between the BLM and the Wyoming Game and Fish Commission, which under Title 23 directs the Wyoming Game and Fish Commission to "provide an adequate and flexible system for control, propagation, management protection, and regulation of all Wyoming wildlife" (23-1-103) (WGFD 2009b). The management of wildlife is contingent on working in partnership with private landowners and public land managers. Public lands in WHMAs are established and managed through the RMP process by the BLM. The WGFD also works with the Wyoming Game and Fish Commission to manage habitat areas by providing regulations to users for responsible use of public access areas and to reduce the disturbance to wildlife.

In Colorado, the CPW department manages more than 300 SWAs totaling more than 550,000 acres. The SWAs not only protect wildlife habitat but also provide the public with opportunities to hunt, fish, and watch wildlife (CPW 2012l). These lands are paid for by revenue generated from fees paid by sportsmen.

WMAs in Utah are managed by the UDWR. There are more than 100 WMAs in Utah and each was established to meet at least one of the four primary objectives identified by the UDWR, listed below:

- Provide nesting and migration habitats for waterfowl
- Secure and enhance critical foothill habitat for wintering big game
- Preserve fish and wildlife habitat along important stream corridors
- Provide access for fish and wildlife enthusiast

Most of these areas are open to the public to be used for wildlife-oriented activities such as fishing and hunting (UDWR 2002). WMAs were acquired as mitigation for natural resource areas removed for federal water development projects, or purchased using federal aid funding to protect natural resources, so property is bound by agreement. UDWR lacks authority to issue a right-of-way on the property until the federal agency amends their existing grant agreement with UDWR. If approved by the BLM and USFS, the FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region), the URMCC, and/or the USBR (Upper Colorado Region) could tier to this EIS to support a decision to amend existing grant agreements, allowing UDWR to issue the needed rights-of-way. Provisions of UAC R657-28, Use of Division Lands, also would continue to apply.

Table 3-228 provides information on the Wyoming WHMAs, Colorado SWAs, and Utah WMAs in the alternative route study corridors.

TABLE 3-228
WILDLIFE HABITAT MANAGEMENT AREAS, STATE WILDLIFE AREAS, AND WILDLIFE MANAGEMENT AREAS BY STATE

Management Area (acres)	Description and Relevant Values	Management Prescriptions Relevant to Utility Rights-of-way	Relevant Alternative Routes
Wyoming – Wildlife Habitat Management Areas			
Bureau of Land Management and Wyoming Game and Fish Department			
Upper Muddy Creek Watershed/ Grizzly Wildlife Habitat Management Area (WHMA) (59,720)	Habitat for Colorado River fish species unique to the Muddy Creek watershed and crucial winter habitat for elk and mule deer	Managed by both Wyoming Game and Fish and the Bureau of Land Management (BLM) Rawlins Field Office; per the BLM Rawlins Resource Management Plan; an avoidance area for linear utilities; crossing the WHMA requires formal permission from the Wyoming Game and Fish Commission in the form of a right-of-way, easement, special-use agreement, or other similar mechanism	WYCO-D
Red Rim-Daley WHMA (11,100)	Crucial winter habitat for pronghorn and nesting habitat for raptors	Ground-disturbing and disruptive activities strictly managed per the BLM Rawlins Resource Management Plan; crossing this WHMA requires the same formal permission as the Upper Muddy Creek/Grizzly wildlife habitat management area	All WYCO
Colorado – State Wildlife Areas			
Colorado Parks and Wildlife			
Bitterbrush State Wildlife Area (SWA) (8,057)	Provides opportunities for hunting mule deer, elk, and pronghorn and wildlife viewing	Strongly discourages activities that conflict with the primary mission of this area (providing wildlife recreation opportunities)	WYCO-D

TABLE 3-228
WILDLIFE HABITAT MANAGEMENT AREAS, STATE WILDLIFE AREAS, AND WILDLIFE MANAGEMENT AREAS BY STATE

Management Area (acres)	Description and Relevant Values	Management Prescriptions Relevant to Utility Rights-of-way	Relevant Alternative Routes
Yampa River SWA (850)	Provides opportunities for hunting mule deer, elk, and waterfowl; fishing; hiking; and wildlife viewing	Same management prescription as the Bitterbrush SWA	WYCO-D
Utah – Wildlife Management Areas			
Utah Division of Wildlife Resources[1]			
Birdseye/Lake Fork Wildlife Management Area (WMA) (3,750)	Big game winter range and to protect federally listed threatened Deseret milkvetch population	Acquired using federal funds creating an agreement between U.S. Fish and Wildlife Service (FWS) and Utah Division of Wildlife Resources (UDWR); to cross the WMA, a modification of the agreement would be required[1]	COUT-A, COUT-B, COUT-C
Burraston Ponds WMA (180)	Donated for use as a fish production area; provides unique fish and wildlife values, and available for upland game hunting (pheasants and doves)	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required[1]	All COUT BAX and COUT
Cottonwood Canyon WMA (6,700)	Part of the Indian Canyon WMA; made up of three sub-units acquired for big game winter range and to increase public access in an area of predominately private land	Acquired using federal funds creating an agreement between FWS and UDWR; or cross the WMA, a modification of the agreement would be required[1]	COUT-B
Currant Creek WMA (21,400)	Made up of two sub-units acquired as mitigation for wildlife habitat lost during construction of the Central Utah Project (CUP) water developments; has angler access and aquatic/ terrestrial habitat protections	Require concurrence from the Utah Reclamation Mitigation and Conservation Commission (URMCC); any impacts on these CUP mitigation properties could require additional mitigation by the URMCC, UDWR and FWS[1]	COUT-A
Dairy Fork WMA (4,900)	Part of the Northwest Manti WMA; acquired to preserve and enhance deer and elk winter range	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required[1]	COUT-A, COUT-B, COUT-C

TABLE 3-228
WILDLIFE HABITAT MANAGEMENT AREAS, STATE WILDLIFE AREAS, AND WILDLIFE MANAGEMENT AREAS BY STATE

Management Area (acres)	Description and Relevant Values	Management Prescriptions Relevant to Utility Rights-of-way	Relevant Alternative Routes
Fountain Green WMA (360)	Part of the North Nebo WMA; the Fountain Green Farm managed under a lease agreement to reserve forage for big game so to prevent them from feeding on adjacent farms and to improve upland game habitat	Acquired using Wildlife Restoration Act federal aid creating an agreement between FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) and UDWR[1]	All COUT BAX; COUT-H, COUT-I
Gordon Creek WMA (22,600)	UDWR, BLM, Utah State Institutional Trust Lands and private property; managed to protect critical big game winter range	Acquired using federal funds creating an agreement between FWS and UDWR; portions donated to UDWR as part of an agreement with the BLM per the authority of the Recreation and Public Purposes Act; to cross the WMA, a modification of these agreements would be required	COUT BAX-E; COUT-H
Nephi WMA (152)	Provides upland game habitat by supporting riparian habitat and patches of emergent marsh	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required[1]	All COUT BAX and COUT
Rabbit Gulch WMA (two parcels, 8,247 and 1,160 acres)	Part of the Tabby Mountain WMA; provides critical range for big game animal survival in winter	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required[1]	COUT-A
Salt Creek WMA (5,254)	Important nesting, resting, and feeding habitat for waterfowl	Acquired using Wildlife Restoration Act federal aid creating an agreement between FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) and UDWR[1]	All COUT BAX and COUT
Spencer Fork WMA (6,500)	Part of the North Nebo WMA; acquired to protect big game winter range; an additional 803 acres of private land in Losty Canyon being protected with a conservation easement since 1999	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required[1]	COUT-A, COUT-B
Starvation WMA (5,700)	Part of Northwest Manti WMA; acquired to protect and enhance deer and elk winter range	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required[1]	COUT-B, COUT-C

TABLE 3-228
WILDLIFE HABITAT MANAGEMENT AREAS, STATE WILDLIFE AREAS, AND WILDLIFE MANAGEMENT AREAS BY STATE

Management Area (acres)	Description and Relevant Values	Management Prescriptions Relevant to Utility Rights-of-way	Relevant Alternative Routes
Strawberry River WMA (3,070)	Acquired as mitigation for CUP with the help of the Nature Conservancy; The middle portion of the Strawberry River in the Strawberry River WMA is a Blue Ribbon trout stream in an area that is primitive in nature with just a trail that allows fisherman to reach the river by foot; area is only open for day use	Prohibits construction of new roads and limits all vehicle use to existing roads and designated parking areas; any additional improvements or developments in the areas should be minimal and impacts on wildlife habitat because of increased recreation use should be minimized; Owned by the Bureau of Reclamation, under the authority/responsibility of the URMCC who manages it with UDWR; Use of federally owned lands under the administration of the URMCC and managed as part of the Strawberry River WMA would require a license agreement; alternate mitigation would need to be identified in consultation with the URMCC, FWS, and UDWR, implementation of which would be a condition for approval of the license agreement if the Project crosses this WMA	COUT-A
Tabby Mountain WMA (51,432)	Split into two units, Tabby Mountain and Rabbit Gulch; managed to protect critical winter range for big game	Use of federally owned lands under the administration of the URMCC and managed as part of the Tabby Mountain WMA require a license agreement; alternate mitigation would need to be identified in consultation with the URMCC, FWS and UDWR, implementation of which would be a condition for approval of the license agreement if the Project crosses the WMA	COUT-A
Triangle Ranch WMA (2,880)	Part of the South Nebo WMA and includes Salt Creek WMA parcels; managed to protect big game winter range	Acquired using federal funds creating an agreement between FWS and UDWR; to cross the WMA, a modification of the agreement would be required.[1]	All COUT BAX and COUT

NOTE: [1]WMA was acquired using federal aid funding either for mitigation for a federal water development or protect resources, so property is bound by agreement. UDWR lacks authority to issue a right-of-way on the property until the FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR.

3.2.15.4.2 Impact Assessment and Mitigation Planning

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project would result in both direct and indirect adverse effects on special designation and other management areas. Direct effects associated with construction, operation, and maintenance activities could include the following:

- Construction activities conflict with management prescriptions (short-term)
- Presence of the transmission and ancillary facility conflicts with management prescriptions for a designation (long-term)
- Vegetation management of transmission line corridor (short-term and long-term)

Indirect effects could include potential degradation of popular WMAs on state-administered land as the result of increased access, which could preclude the ability for an area to be managed as prescribed.

Mitigation and Effects Analysis

Impact Analysis

The impact analysis for special designations and other management areas is different than other resources because high, moderate, and low were not used to assess the level of impacts as was done for most other resources. Instead a discussion of the number of miles the Project alternative routes cross special designation or other management area is presented followed by a qualitative discussion of how this crossing may affect the management prescriptions and the relevant/important values or special characteristics that would result in an agency's ability to manage these land-use designations. Each special designation or other management area is designated and managed for a specific resource, making impacts varied for each crossing. For specific information regarding the impacts on resources in a special designation or other management area crossed by an alternative route, refer to the applicable resource section (i.e., biological resources, cultural resources, etc.)

Mitigation Planning and Effectiveness

In addition to the design features of the Proposed Action for environmental protection that are part of the project description (Table 2-8), selective mitigation measures were developed to minimize adverse impacts on special designations and other management areas. However, Selective mitigation measures were applied specific to the resources being protected by the special designation or other management area (i.e., biological resources, cultural resources, etc.) instead of by the special designation or other management area boundary. By applying selective mitigation measures by resources instead of by the special designation or other management area boundary, it is less likely the implementation of selective mitigation measures will be overestimated/overstated in the EIS (i.e., applied where an alternative route crosses the special designation or management area versus only where a particular resource occurs within an area). Special designations and other management areas management prescriptions will be honored and selective mitigation measures will be applied where possible to reduce any effects to these managed areas. Refer to the applicable resource section being protected by a special designation or other management area for selective mitigation information.

3.2.15.5 Results

This section and MV-18a and MV-18b provides a summary of inventory and impact results, which includes the affected environment and environmental consequences, for each alternative route considered.

3.2.15.5.1 No Action Alternative

If the Project was not built, the current resource conditions of special designations and other management areas occurring in the alternative route study corridors would remain as it presently exists.

3.2.15.5.2 Impacts Common to All Action Alternatives

There are not any impacts common to all alternative routes for the Project.

3.2.15.5.3 345-kilovolt Ancillary Transmission Components

As no special designations and other management areas are located in the vicinity of the 345kV ancillary transmission components, no impacts would be anticipated.

3.2.15.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The baseline resource inventory and residual impacts for the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes considered are presented in Table 3-229.

TABLE 3-229
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	0.0	4.1	0.2	13.5	4.4
Wyoming	*141.0*	*0.0*	*0.0*	*0.0*	*13.5*	*4.4*
Colorado	*65.3*	*0.0*	*4.1*	*0.2*	*0.0*	*0.0*
WYCO-C	210.0	0.0	4.1	0.2	16.6	4.4
Wyoming	*144.7*	*0.0*	*0.0*	*0.0*	*16.6*	*4.4*
Colorado	*65.3*	*0.0*	*4.1*	*0.2*	*0.0*	*0.0*
WYCO-D	249.4	0.0	5.0	0.7	0.0	9.1
Wyoming	*134.9*	*0.0*	*0.0*	*0.0*	*0.0*	*5.3*
Colorado	*114.5*	*0.0*	*5.0*	*0.7*	*0.0*	*3.8*
WYCO-F	218.8	0.0	4.1	0.2	0.7	4.4
Wyoming	*153.5*	*0.0*	*0.0*	*0.0*	*0.7*	*4.4*
Colorado	*65.3*	*0.0*	*4.1*	*0.2*	*0.0*	*0.0*

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Alternative WYCO-B in Wyoming crosses the following special designations and other management areas (including miles crossed):

- Adobe Town WHHMA (13.5 miles)
- Red Rim-Daley WHMA (4.4 miles)

No other special designations or other management areas would be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Wyoming)

Alternative WYCO-C in Wyoming crosses 13.5 miles of the Adobe Town WHHMA. By minimizing new or improved access into the WHHMA and spanning or avoiding areas that the horses frequent for food, water, or shelter, potential effects would be minimal.

Alternative WYCO-B crosses 4.4 miles of Red Rim-Daley WHMA. Management prescribed for the WHMA in the BLM Rawlins Field Office RMP includes intense management of ground-disturbing and disruptive activities to maintain raptor-nesting habitat but does not preclude transmission lines from crossing the WHMA. Per the WGFD, formal permission from the Wyoming Game and Fish Commission in the form of a right-of-way, easement, special-use agreement, or other similar mechanism would be required to cross a WHMA.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado crosses the following special designations and other management areas (including miles crossed):

- Yampa River Recreation Area LWCF site (0.2 mile)
- Tuttle Ranch Conservation Easement (3.0 miles)
- Cross Mountain Ranch Conservation Easement (1.1 miles)

Miles of the Tuttle Ranch and Cross Mountain Ranch conservation easements crossed by route variations considered for Alternative WYCO-B vary (refer to Appendix F).

No other special designations or other management areas in would be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Colorado)

Alternative WYCO-B crosses 0.2 mile of the Yampa River Recreation Area LWCF Site. The Yampa River Recreation Area was developed using federal monies and should be considered an avoidance area for tower placement. If the site could not be spanned or avoided, a conversion process could be used to place structures on the site. This process should only be used if all other options have been analyzed and determined unfeasible due to the complexity of the process.

Alternative WYCO-B in Colorado crosses 3.0 miles of the Tuttle Ranch Conservation Easement. Terms of the agreement for the Tuttle Ranch Conservation Easement prohibit building or installing any new overhead utilities, including electrical transmission lines, without approval from the State of Colorado. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.

Alternative WYCO-B crosses 1.1 miles of the Cross Mountain Ranch Conservation Easement. Terms of the agreement for the Cross Mountain Ranch Conservation Easement prohibit the granting of easements or rights-of-way for transmission. The only effective mitigation to bring the Project into compliance would be avoidance in lieu of amending the terms of the agreement.

Alternative WYCO-C

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming crosses the following special designations and other management areas (including miles crossed):

- Adobe Town WHHMA (16.6 miles)
- Red Rim-Daley WHMA (4.4 miles; the same as Alternative WYCO-B)

No other special designations or other management areas would be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Wyoming)

Alternative WYCO-C crosses 16.6 miles of the Adobe Town WHHMA. By minimizing new or improved access into the WHHMA and spanning or avoiding areas that the horses frequent for food, water or shelter, potential effects would be minimal.

Alternative WYCO-C in Wyoming shares the same alignment with Alternative WYCO-B across the Red Rim-Daley WHMA; thus, the anticipated effects would be the same.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-C in Colorado crosses the same special designations and other management areas as Alternative WYCO-B in Colorado and would have the same potential effects.

Alternative WYCO-D

Affected Environment (Wyoming)

Alternative WYCO-D crosses the following special designations and other management areas (including miles crossed):

- Red Rim-Daley WHMA (4.4 miles)
- Upper Muddy Creek Watershed/Grizzly WHMA (0.9 mile)
- Alternative WYCO-D in Wyoming does not cross the Hanna Energy Park/Municipal Park LWCF site but the site may be affected by its presence in a portion of the 2-mile-wide study corridor.
- Environmental Consequences (Wyoming)

Alternative WYCO-D in Wyoming crosses 4.4 miles of the Red Rim-Daley WHMA. Management prescribed for the Red Rim-Daley WHMA in the BLM Rawlins Field Office RMP includes intense management of ground-disturbing and disruptive activities to maintain raptor-nesting habitat; but does not preclude transmission lines from crossing the WHMA.

Alternative WYCO-D in Wyoming crosses 0.9 mile of the Upper Muddy Creek Watershed/Grizzly WHMA. The Upper Muddy Creek Watershed/Grizzly WHMA has been designated as an avoidance area for utility rights-of-way in the BLM Rawlins Field Office RMP and would require authorization from the BLM Rawlins Field Office to cross the WHMA. To cross the Muddy Creek Watershed/Grizzly WHMA, all other alternative routes must first be considered, as well as the environmental sensitivity of the area. If authorization is granted, special stipulations and mitigation would need to be met, such as minimizing clearing of the right-of-way and spanning sensitive features. Per the WGFD, formal permission from the Wyoming Game and Fish Commission in the form of a right-of-way, easement, special-use agreement, or other similar mechanism would be required to cross a WHMA managed by WGFD.

Affected Environment (Colorado)

Alternative WYCO-D in Colorado crosses the following special designations and other management areas (including miles crossed):

- Moffat County Road #11 LWCF site (0.2 mile)
- Yampa River Recreation Area LWCF site (0.5 mile)
- Bitterbrush SWA (3.8 miles)
- Tuttle Ranch Conservation Easement (3.0 miles)
- Cross Mountain Ranch Conservation Easement (2.1 miles)

Miles of the Tuttle Ranch and Cross Mountain Ranch conservation easements crossed by route variations considered for Alternative WYCO-B vary (refer to Appendix F).

Alternative WYCO-D does not cross the Yampa River SWA and Yampa River Park. However, these areas may be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Colorado)

Alternative WYCO-D crosses 0.5 miles of the Yampa River Recreation Area LWCF Site and 0.2 mile of the Moffat County Road #11 LWCF Site. Similar to Alternative WYCO-B, the Yampa River Recreation Area and Moffat County Road #11 were developed using federal monies and should be considered avoidance areas for tower placement. If the site cannot be spanned, a conversion process could be used to place structures on a site. This process should only be used if all other options have been analyzed and determined unfeasible due to the complexity of the conversion process.

Alternative WYCO-D in Colorado crosses 3.8 miles of the Bitterbrush SWA. Although the area does not preclude overhead transmission line development, CPW strongly discourages activities that conflict with the primary mission of these areas, which is providing wildlife recreation opportunities. By applying mitigation such as minimizing tree clearing, new and improved accessibility, and right-of-way clearing and spanning sensitive features to the resources affected, conflicts would be reduced in these areas. Disruptive activities may still occur during construction and maintenance of the alternative route; however, disturbance during sensitive periods will be avoided.

Alternative WYCO-D in Colorado shares the same alignment with Alternative WYCO-B across the Tuttle Ranch Conservation Easement; thus, potential effects would be the same.

Alternative WYCO-D crosses 2.1 miles of the Cross Mountain Ranch Conservation Easement. Terms of the agreement for the Cross Mountain Ranch Conservation Easement prohibit the granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.

Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F in Wyoming crosses the following special designations and other management areas similar to Alternatives WYCO-B and WYCO-C (including miles crossed):

- Adobe Town WHHMA (0.7 miles)
- Red Rim-Daley WHMA (4.4 miles; the same as Alternatives WYCO-B and WYCO-C)

No other special designations or other management areas would be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Wyoming)

Alternative WYCO-F in Wyoming shares the same alignment with Alternatives WYCO-B and WYCO-C across the Red Rim-Daley WHMA; thus, the miles crossed would be the same. Alternative WYCO-F crosses 0.7 mile of Adobe Town WHHMA.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-F in Colorado crosses the same special designations and other management areas as Alternatives WYCO-B and WYCO-C in Colorado and would have the same potential effects.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The baseline resource inventory and residual impacts for the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes are presented in Table 3-230

TABLE 3-230
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area
COUT BAX-B	279.9	0.4	0.7	0.0	0.8	1.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.8*	*0.0*
Utah	*192.9*	*0.4*	*0.7*	*0.0*	*0.0*	*1.0*
COUT BAX-C	290.4	0.0	0.7	0.0	0.8	1.0
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.8*	*0.0*
Utah	*203.4*	*0.0*	*0.7*	*0.0*	*0.0*	*1.0*
COUT BAX-E	292.2	0.0	0.6	0.0	0.8	5.8
Colorado	*87.0*	*0.0*	*0.0*	*0.0*	*0.8*	*0.0*
Utah	*205.2*	*0.0*	*0.6*	*0.0*	*0.0*	*5.8*

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B in Colorado crosses the following special designations and other management areas (including miles crossed):

- Piceance/East Douglas WHHMA (0.8 mile)

The following special designations and other management areas are not crossed by Alternative COUT BAX-B in Colorado, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- White River Recreation Area LWCF Site
- White River Riparian ACEC
- Oil Spring Mountain ACEC
- Badger Wash ACEC

Environmental Consequences (Colorado)

Alternative COUT BAX-B crosses 0.8 mile of the Piceance/East Douglas WHHMA. Minimizing new or improved access into the WHHMA would reduce the potential effects.

Affected Environment (Utah)

Alternative COUT BAX-B crosses the following special designations and other management areas (including miles crossed):

- Big Hole ACEC (0.4 mile)
- North Moroni Conservation Easement (0.7 mile)
- Fountain Green WMA (0.1 mile)
- Salt Creek WMA (0.9 mile)

The following special designations and other management areas are not crossed by Alternative COUT BAX-B in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Triangle Ranch WMA
- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

Alternative COUT BAX-B crosses. 0.4 mile of the Big Hole ACEC. This ACEC has been designated as an exclusion area for utilities to protect the rock art site(s). The only effective mitigation would be avoidance of the site by spanning or avoid the boundary.

Alternative COUT BAX-B crosses 0.7 mile of the North Moroni Conservation Easement. The purpose for the conservation easement is to protect crucial deer and elk winter range. Per the contract for the conservation easement, no rights-of-way or easements will be granted to cross the conservation easement without prior written approval from the Grantee. Alternative COUT BAX-B crosses 0.9 mile of the Fountain Green and Salt Creek WMAs. UDWR could consider allowing crossings of WMAs (following grant amendments by the responsible federal agency) if impacts could be sufficiently avoided, minimized, or compensated for. Disruptive activities may still occur during construction and maintenance of the alternative route. The Salt Creek and Fountain Green WMAs were acquired using Wildlife Restoration Act federal aid funding, making the property bound by the agreement. UDWR lacks authority to issue a right-of-way on the property until the FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR. The EIS must support this decision for an agreement to be granted.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT BAX-C in Colorado crosses and has in the 2-mile-wide study corridor the same special designations and other management areas as Alternative COUT BAX-B.

Affected Environment (Utah)

Alternative COUT BAX-C in Utah crosses the same special designations and other management areas (including miles crossed) as Alternative COUT BAX-B with the exception of Big Hole ACEC, which is not crossed by COUT BAX-C.

The following special designations and other management areas are not crossed by Alternative COUT BAX-C in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- San Rafael Canyon ACEC
- Triangle Ranch WMA
- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

North Moroni Conservation Easement, Fountain Green WMA, and Salt Creek WMA; thus, the miles crossed for these areas would be the same. Alternative COUT BAX-C does not cross Big Hole ACEC.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT BAX-E in Colorado crosses and has in the 2-mile-wide study corridor the same special designations and other management areas as Alternatives COUT BAX-B and COUT BAX-C in Colorado and would have the same potential effects.

Affected Environment (Utah)

Alternative COUT BAX-E crosses the following special designation and other management areas (including miles crossed):

- Gordon Creek WMA (4.8 miles)
- Salt Creek WMA (0.9 mile)

The following special designations and other management areas are not crossed by Alternative COUT BAX-E in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- San Rafael Canyon ACEC
- Hilltop Conservation Easement
- Fountain Green WMA
- Triangle Ranch WMA
- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site

Environmental Consequences (Utah)

Alternative COUT BAX-E in Utah crosses 5.7 miles of the Gordon Creek and Salt Creek WMAs. Although the WMAs do not preclude overhead transmission line development, the UDWR approves crossings of WMAs if a project would not unreasonably conflict with the intended use of the land or is not detrimental to wildlife or wildlife habitat and impacts can be avoided, minimized or mitigated. Disruptive activities may still occur during construction and maintenance of the alternative route.

Because the Gordon Creek WMA was partially purchased by federal aid, the applicable federal agencies would need to amend agreements for the WMA before UDWR can grant a right-of-way. Other portions of the Gordon Creek WMA were donated by to UDWR as part of an agreement with BLM per the authority of Recreation and Public Purposes Act. For UDWR to grant a right-of-way, a modification of these agreements (depending on the parcel) would need to be made. The EIS must support this decision for an agreement to be granted.

The Salt Creek WMA was acquired using Wildlife Restoration Act federal aid funding, making the property bound by the agreement. UDWR lacks authority to issue a right-of-way on the property until the FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The baseline resource inventory and residual impacts for the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes considered are presented in Table 3-231.

TABLE 3-231
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area
COUT-A	207.9	0.0	7.2	0.0	0.0	16.9
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*0.0*	*7.2*	*0.0*	*0.0*	*16.9*
COUT-B	218.2	0.0	0.0	0.0	0.0	12.0
Colorado	*24.3*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*0.0*	*0.0*	*0.0*	*0.0*	*12.0*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	0.9	0.0	0.0	0.0	10.4
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*0.9*	*0.0*	*0.0*	*0.0*	*10.4*

TABLE 3-231
ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area
COUT-H	200.6	0.9	0.6	0.0	0.0	6.2
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*0.9*	*0.6*	*0.0*	*0.0*	*6.2*
COUT-I	240.2	0.9	0.7	0.0	0.0	1.0
Colorado	*25.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*0.9*	*0.7*	*0.0*	*0.0*	*1.0*

Alternative COUT-A

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-A in Colorado does not cross any special designations or other management areas and would have the same potential effects.

Affected Environment (Utah)

Alternative COUT-A in Utah crosses the following special designations and other management areas (including miles crossed):

- Sand Wash/Sink Draw Conservation Easement (7.2 miles)
- Rabbit Gulch WMA (3.6 miles)
- Tabby Mountain WMA (1.7 miles)
- Currant Creek WMA (2.4 miles)
- Dairy Fork WMA (1.9 miles)
- Lake Fork WMA (0.8 mile)
- Birdseye WMA (1.2 miles)
- Spencer Fork WMA (4.1 miles)
- Salt Creek WMA (1.1 miles)

The following special designations and other management areas are not crossed by Alternative COUT-A in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Allan Smith-Deep Creek Investment Conservation Easement, Strawberry River WMA
- Lasson Family Conservation Easement
- Ioka Nature Conservancy preservation area
- Triangle Ranch WMA
- Nephi WMA

- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

Alternative COUT-A in Utah crosses 7.2 miles of the Sandwash/Sinkdraw conservation easement. Terms of the agreement for the Sandwash/Sinkdraw conservation easement prohibit new public and private utilities, including electric, over the conservation easement property. The installation and maintenance of underground utilities including electric may be permitted on the conservation easement property if the grantee determines that such activities will result in only temporary disturbance to the surface of the soil; are consistent with conserving and maintaining the grassland and other conservation values; and provides the grantors, in advance and in writing, approval subject to terms and conditions the grantee determines are necessary to ensure the viability of the grassland and other conservation values.

Alternative COUT-A in Utah crosses 16.9 miles of WMAs. The WMAs crossed include Rabbit Gulch WMA (3.6 miles), Tabby Mountain WMA (1.7 miles), Currant Creek WMA (2.4 miles), Dairy Fork WMA (1.9 miles), Lake Fork WMA (0.8 mile), Birdseye WMA (1.2 miles), Spencer Fork WMA (4.1 miles), and Salt Creek WMA (1.1 miles). The UDWR approves crossings of WMAs if a project would not unreasonably conflict with the intended use of the land or is not detrimental to wildlife or wildlife habitat and impacts can be avoided, minimized, or mitigated. Disruptive activities may still occur during construction and maintenance of the alternative route. The Currant Creek and Tabby Mountain WMAs were purchased with funds from the USBR and are managed by the URMCC. An amendment to the grant agreement would be required before UDWR could decide to grant a right-of-way or easement for the Project. In addition to the URMCC managed lands, WMAs that federal aid funding was used to purchase them will require the federal agencies to amend the existing agreement with the UDWR before UDWR would be allowed to issue a right-of-way on the WMA.

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-B in Colorado does not cross any special designations or other management areas and would have no potential effects.

Affected Environment (Utah)

Alternative COUT-B in Utah crosses the following special designations and other management areas (including miles crossed):

- Cottonwood WMA (1.6 miles)
- Starvation WMA (1.0 mile)
- Dairy Fork WMA (2.1 miles)
- Lake Fork WMA (0.8 mile)
- Birdseye WMA (1.2 miles)
- Spencer Fork WMA (4.1 miles)
- Salt Creek WMA (1.1 miles)

The following special designations and other management areas are not crossed by Alternative COUT-B in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Ioka Nature Conservancy preservation area
- Starvation Nature Conservancy preservation area
- Lance Canyon RNA

- Lasson Family Conservation Easement
- Triangle Ranch WMA
- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

Alternative COUT-B in Utah crosses 12.0 miles of WMAs including the Cottonwood WMA (1.6 miles), Starvation WMA (0.1 mile), Dairy Fork WMA (2.1 miles), Lake Fork WMA (0.8 mile), Birdseye WMA (1.2 miles), Spencer Fork WMA (4.1 miles), and Salt Creek WMA (1.1 miles). The UDWR approves crossings of WMAs if a project would not unreasonably conflict with the intended use of the land or is not detrimental to wildlife or wildlife habitat and impacts can be avoided, minimized or mitigated. Disruptive activities may still occur during construction and maintenance of the alternative route. The Salt Creek WMA was acquired using Wildlife Restoration Act federal aid funding, making the property bound by the agreement. UDWR lacks authority to issue a right-of-way on the property until the FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR. The EIS must support this decision for an agreement to be granted.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-C in Colorado does not cross any special designations or other management areas. However, the Badger Wash ACEC may be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Colorado)

Alternative COUT-C in Colorado would have no potential effects on special designations or other management areas.

Affected Environment (Utah)

Alternative COUT-C in Utah crosses the following special designations and other management areas (including miles crossed):

- Lower Green River Corridor ACEC in the BLM Vernal Field Office (0.9 mile)
- Starvation WMA (1.0 mile)
- Dairy Fork WMA (2.1 miles)
- Lake Fork WMA (0.8 mile)
- Birdseye WMA (1.2 miles)
- Spencer Fork WMA (4.1 miles)
- Salt Creek WMA (1.1 miles)

The following special designations and other management areas are not crossed by Alternative COUT-C in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Nine Mile ACEC
- Lears Canyon ACEC
- Lasson Family Conservation Easement, Hill Creek WHHMA
- Starvation Nature Conservancy preservation area
- Triangle Ranch WMA

- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

Alternative COUT-C crosses 0.9 mile of the Lower Green River Corridor ACEC, impacting the relevant and important values (scenery and riparian habitat) for which the ACEC was designated. Even though the alternative route is located in an area identified in the Vernal RMP for future utilities, short-term impacts from the transmission line crossing the ACEC could include increased noise and dust; increased activity along both sides of the river disturbing recreation users, and temporary closure of access routes and the river during construction. Long-term effects would be the visual dominance of the transmission structures adjacent to the river, in the ACEC that would impact the river corridor's scenery.

In addition, Alternative COUT-C in Colorado crosses 10.4 miles of WMAs, including Starvation WMA (1.0 mile), Dairy Fork WMA (2.1 miles), Lake Fork WMA (0.8 mile), Birdseye WMA (1.2 miles), Spencer Fork WMA (4.1 miles), and Salt Creek WMA (1.1 miles). The UDWR approves crossings of WMAs if a project would not unreasonably conflict with the intended use of the land or is not detrimental to wildlife or wildlife habitat and impacts can be avoided, minimized or mitigated. Disruptive activities may still occur during construction and maintenance of the alternative route. The Salt Creek WMA was acquired using Wildlife Restoration Act federal aid funding, making the property bound by the agreement. UDWR lacks authority to issue a right-of-way on the property until the FWS – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR. The EIS must support this decision for an agreement to be granted.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same affected environmental and environmental consequences for special designations and other management areas as Alternative COUT-C.

Alternative COUT-H

Affected Environment (Colorado)

Alternative COUT-H in Colorado does not cross any special designations or other management areas. However, the Badger Wash ACEC may be affected by being present in a portion of the 2-mile-wide study corridor. Environmental Consequences (Colorado)

Alternative COUT-H in Colorado would have no potential effects on special designations or other management areas.

Affected Environment (Utah)

Alternative COUT-H in Utah crosses the following special designations and other management areas (including miles crossed):

- Lower Green River Corridor ACEC in the BLM Vernal Field Office (0.9 mile)
- Crawford Farm Conservation Easement (0.4 mile)
- Nuttall Farm Conservation Easement (0.4 mile)
- Gordon Creek WMA (5.3 mile)
- Salt Creek WMA (0.9 miles)

The following special designations and other management areas are not crossed by Alternative COUT-H in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Nine Mile ACEC
- Lears Canyon ACEC
- Hilltop Conservation Easement
- Hill Creek WHHMA
- Fountain Green WMA
- Triangle Ranch WMA
- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

Alternative COUT-H in Utah would have the same potential effects as Alternative COUT-C where it crosses the Lower Green River ACEC.

Alternative COUT-H in Utah crosses 0.8 mile of the Crawford Farm and Nuttall Farm conservation easements. Terms of the agreement for the Crawford Farm and Nuttall Farm conservation easements prohibit additional utility structures and systems. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.

Alternative COUT-H crosses 6.2 miles of the Gordon Creek WMA (5.3 miles) and Salt Creek WMA (0.9 mile). Potential effects would be the same as Alternative COUT BAX-E.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same affected environmental and environmental consequences for special designations and other management areas as Alternative COUT-C.

Alternative COUT-I

Affected Environment (Colorado)

Alternative COUT-I in Colorado does not cross any special designations or other management areas. However, the Badger Wash ACEC may be affected by being present in a portion of the 2-mile-wide study corridor.

Environmental Consequences (Colorado)

Alternative COUT-I in Colorado would have no potential effects on special designations or other management areas.

Affected Environment (Utah)

Alternative COUT-I in Utah crosses the following special designations and other management areas (including miles crossed):

- Lower Green River Corridor ACEC in the BLM Vernal Field Office (0.9 mile)
- North Moroni Conservation Easement (0.7 mile)

- Fountain Green WMA (0.1 mile)
- Salt Creek WMA (0.9 miles)

The following special designations and other management areas are not crossed by Alternative COUT-I in Utah, but these areas may be affected by being present in a portion of the 2-mile-wide study corridor:

- Hill Creek WHHMA
- Nine Mile ACEC
- Lears Canyon ACEC
- Hilltop Conservation Easement
- Triangle Ranch WMA
- Nephi WMA
- Burraston Ponds WMA
- Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)

Environmental Consequences (Utah)

Alternative COUT-I in Utah would have the same potential effects as Alternative COUT-C where the reference centerline crosses the Lower Green River ACEC.

In addition, Alternative COUT-I in Utah crosses 0.7 mile of the North Moroni Conservation Easement. The purpose for the conservation easement is to protect crucial deer and elk winter range. Per the contract for the conservation easement, no rights-of-way or easements will be granted to cross the conservation easement without prior written approval from the Grantee.

In addition, Alternative COUT-I in Utah crosses 1.0 miles of the Fountain Green and Salt Creek WMAs. The UDWR approves crossings of WMAs if a project would not unreasonably conflict with the intended use of the land or is not detrimental to wildlife or wildlife habitat and impacts can be avoided, minimized or mitigated. Disruptive activities may still occur during construction and maintenance of the alternative route. The Salt Creek and Fountain Green WMAs were acquired using Wildlife Restoration Act federal aid funding, making the property bound by the agreement. UDWR lacks authority to issue a right-of-way on the property until the U.S. Fish and Wildlife Service – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR. The EIS must support this decision for an agreement to be granted.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would have the same affected environmental and environmental consequences for special designations and other management areas as Alternative COUT-C.

3.2.15.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

The Adobe Town WHHMA is located on the northern corner of Siting Area A.

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of the Adobe Town WHHMA. However, if a series compensation station were located in the Adobe Town WHHMA, up to 160 acres of the WHHMA could be affected. Potential effects could include temporary displacement of wild horses due to noise and dust during construction and maintenance activities. Additional mitigation may be required by the agencies and would be incorporated into the construction POD.

Siting Area B – Nine Mile Basin

Affected Environment

The Sand Wash WHHMA is located on the western edge of Siting Area B.

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of areas where wild horses frequent for food and water, thus, no direct or indirect effects on these areas would be anticipated.

Siting Area C – Maybell

Affected Environment

The following special designations or other management areas are located in Siting Area C:

- Tuttle Ranch Conservation Easement (located in the southern portion of Siting Area C)
- Cross Mountain Ranch Conservation Easement (located in the southern and central portions of Siting Area C)
- Yampa River Recreation Area LWCF site (located in the northern portion of Siting Area C)

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of the Tuttle Ranch and Cross Mountain Ranch conservation easements because these areas preclude utility development, and the Yampa River Recreation Area LWCF site should be treated as an avoidance area for development. Thus, no direct or indirect effects on these areas would be anticipated. However, if a series compensation station were to be located on the Yampa River Recreation Area LWCF site, a conversion process could be used.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

The Yampa River Recreation Area LWF Site is located in the southeastern corner of Siting Area D.

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of the Yampa River Recreation Area LWCF site because the site should be treated as an avoidance area for development. Thus, no direct or indirect effects on these areas would be anticipated. However, if a series compensation station were to be located on Yampa River Recreation LWCF site, a conversion process could be used.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

There are no special designations or other management areas in Siting Area G and there would be no effects.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

There are no special designations or other management areas in Siting Area F and there would be no.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B would have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

There are no special designations or other management areas in Siting Area E and there would be no effects.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.16 Lands with Wilderness Characteristics

3.2.16.1 Introduction and Regulatory Framework

This section discusses inventoried lands that have been documented to contain wilderness characteristics and are located in the 2-mile-wide alternative route study corridors. In general, lands with wilderness characteristics units are public lands outside of WSAs and designated wilderness areas that are (1) greater than 5,000 acres of contiguous public lands with (2) apparent naturalness, (3) outstanding opportunities for either solitude or primitive and unconfined recreation, and (4) may contain supplemental values. Laws, regulations, and policies that establish and provide overall direction for the management of lands with wilderness characteristics include:

- FLPMA of 1976 (P.L. 94-579, Section 603), Section 201 requires the BLM to maintain on a continuing basis an inventory of all public lands and their resources and other values. This inventory requirement includes maintaining information regarding wilderness characteristics. Section 201 also directs that the preparation and maintenance of the inventory will not change or prevent change of the management or use of the public lands.

  Section 202 of FLPMA requires BLM to rely on the resource inventories in the development and revision of land-use plans, including inventory information regarding wilderness characteristics.

The potential effects of a proposed action on the wilderness characteristics and compliance with management-level decisions (established in BLM RMPs) for the units must be considered by the BLM when making project-level decisions.

- BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands (Public) states that for lands with wilderness characteristics "This policy contains the BLM guidance and general procedure for conducting wilderness characteristics inventories under Section 201 of FLPMA..." Under this policy the BLM will conduct inventories of public lands for the presence or absence of wilderness characteristics, by considering the, "…validity of proposed boundaries of the area(s), the existence of wilderness inventory roads and other boundary features, the size of the area(s), and the presence or absence of wilderness characteristics." Once potential lands with wilderness characteristics units have been identified, a complete inventory is performed, where the BLM considers the size, naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation, as well as any supplemental values. If an inventory unit meets all of these criteria, the area is documented as containing wilderness characteristics (BLM 2012j).
- BLM Manual 6320 considers lands with wilderness characteristics in the BLM Land Use Planning Process (Public) and establishes BLM policy on considering lands with wilderness characteristics in land-use plans and land-use plan amendments and revisions in accordance with FLPMA and other applicable authorities. By using the land-use planning process, the BLM can determine how to manage the lands with wilderness characteristics as part of the BLM's multiple-use mandate. A NEPA document will be completed to reach a planning decision for these units, outlining the management actions with allowable uses and restrictions (i.e., right-of-way exclusion or avoidance area (BLM 2012k).

  The following RMPs have management decisions related to lands with wilderness characteristics units:

  - Record of Decision and Approved Rawlins Resource Management Plan (BLM 2008b) – Rawlins Field Office
  - Grand Junction Field Office Record of Decision and Approved Resource Management Plan (BLM 2015a) – Grand Junction Field Office
  - Little Snake Record of Decision and Approved Resource Management Plan BLM 2011b) (2001, as amended) – Little Snake Field Office
  - White River Field Office Record of Decision and Approved Resource Management Plan (BLM 2015b) – White River Field Office
  - Moab Field Office Record of Decision and Approved Resource Management Plan (BLM 2008c) – Moab Field Office
  - Price Field Office Record of Decision and Approved Resource Management Plan (BLM 2008d) – Price Field Office
  - Richfield District House Range Resource Management Plan and Record of Decision Rangeland Program Summary (BLM 1987) – Fillmore Field Office
  - Richfield Field Office, Record of Decision and Approved Resource Management Plan (BLM 2008e) – Richfield Field Office
  - Vernal Field Office Record of Decision and Approved Resource Management Plan (BLM 2008f) – Vernal Field Office

3.2.16.2 Issues Identified for Analysis

The potential for effects on lands with wilderness characteristics was identified as an issue for analysis by the BLM. Additionally, an assessment of compliance with BLM RMP management objectives and

decisions for lands with wilderness characteristics that have been analyzed in a land use plan is also required.

3.2.16.3 Regional Setting

Lands with wilderness characteristics in the BLM Rawlins Field Office in Wyoming, BLM Little Snake, White River, and Grand Junction Field Offices in Colorado, and BLM Moab, Vernal, and Price Field Offices in Utah occur in the 2-mile-wide alternative route study corridor. Several lands with wilderness characteristics units are crossed by alternative routes considered for the Project (Table 3-232; MV-19a and MV-19b).

3.2.16.4 Study Methodology

3.2.16.4.1 Inventory

Inventoried lands with wilderness characteristics in the 2-mile-wide alternative route study corridors (MV-19a and MV-19b) are discussed in the section. Table 3-232 identifies the lands with wilderness characteristics units within the 2-mile-wide alternative route study corridors.

Lands with Wilderness Characteristics

Lands with wilderness characteristics are public lands that have been documented as meeting the requirements set forth in Manual 6310, and include lands that are of sufficient size and contain naturalness, outstanding opportunities for solitude and/or primitive and unconfined recreation, and may contain additional supplemental values. Table 3-232 identifies documented lands with wilderness characteristics units within the study corridor in each BLM field office.

3.2.16.4.2 Impact Assessment and Mitigation Planning

Lands with Wilderness Characteristics

Types of Potential Environmental Effects

Direct effects on wilderness characteristics would be associated with construction, operation, and maintenance activities.

Direct short-term effects on apparent naturalness, solitude, and unconfined/primitive recreation of the area would be related to the sights and sounds of construction activities, including noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit during construction for public health and safety.

Long-term direct impacts on apparent naturalness would be associated with presence of access roads and tower structures, right-of-way clearing and maintenance, and overstory vegetation removal that could diminish the recreational and wilderness experience for visitors. Outstanding opportunities for solitude or primitive and unconfined recreation would be diminished within the Project area.

Indirect effects on wilderness characteristics could occur if temporary or permanent access routes constructed for the Project resulted in increased access, particularly motorized access, to lands with wilderness characteristics, resulting in public uses that are incompatible with the wilderness resource.

TABLE 3-232
LANDS WITH WILDERNESS CHARACTERISTICS IN THE STUDY CORRIDOR

Unit ID/Name	Unit Size (Acres)	Wilderness Inventory Characteristics					Crossed by Reference Centerline of the Alternative Route (Link)	Relevant Alternative Routes
		Sufficient Size	Naturalness	Solitude	Primitive and Unconfined Recreation	Supplemental Values		
Wyoming								
Bureau of Land Management Rawlins Field Office								
Rotten Springs (WY-030-13N95W24-2012)	6,106	✓	✓		✓	No	Yes W409	WYCO-C
Colorado								
Bureau of Land Management Grand Junction Field Office								
Spring Canyon	8,848	✓	✓	✓	✓	No	Yes C197	All COUT BAX
Bureau of Land Management Little Snake Field Office								
Anthill Draw (Unit 46)	7,607	✓	✓	✓	✓	No	Yes C31	All WYCO
Deep Canyon (Unit 33)	10,975	✓	✓	✓	✓	Yes – Ecological, Visual	Yes C71, C72, C91	WYCO-B, WYCO-C, and WYCO-F
Lone Tree Gulch (Unit 39)	5,383	✓	✓	✓	✓	Yes – Visual	No C91, C170	All WYCO
Lower Little Snake (Unit 31)	10,312	✓	✓	✓	✓	Yes – Visual	Yes C71, C72	WYCO-B, WYCO-C and WYCO-F
Sevenmile Draw (Unit 30)	6,927	✓	✓	✓	✓	Yes - Visual	No C71	WYCO-B, WYCO-C, WYCO-F
Simsberry Draw (Unit 34)	6,343	✓	✓	✓	✓	Yes – Visual	Yes C91	WYCO-B, WYCO-C and WYCO-F
Spence Gulch (Unit 22)	5,359	✓	✓	✓	✓	Yes – Ecological and Visual	Yes C61	WYCO-B, WYCO-C, WYCO-F
Upper Little Snake (Unit 23)	11,453	✓	✓	✓	✓	Yes - Visual	Yes C61	WYCO-B, WYCO-C, WYCO-F
West Sevenmile (Unit 29)	6,323	✓	✓	✓	✓	Yes – Visual	Yes C61	WYCO-B, WYCO-C and WYCO-F

TABLE 3-232
LANDS WITH WILDERNESS CHARACTERISTICS IN THE STUDY CORRIDOR

Unit ID/Name	Unit Size (Acres)	Wilderness Inventory Characteristics					Crossed by Reference Centerline of the Alternative Route (Link)	Relevant Alternative Routes
		Sufficient Size	Naturalness	Solitude	Primitive and Unconfined Recreation	Supplemental Values		
Bureau of Land Management White River Field Office								
Bluejay Creek (Unit 7)	9,895	✓	✓	✓	✓	Yes – Geological and Visual	Yes C196	All COUT BAX
Coal Oil Gulch (Unit 22)	9,376	✓	✓	✓	✓	Yes – Scenic	No C186	All COUT
Coal Ridge (Unit 21)	9,021	✓	✓	✓	✓	Yes – Scenic	Yes C177	All COUT BAX
Gilsonite Hills (Unit 31)	11,948	✓	✓	✓	✓	No	Yes C195	All COUT BAX
Lower Wolf Creek (Unit 25)	11,600	✓	✓	✓	✓	No	Yes C175	All WYCO, COUT BAX, and COUT
MF Mountain (Unit 27)	9,000	✓	✓	✓	✓	Yes-Visual	No C175	All WYCO
Wild Rose (Unit 35)	8,213	✓	✓	✓	✓	No	Yes C196	All COUT BAX
Shavetail Wash (Unit 10)	15,200	✓	✓	✓	✓	Yes-Visual, geological, recreation, and ecological	No C195	All COUT BAX
Upper Coal Oil Rim (Unit 20)	13,700	✓	✓	✓	✓	Yes - Ecological	No C177, C185	All COUT BAX
Whiskey Creek (Unit 2)	5,205	✓	✓	✓	✓	Yes – Scenic and Geological	Yes C196	All COUT BAX
Utah								
Bureau of Land Management Fillmore Field Office								
There are no documented lands with wilderness characteristics units in the Project area in the Fillmore Field Office.								

TABLE 3-232
LANDS WITH WILDERNESS CHARACTERISTICS IN THE STUDY CORRIDOR

Unit ID/Name	Unit Size (Acres)	Wilderness Inventory Characteristics					Crossed by Reference Centerline of the Alternative Route (Link)	Relevant Alternative Routes
		Sufficient Size	Naturalness	Solitude	Primitive and Unconfined Recreation	Supplemental Values		
Bureau of Land Management Moab Field Office								
Floy Canyon	9,187	✓	✓	✓	✓	Yes – Scenic, Cultural, and Endangered Species	Yes U487	All COUT BAX
Harley Dome	5,336	✓	✓	✓		No	Yes U490	All COUT BAX
Bureau of Land Management Price Field Office								
Desolation Canyon[1]	86,453	✓	✓	✓	✓	No	Yes U488, U489, U734	COUT BAX-C, COUT BAX-E
Lost Spring Wash	32,121	✓	✓	✓	✓	Yes – Cultural (Old Spanish National Historic Trail)	Yes U730, U734	COUT BAX-B, COUT BAX-C
Mexican Mountain	13,186	✓	✓	✓	✓	Yes- Biological (Special status species, fish, and wildlife)	No	COUT BAX-B, COUT BAX-C
Never Sweat Wash	29,154	✓	✓	✓	✓	Yes – Cultural	Yes U734	COUT BAX-C
Price River	89,081	✓	✓	✓	✓	Yes – Historical	Yes U495	COUT BAX-E
Sids Mountain	12,953	✓	✓	✓	✓	Not applicable	No	COUT BAX-B, COUT BAX-C
Bureau of Land Management Richfield Field Office								
There are no documented lands with wilderness characteristics units within the Project area in the Richfield Field Office.								
Bureau of Land Management Vernal Field Office								
Bad Lands Cliffs[2]	7,900	✓	✓			NA	Yes U400	COUT-C, COUT-H, COUT-I

TABLE 3-232
LANDS WITH WILDERNESS CHARACTERISTICS IN THE STUDY CORRIDOR

Unit ID/Name	Unit Size (Acres)	Wilderness Inventory Characteristics					Crossed by Reference Centerline of the Alternative Route (Link)	Relevant Alternative Routes
		Sufficient Size	Naturalness	Solitude	Primitive and Unconfined Recreation	Supplemental Values		
Currant Canyon	20,817	✓	✓	✓	✓	Yes – Timber, wildlife viewing, range, oil and gas; geological	Yes U401	COUT-C, COUT-H, COUT-I
Desolation Canyon[1]	51, 955	✓	✓	✓	✓	Yes - Cultural, scenic, geologic, botanical, and wildlife values	Yes U400	COUT-C, COUT-H, COUT-I
Desolation Canyon Addition[2]	11,163	✓	NA	NA	NA	NA	Yes U400	COUT-C, COUT-H, COUT-I
Dragon Canyon[2]	19,898	✓	NA	NA	NA	NA	No	All COUT BAX

NOTES:
[1]There are two distinct and separate units named Desolation Canyon. One is located in the Vernal Field Office; the other is located in the Price Field Office.
[2]Southern Utah Wilderness Alliance has proposed an additional acreage or the re-assessment of units previously identified as having no wilderness characteristics. These units are currently being reviewed by the BLM per Manual 6310 and the BLM's inventory of lands with wilderness characteristics may be updated accordingly.

Effects Analysis

A qualitative assessment of the potential effects of the Project on lands with wilderness characteristics was conducted for each unit crossed by alternative routes. Where applicable, conformance with land use planning objectives established for the units was also assessed. As stated in BLM Manual 6310,

> The boundary of the wilderness characteristics inventory unit must be established…The boundary is generally based on the presence of wilderness inventory roads…can also be based on property lines between lands in Federal ownership and other ownerships or developed rights of way. The inventory will evaluate wilderness characteristics as defined in Section 2(c) of the Wilderness Act and incorporated in FLPMA. In order for an area to qualify as lands with wilderness characteristics, it must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. In addition, it may also possess supplemental values (BLM 2012j).

Mitigation Planning

Mitigation measures were considered to specifically reduce or offset impacts to lands with wilderness characteristics. Selective mitigation measures that would be applied to lands with wilderness characteristics include:

- Selective Mitigation Measure 1 (disturbance to sensitive soils and vegetation) would be applied where existing access would potentially need to be widened or upgraded for construction and maintenance. This measure would be applied to lands with wilderness characteristic to minimize impacts to the apparent naturalness of a unit.
- Selective Mitigation Measure 2 (sensitive resource avoidance) would be applied in areas where primitive and unconfined recreation or supplemental values occur, to avoid impacting these areas.
- Selective Mitigation Measure 3 (minimize slope cut and fill) would be applied in areas of steep terrain and where switchbacks would likely be required for construction and maintenance. By implementing this measure, impacts to the apparent naturalness would be minimized.
- Selective Mitigation Measure 4 (minimize tree clearing) would be applied where the transmission line would require the removal of overstory vegetation (i.e. deciduous forest, conifer forest, pinyon-juniper, or oak stand). By using this measure, effects to apparent naturalness would be minimized.
- Selective Mitigation Measure 5 (minimize new or improved accessibility) would be applied where access and tower pads needed for construction would be rehabilitated. This would reduce effects to the primitive and unconfined recreationists because it would help to maintain the solitude and apparent naturalness of a unit.
- Selective Mitigation Measure 7 (span and/or avoid sensitive features) would be applied where areas with outstanding opportunities for primitive and unconfined recreation, solitude and/or apparent naturalness could be avoided with adjustments to the Project centerline and access routes.
- Selective Mitigation Measure 11 (minimize right-of-way clearing) would be applied to where clearing the right-of-way could be minimized to maintain apparent naturalness, and opportunities for solitude and primitive and unconfined recreation.
- Selective Mitigation Measure 13 (overland access) would be applied in lands with wilderness characteristics units with documented wilderness characteristics to avoid impacting apparent naturalness of an area by not grading roads for right-of-way access during construction and maintenance of the Project.

- Selective Mitigation Measure 16 (blend road cuts and grading) would be applied to reduce effects to apparent naturalness and solitude of a unit.

Effectiveness of using these mitigation measures include minimizing Project effects to resources that contribute to the area's wilderness characteristics by consolidating and minimizing surface disturbances during project construction, access, and facility placement as well as assure that the alignment would not further encroach into areas not currently affected by the Project as disclosed in this EIS. Applying these mitigation measures to units that have been documented to contain wilderness characteristics would allow for the relevant BLM field office to use discretion at the local level to ensure retention of wilderness characteristics in areas not directly affected by the Project for future management consideration, to the greatest practical extent.

The BLM may require compensatory mitigation to offset impacts to lands with wilderness characteristics where impacts cannot be effectively avoided, in accordance with the Department of the Interior's Secretarial Order 3330 and the BLM's Draft Regional Mitigation Manual – Draft MS 1794 "Regional Mitigation Manual" (June 13, 2013) and consistent with the CEQ's NEPA regulations, 40 CFR 1508.20. Secretarial Order 3330 provides a policy that directs the Department of the Interior to "seek ways to offset or compensate for those impacts [that cannot be avoided or effectively minimized] to ensure the continued resilience and viability of our natural resources over time." (Secretarial Order 3330 at 2). BLM Draft Manual MS 1794 also reflects BLM's policy commitment to "consider mitigation outside of the area of impact when it is not feasible or practical to mitigate impacts to an acceptable level in the same area as the use-authorization." (Draft Manual MS 1794 at 1-5).

Because impacts associated with the Project alternatives do affect lands with wilderness characteristics, and the additional mitigation measures (Table 2-13) would minimize, but not avoid impacts altogether, compensatory mitigation may be appropriate to offset impacts of the project on lands with wilderness characteristics. Compensatory mitigation for impacts to lands with wilderness characteristics may include funding to maintain or enhance lands wilderness characteristics through resource restoration and other related activities, funding of related interpretation and educational programs, or other appropriate projects at the discretion of the field manager.

3.2.16.5 Results

The summary of the inventory findings for documented lands with wilderness characteristics units is presented in Table 3-232. The results of the effects analysis are described in this section and should be reviewed in conjunction with the resource inventory map (MV-19a and b). Table S-4d presents a comparison of results of the effects analysis for the alternative routes.

3.2.16.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.16.5.2 Impacts Common to All Action Alternatives

None of the alternative routes intersect a land with wilderness characteristics unit that has been designated as a natural area or prescribed for protection of wilderness characteristics under a BLM land-use plan. No effects on the management and protection prescriptions for lands with wilderness characteristics in units with plan decisions to manage for the protection of wilderness characteristics are anticipated from implementation of the Project. However, some units have been identified since the last plan update. For such units, the Project may foreclose future management options related to lands with wilderness characteristics.

3.2.16.5.3 345-kilovolt Ancillary Transmission Components

There are no lands with wilderness characteristics located in the vicinity of the 345kV ancillary transmission components. Thus, no effects on lands with wilderness characteristics would be anticipated from implementation of the 345kV ancillary transmission components of the Project.

3.2.16.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Alternative WYCO-B in Wyoming does not cross any lands with wilderness characteristics.

Environmental Consequences (Wyoming)

Alternative WYCO-B in Wyoming would have no impacts on lands with wilderness characteristics.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado crosses the following lands with wilderness characteristics units in the BLM Little Snake Field Office and BLM White River Field Office:

- BLM Little Snake Field Office
  - Anthill Draw (Unit 46)
  - West Sevenmile (Unit 353)
  - Upper Little Snake (Unit 23)
  - Lower Little Snake (Unit 31)
  - Deep Canyon (Unit 33)
  - Simsberry Draw (Unit 34)
  - Spence Gulch (Unit 118)
- BLM White River Field Office
  - Lower Wolf Creek (Unit 25)

This alternative route crosses the northwestern corner of Anthill Draw (Unit 46), which is 7,607 acres. The eastern portion of the unit has some existing disturbance from existing oil and or gas infrastructure. The northern portion of the unit contains areas of pinyon-juniper vegetation, while the southern portion is a sagebrush plateau. The majority of the unit is used for livestock grazing. Opportunities for naturalness and solitude are primarily found in the western portion of the unit. Primitive and unconfined recreation opportunities, including hunting and OHV riding, occur throughout the unit. This unit was in inventoried in 2012; management of the Anthill Draw unit has not been analyzed through a land-use planning process.

The West Sevenmile unit (Unit 353) is 6,323 acres and is dominated by a high relief, north to south trending ridge on the west side that steps down in a series of large, flat plateaus to a dominantly east to west ravine containing a tributary to the Little Snake River. The north end of the unit has a possible historic use for farming and/or ranching. A capped well immediately outside of the inventoried area, dated 1940, may be indicative of the year(s) the land was occupied and actively used. There is only one concentrated use site observed, but the area's unique topography and high relief offer opportunities for camping, hiking, and hunting. Dense pinyon-juniper forest acts as a curtain that shields the highlands from outside influences. Across the unit, the large stepping elevation changes seem to isolate one plateau

from another both visibly and audibly. The deep canyons are segregated visually to a great extent from the rest of the unit. There are no current impacts on apparent naturalness on or immediately adjacent to (other than recreation) the unit, adding to the quiet and sense of solitude. This unit was in inventoried in 2012; management of the West Sevenmile unit has not been analyzed through a land-use planning process.

Alternative WYCO-B in Colorado bisects the Upper Little Snake unit (Unit 23). The unit is 15,193 acres and is split into northern and southern portions by a wilderness inventory road (Route 05). The northern portion (10,312 acres) was found to contain lands with wilderness character tics with opportunities for unconfined/primitive recreation with many concentrated recreation sites and hunting opportunities and solitude and naturalness from minimal human disturbance. This unit was in inventoried in 2012; management of the Upper Little Snake unit lands with wilderness characteristics unit has not been analyzed through a land-use planning process. The southern portion of , the unit (4,881 acres) fails to meet the size criteria, the criteria for solitude and naturalness due to extensive agricultural and ranching activities and there were no unconfined/primitive recreation opportunities documented in the BLM's unit inventory report. Wilderness characteristics were not documented in the unit.

The Lower Little Snake (Unit 31) is crossed by Alternative WYCO-B, with small portion of the western side of the unit being bisected. The unit is 7,335 acres. The vegetation cover is pinyon-juniper forest in the higher elevations; sage and mixed- medium grasses in the intermediate slopes and plateaus; and mixed- medium grasses, some sage, and a variety of shrubs and cottonwood trees in the river valley. The unit has apparent naturalness and outstanding opportunities for solitude with the area primarily affected by the forces of nature. Primitive and unconfined recreation opportunities do exist in the area with hiking along the Little Snake River or the foothills of Sevenmile Ridge. Outstanding opportunities for wildlife viewing are present, with a bald eagle and a herd of elk viewed at the time of inventory. The Little Snake River offers opportunities for any sort of floating; canoes, tubes, rafts, and kayaks. The Little Snake River flows through parts of LWC Polygon 31, which when combined with the surrounding riparian habitat, provide supplemental value. This unit was inventoried in 2013; management of the Lower Little Snake unit has not been analyzed through a land-use planning process.

The western portion of the Deep Canyon unit (Unit 33) is crossed by Alternative WYCO-B. This crossing would bisect the western edge of the unit. The unit is 10,975 acres and contains pinyon-juniper, sagebrush, and grasses in the higher elevations and sagebrush, rabbit brush, and grasses in lower elevation areas. Ranching and livestock grazing occur in the lower elevations near the western portion of the unit, with some sheep grazing in the higher elevations. The unit has apparent naturalness and outstanding opportunities for solitude with vast undisturbed areas from Godiva Rim and areas to the north and south of the unit. Primitive and unconfined recreation opportunities do exist in the area with camping, hunting, off-road driving, scenic viewing/photography, and wildlife viewing. This unit was in inventoried in 2012; management of the Deep Canyon unit has not been analyzed through a land-use planning process.

The Simsberry Draw (Unit 34) unit is 6,343 acres and is located east of the Little Snake River and inclusive of Godiva Rim, which is the prominent topographic feature in the area. Vegetation consists of a mix of pinyon-juniper and sagebrush on the upper elevations and sagebrush/grasses on the lower elevations. The unit offers outstanding opportunities for primitive and unconfined recreation due to available access, beautiful scenery, and evidence of wildlife (e.g., hunting opportunities) as well as alcoves that provide for seclusion. Scenic characteristics include the unique and substantive views of the surrounding region, which dominate the landscape to the north and south including Godiva Rim and its backdrop for steep sloping expanses of valley vistas in the southern portion of the unit. This unit was in inventoried in 2012; management of the Simsberry Draw unit has not been analyzed through a land-use planning process.

Alternative WYCO-B in Colorado crosses a small portion of the southeastern portion of the Spence Gulch Unit (Unit 118). The unit is 5,359 acres and has generally large rolling slopes, with pinyon-juniper and sagebrush mainly on the slopes and sagebrush and grasses in the mid and lower elevation areas. The unit offers unconfined/primitive recreation opportunities such as primitive camping, hunting, wildlife observation, horse-back riding, and off-road driving. There are opportunities for solitude and naturalness throughout the unit with disturbances limited to a few trails and roads. The unit offers habitat for big game, wild horses, elk, and antelope and a portion of the unit in the northwestern corner overlaps a wild horse herd management area (WHHMA). This unit was in inventoried in 2012; management of the Spence Gulch unit has not been analyzed through a land-use planning process.

Alternative WYCO-B in Colorado crosses the northwestern edge of the Lower Wolf Creek unit (Unit 25) paralleling two existing transmission lines that form the northwestern edge of the unit. The unit is 11,600 acres and mainly consists of low to moderate relief hills and ravines with sagebrush and low mixed grass cover. The unit offers unconfined/primitive recreation opportunities such as camping, hunting, hiking, and wildlife observation. The unit offers opportunities for solitude and naturalness to the east of the northwestern boundary, with disturbance limited to a few primitive roads. This unit was in inventoried in 2013 and was analyzed in the White River Field Office Oil and Gas RMPA land-use planning process. The unit is managed as an avoidance area for new rights-of-way.

Environmental Consequences (Colorado)

Alternative WYCO-B in Colorado bisects the northwestern edge of the Anthill Draw Unit. The removal of the northwestern portion of the unit (removing approximately 900 acres for the Project right-of-way and a portion of the unit to the west of the Project) even though crossed by the Project's right-of-way would not reduce the area below the 5,000-acre size requirement for the eastern portion of the Unit. The Project's short-term effects on the naturalness, solitude, and unconfined/primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would include further influencing the area's wilderness characteristics along the northwestern portion of the unit to the point that, due to the local visual dominance of the Project, the naturalness and solitude would be lost in this portion of the unit.

Alternative WYCO-B in Colorado crosses the eastern portion of the West Sevenmile unit (removing approximately 25 acres for the Project right-of-way and a portion of the unit to the east of the Project). The western portion of the inventoried area would still meet the 5,000-acre size requirement but the eastern portion would not. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the unit. Long-term effects from the Project would be the reduced size of the unit and the influences of the Project infrastructure, including the vertical prominence of transmission structures, on the area's wilderness characteristics. This unit was in inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

Alternative WYCO-B in Colorado bisects the Upper Little Snake Unit (removing approximately 106 acres for the Project right-of-way), which would cause the remaining portion to not meet the 5,000-acre size requirement. The Project's short-term effects on the naturalness, solitude, and unconfined/ primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would include further influence on the area's wilderness characteristics, including local visual dominance of the area, through construction of new structures and restricted access to the area crossed by the Project right-of-way, further reducing the unit's wilderness characteristics. These effects would occur in the area

between the north/south high-relief ridge and the Little Snake River described as a dominant landscape feature in the unit. This unit was in inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

Alternative WYCO-B in Colorado bisects a western portion of the Lower Little Snake Unit. The Project would remove approximately 230 acres of the unit for the Project right-of-way and a portion of the unit to the south and along the western edge. The remaining portion of the unit would still meet the 5,000-acre size requirement. The Project's short-term effects on the naturalness, solitude, and unconfined/ primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would include influencing the wilderness characteristics along the Little Snake River. The influences of the Project on the wilderness characteristics would be limited in the core area of this unit, northwest of the Little Snake River due to topographic screening offered by Sevenmile Ridge. This unit was in inventoried in 2013; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

Deep Canyon unit is crossed by Alternative WYCO-B. This crossing would bisect the western edge of the unit and remove approximately 180 acres of the unit for the Project right-of-way. The remaining portion of the unit would still meet the 5,000-acre size requirement. The Project's short-term effects on the naturalness, solitude, and unconfined/ primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would be impacts to the wilderness characteristics of this area since the Project would traverse Godiva Rim, the key landscape in the inventoried area. Because of the prominence of Godiva Rim, the Project would influence opportunities for solitude and primitive recreation in this area. This unit was in inventoried in 2012; management of the Deep Canyon unit has not been analyzed through a land-use planning process.

Alternative WYCO-B would bisect the Simsberry Draw unit (removing approximately 74 acres for the Project right-of-way) into two nearly equal portions with each portion not meeting the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the unit. Long-term effects from the Project would be impacts to the wilderness characteristics of this area since the Project would traverse Godiva Rim, the key landscape in the inventoried area. Because of the prominence of Godiva Rim, the Project would be skylined and, therefore, further influence opportunities for solitude and primitive recreation in this area. This unit was in inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

The removal of a small portion of the Spence Gulch unit (removing approximately 3 acres for the Project right-of-way and a portion of the unit to the east of the Project) crossed by the Project's right-of-way would not reduce the area below the 5,000-acre size requirement. The Project's short-term effects on the naturalness, solitude, and unconfined/primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would include further influence on the area's wilderness characteristics through construction of new structures and restricted access to the area crossed by the Project's right-of-way. This unit was in inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

The removal of the northwestern edge of the Lower Wolf Creek Unit (removing approximately 207 acres for the Project right-of-way) would not reduce the area below the 5,000-acre size requirement. The Project's short-term effects on the naturalness, solitude, and unconfined/ primitive recreation of the area

would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would include further influence on the area's wilderness characteristics, including local intrusion to the area, through construction of new structures and restricted access to the area crossed by the Project right-of-way. This unit was in inventoried in 2012; management of the lands with wilderness characteristics unit has not been analyzed through a land-use planning process.

Alternative WYCO-C

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming crosses the Rotten Springs (Unit WY-030-13N95W24-2012) lands with wilderness characteristics unit in the BLM Rawlins Field Office. Alternative WYCO-C in Wyoming crosses the eastern portion of Rotten Springs unit (Unit WY-030-13N95W24-2012), parallel to a utility corridor containing existing pipelines. The unit is 6,106 acres and is primarily sagebrush and grasslands. The naturalness and solitude of the unit are maintained with minimal human disturbance. Primary activities in the unit are a relatively low amount of oil and gas exploration and livestock grazing. Primitive and unconfined recreation opportunities do exist in the area with hunting and hiking being the primary recreation activities in the unit. This unit has been analyzed in a land-use planning process; the BLM Rawlins Field Office manages the unit for multiple uses.

Environmental Consequences (Wyoming)

The removal of the portion of the Rotten Springs unit crossed by the Project's right-of-way (removing approximately 27 acres) would not reduce the area below the 5,000-acre size requirement. This crossing would be located very near the edge of the unit where the existing pipelines already influence the unit's characteristics. The Project's short-term effects on the naturalness, solitude, and unconfined/primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential access restrictions to the unit. Long-term effects from the Project would include influencing the area's wilderness characteristics along the eastern edge of the unit.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-C in Colorado crosses the same lands with wilderness characteristics as Alternative WYCO-B and would have the same impacts as Alternative WYCO-B.

Alternative WYCO-D

Affected Environment and Environmental Consequences (Wyoming)

Alternative WYCO-D in Wyoming does not cross any lands with wilderness characteristics and would have no impacts.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-D in Colorado crosses the Lower Wolf Creek unit in the BLM White River Field Office and would have the same impacts as Alternatives WYCO-B in Colorado.

Alternative WYCO-F

Affected Environment (Wyoming)

Alternative WYCO-F in Wyoming does not cross any lands with wilderness characteristics and would have no impacts.

Affected Environment and Environmental Consequences (Colorado)

Alternative WYCO-F in Colorado crosses the same lands with wilderness characteristics as Alternatives WYCO-B and WYCO-C and would have the same impacts.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B in Colorado would cross the Lower Wolf Creek unit in the BLM White River Field Office (see Alternative WYCO-B for impacts) and the following lands with wilderness characteristics in the BLM White River and Grand Junction Field Offices:

- BLM White River Field Office
  - Coal Ridge (Unit 21)
  - Gilsonite Hills (Unit 31)
  - Wild Rose (Unit 35)
  - Bluejay Creek (Unit 07)
  - Whiskey Creek (Unit 02)
- BLM Grand Junction Field Office
  - Spring Canyon

The Coal Ridge (Unit 21) unit is dominated by Coal Ridge, an east to west trending linear mountain of tilted rock beds. The vegetation in the higher elevation is mainly pinyon-juniper with the lower elevation dominated by sage, greasewood, and mixed grasses. The unit is 9,021 acres and has natural processes and topographic features which allow for opportunities of solitude. Recreational activities include hunting, hiking, camping, climbing, and wildlife observation. This unit was in inventoried in 2012. Management of the unit was evaluated in the White River Field Office Oil and Gas RMPA land-use planning process. The unit is managed as an exclusion area for new rights-of-way.

The Gilsonite Hills (Unit 31) unit has plateaus, shallow draws, and canyons with mainly grass and shrub land vegetation in the lower elevations and pinyon-juniper at higher elevations. The unit is 11,948 acres and naturally exposed rock features create unique features and cliffs that offer opportunities for seclusion and solitude. Many cliffs have caves and ledges that have been inhabited by birds, creating a unique opportunity to view avian populations from lower elevations. Recreational activities that occur in the unit include hiking, horseback riding, primitive camping, and areas to study rock formations. The eastern edge of this area is overlain with a designated utility corridor in the BLM White River Field . This unit was inventoried in 2013. Management of the unit was evaluated in the White River Field Office Oil and Gas RMPA land-use planning process. The unit is managed as an avoidance area for new rights-of-way.

The Wild Rose (Unit 35) unit is 8,213 acres and has a remote natural landscape with a large eastern tributary of the South Fork of Texas Creek forming an incised landscape with oil and gas development occurring outside of the unit boundary. In 2013 the Wild Rose Fire burned more than 1,000 acres on the west side and down the slope from Texas Mountain in the unit. Suppression tactics resulted in the area still largely appearing natural after the fire was extinguished. The unit is adjacent to the Oil Spring Mountain WSA (note: The BLM's recommendation to Congress is that the Oil Spring Mountain WSA should not be carried forward as wilderness due to existing oil and gas leases [BLM 2015b]). Naturalness of the unit has been slightly influenced by signs of minor range improvements, reclaimed roads, and oil and gas well pads. Opportunities for solitude occur in the core area. Recreation activities include hiking, backpacking, and horseback riding along the valley bottoms; camping along the relatively flat benches; and hunting, sightseeing, and photography throughout the unit. The unit has a moderate to high density of

cultural resource sites and important habitat for various wildlife. The western edge of this area is overlain with a designated utility corridor in the BLM White River Field Office. This unit was in inventoried in 2013. Management for the unit was evaluated in the White River Field Office Oil and Gas RMPA land-use planning process. The unit is managed as open to new right-of-ways.

The Bluejay Creek (Unit 07) unit 9,895 acres and is in a mountainous region with moderate to high relief cliffs and hills made of horizontally bedded tan sandstones. Vegetation in ravines and channels is scrub and shrub dominated by large sagebrush. Ridges and upper slopes have pinyon-juniper forest cover. Tree and vegetation cover increases to the north of the unit. The Oil Spring Mountain WSA is adjacent to the eastern portion of the unit. Naturalness, solitude, and primitive/unconfined types of recreation are influenced by land uses that include several oil and gas wells and recreational activities (hunting, camping, hiking, OHV, and wildlife observation). The unit has visually distinct and unique horizontally bedded tan and reddish sandstone cliff formations. The unit also may contain geological characteristics for natural gas extraction. The northwestern edge of this area is overlain with a designated utility corridor in the BLM White River Field Office RMP. This unit was in inventoried in 2013; management of the Bluejay Creek unit has not been analyzed through a land-use planning process.

The Bluejay Creek (Unit 07) unit 9,895 acres and is in a mountainous region with moderate to high relief cliffs and hills made of horizontally bedded tan sandstones. Vegetation in ravines and channels is scrub and shrub dominated by large sagebrush. Ridges and upper slopes have pinyon-juniper forest cover. Tree and vegetation cover increases to the north of the unit. The Oil Spring Mountain WSA is adjacent to the eastern portion of the unit. Naturalness, solitude, and primitive/unconfined types of recreation are influenced by land uses that include several oil and gas wells and recreational activities (hunting, camping, hiking, OHV, and wildlife observation). The unit has visually distinct and unique horizontally bedded tan and reddish sandstone cliff formations. The unit also may contain geological characteristics for natural gas extraction. The northwestern edge of this area is overlain with a designated utility corridor in the BLM White River Field Office RMP. This unit was in inventoried in 2013; management of the Bluejay Creek unit has not been analyzed through a land-use planning process.

The Spring Canyon unit is 8,848 acres and is located in the Book Cliffs with elevations ranging from 8,100 feet in the northern portion of the unit to 5,000 feet in the southeastern portion of the unit along South Canyon. Rising and falling slopes, associated with a number of small drainages, creates coverage topographically that provides opportunities for solitude. Vegetation in the unit is primarily a mix of pinyon-juniper, mountain shrub mix, serviceberry, and Gambel oak with Douglas-fir in the higher elevations. Naturalness and solitude are slightly influenced by range management and recreation activities. Primitive and unconfined types of recreation include hunting and OHVs. The majority of the unit is undeveloped and natural, offering opportunities for solitude. In the future, this could change with 99 percent of the unit leased for oil and gas development. The western edge of this area is overlain with a designated utility corridor in the BLM White River Field Office RMP. This unit was inventoried in 2011 were documented. Per the Grand Junction RMP, the unit is not managed to protect wilderness characteristics due to valid existing rights, and/or motorized and mechanized use.

Environmental Consequences (Colorado)

Alternative COUT BAX-B in Colorado crosses the western portion of the Coal Ridge unit. The Project would remove a portion of the unit (approximately 16 acres of Project right-of-way and a portion of the Unit to the west of the Project) However, the remaining portion to the east and south would still meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on recreational access to the unit. Long-term

effects from the Project would include influencing the area's wilderness characteristics along the western edge of Coal Ridge.

Alternative COUT BAX-B in Colorado crosses the eastern edge of the Gilsonite Hills unit. The Project would remove the edge of unit (removing approximately 22 acres for the Project right-of-way); however, the unit would still meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the unit. Long-term effects from the Project crossing the eastern edge of the unit would include further influencing wilderness characteristics in this area.

Alternative COUT BAX-B in Colorado crosses the western edge of the Wild Rose unit. The Project would remove the western edge of the unit (removing approximately 11 acres for the Project right-of-way); however, the area would still meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the unit. Long-term effects from the Project crossing the western edge of the unit would include further influencing wilderness characteristics of this portion of the unit.

Alternative COUT BAX-B in Colorado crosses the northwestern edge of the Bluejay Creek unit. The Project would remove the northwestern edge of the unit (removing approximately 106 acres for the Project right-of-way and the portion of the unit to the north of the Project); however, the area would still meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area. Long-term effects from the Project crossing the northwestern edge of the inventory area would include further influencing wilderness characteristics of this area adjacent to existing oil and gas development and cherry stem roads.

Alternative COUT BAX-B in Colorado crosses the western edge of the Whiskey Creek unit. The Project would remove the western edge of the unit (removing approximately 59 acres for the Project right-of-way and a portion of the southern area of the Unit); however, the area would still meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area. Long-term effects from the Project crossing the western edge of the inventory area would include further influencing wilderness characteristics of this area adjacent to a series of pipelines encroaching on the eastern edge of the inventory area.

Alternative COUT BAX-B in Colorado crosses the western edge of the Spring Canyon inventory area. The Project would remove the western edge of the inventory area (removing approximately 14 acres for the Project right-of-way); however the area would still meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential restrictions on access to the inventoried area. Long-term effects from the Project crossing the western edge of the inventory area would include further influencing wilderness characteristics of this area.

Affected Environment (Utah)

Alternative COUT BAX-B in Utah crosses the following lands with wilderness characteristics units in the BLM Moab and Price Field Offices according to the wilderness criteria forms:

- BLM Moab Field Office
  - Harley Dome
  - Floy Canyon
- BLM Price Field Office
  - Lost Spring Wash

The Harley Dome unit is 5,336 acres and is relatively flat and treeless with gently rolling valleys. The area's boundary roads receive little traffic, but I-70 is located in proximity to the southern boundary of this unit. The low hills and drainages provide outstanding opportunities for solitude, especially where views of I-70 and other adjacent human modifications of the landscape are screened by topography. Opportunities for primitive and unconfined recreation are minimal as this area is not a recreation destination due to limited access to water. No supplemental values were identified in the unit. This unit was in inventoried in 2012; management of the Harley Dome unit has not been analyzed through a land-use planning process. The southeastern portion of this area is overlain with a designated utility corridor in the BLM Moab Field Office RMP.

The Floy Canyon unit is 9,187 acres and contains a series of deep canyons separated by mesas, including Hatch Mesa and Horse Mesa along the edge of the Book Cliffs, adjacent to the Desolation Canyon and Floy Canyon WSAs. Nearly this entire unit retains a natural character except for historic access routes, which are recovering naturally and are becoming less noticeable. Opportunities for solitude are outstanding in this area due to the series of canyons that screen views of modifications outside of this area and allow visitors to experience a sense of isolation and remoteness. Primitive recreation opportunities in the unit include hiking, backpacking, camping, and hunting. This area contains supplemental values associated with scenic values surrounding Hatch and Horse Mesas, cultural values associated with historic cabins, and the diversity of animal species including endangered and sensitive species. This unit has been analyzed in a land-use planning process; the BLM Moab Field Office manages the unit for multiple uses. The southwestern portion of this area is overlain with a designated utility corridor in the BLM Moab Field Office RMP.

The Lost Spring Wash unit is 32,121 acres and characterized by a series of nearly level mesas separated by more dissected lands adjacent to washes, including Lost Spring Wash and Cottonwood Wash as well as an extension of the San Rafael Reef that forms the eastern boundary of the unit. Except for a few roads that traverse this area (excluded from the boundary of the inventoried area), the Green River Cutoff Road that separates this area from the adjacent Never Sweat Wash lands with wilderness characteristics unit, and an existing 345kV paralleling the area's western edge within the BLM Price Field Office designated utility corridor; the area generally appears natural. Opportunities for solitude are available in this unit due to the enclosed setting associated with the washes where views of adjacent areas are screened by topography, remoteness and vegetation. The primitive recreation opportunities include hiking, horseback-riding, wildlife viewing, hunting, photography, and the Old Spanish Trail National Historic Trail (also a supplemental value for the unit). This unit has been analyzed in a land-use planning process; the BLM Price Field Office manages the unit for multiple uses.

Environmental Consequences (Utah)

Alternative COUT BAX-B in Utah crosses the eastern portion of the Harley Dome unit (removing approximately 65 acres for the Project right-of-way and eastern portions of the Unit). The remaining portion of the unit would no longer meet the 5,000-acre size requirement. The COUT BAX-B alternative route is located within a BLM Moab Field Office designated utility corridor. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential restrictions on access to the unit. Due to limited screening opportunities where the Project is located, long-term effects

from the Project would include impacts to apparent naturalness and the unit would no longer meet the size requirement for lands with wilderness characteristics.

Alternative COUT BAX-B in Utah crosses the southern portion of the Floy Canyon unit bisecting a portion of the area from the core area farther to the north (removing approximately 50 acres for the Project right-of-way and the southern portion of the unit). The remaining portion of the inventoried area to the north would meet the 5,000-acre size requirement but the southern portion would no longer meet the size requirement. The COUT BAX-B alternative is located within a BLM Moab Field Office designated utility corridor. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential restrictions on access to the inventoried area. Long-term effects from the Project would include influencing the wilderness characteristics south of Hatch Mesa where these characteristics are not influenced by adjacent uses to the same extent as the area north of this mesa.

Alternative COUT BAX-B crosses the southwestern portion of the Lost Spring Wash unit (removing approximately 300 acres for the Project right-of-way and a small portion of the Unit), bisecting a portion of the area from the core area farther to the north. The remaining portion of the inventoried area to the north would meet the 5,000-acre size requirement but the southwestern portion would no longer meet this size requirement. The COUT BAX-B alternative is located within a BLM Price Field Office designated utility corridor. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area. Long-term effects from the Project would include further influencing wilderness characteristics adjacent to Cottonwood Wash where these characteristics have been indirectly influenced by the existing transmission line.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT BAX-C in Colorado crosses the same lands with wilderness characteristics as Alternative COUT BAX-B and would have the same impacts as Alternative COUT BAX-B.

Affected Environment (Utah)

Alternative COUT BAX-C in Utah crosses the Harley Dome, Floy Canyon, and Lost Spring lands with wilderness characteristics in the BLM Moab and Price Field Offices. Additionally, Alternative COUT BAX-C crosses the Desolation Canyon and Never Sweat Wash units in the BLM Price Field Office.

The Desolation Canyon unit (Price Field Office) is 86,453 acres and is characterized by rolling to nearly level desert plains between the prominent Book Cliffs landscape and U.S. Highway 6. Other than the influence of modifications along the western boundary of this area, including U.S. Highway 6, the Denver and Rio Grande Western (D&RGW) Railroad, and existing 138kV transmission line, the area generally appears natural. Since the terrain in this area is fairly level, there are limited opportunities to experience solitude except in small enclosed landscapes associated with draws descending from the Book Cliffs. There are limited opportunities for primitive recreation in this area. This unit has been analyzed in a land-use planning process; the BLM Price Field Office manages the unit for multiple uses.

The Never Sweat Wash unit is 29,154 acres and is characterized by rolling and dissected terrain typical of the San Rafael Swell and along the western edge, a series of escarpments that descend into Buckhorn Flat. Other than the Green River Cutoff Road, which forms the southern boundary of the unit, there are limited modifications and the area generally appears natural. Opportunities for solitude are available in this unit

due to the enclosed setting associated with the dissected terrain where views of adjacent areas are screened by topography. Primitive recreation use is most apparent along the Green River Cutoff Road and Summerville Wash, including historic cabins on the western edge of this area. This unit has been analyzed in a land-use planning process; the BLM Price Field Office manages the unit for multiple uses.

Environmental Consequences (Utah)

The impacts on the Harley Dome and Floy Canyon lands with wilderness characteristics crossed by Alternative COUT BAX-C in Utah would be the same as Alternative COUT BAX-B.

Alternative COUT BAX-C in Utah crosses the western edge of the Desolation Canyon unit located in Price Field Office (removing approximately 165 acres for the Project right-of-way). The remaining portion of the unit to the east would meet the 5,000-acre size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area. Long-term effects from the Project would include further influencing the area's wilderness characteristics that, due to limited screening opportunities, would extend the influence of the Project further into the core of the unit.

Alternative COUT BAX-C in Utah crosses the southern portion of the Never Sweat Wash unit, bisecting a portion of the area from the core area farther to the north (removing approximately 206 acres for the Project right-of-way and a small portion of the unit). The remaining portion of the unit to the north would meet the 5,000-acre size requirement but the southern portion would not meet this size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment, as well as potential restrictions on access to the inventoried area. Long-term effects from the Project would include further influencing wilderness characteristics adjacent to the Green River Cutoff Road.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT BAX-E in Colorado crosses the same lands with wilderness characteristics as Alternatives COUT BAX-B and COUT BAX-C and would have the same impacts.

Affected Environment (Utah)

Alternative COUT BAX-E in Utah crosses the Harley Dome, Floy Canyon, and Desolation Canyon (Price Field Office) lands with wilderness characteristics units and would have the same impacts as Alternatives COUT BAX-B and COUT BAX-C. Additionally, Alternative COUT BAX-E in Utah crosses the Price River inventory area in the BLM Price Field Office.

The Price River unit is 89,081 acres and has a wide variety of landscapes typical of the San Rafael Swell. These landscapes include Cedar Mountain in the southern portion, a series of rugged and colorful ridges and escarpments in the central portion, and the Price River that dominates the character of the northern portion of this area. A series of roads excluded from the boundary of this unit provide access into the area's core; but based on size of this area, these roads do not considerably detract from the area's naturalness. Due to the rugged slopes and size of this unit, there are opportunities for solitude and primitive recreation throughout the area. Recreation opportunities are most apparent along the Price River and on Cedar Mountain. This unit has been analyzed in a land-use planning process; the BLM Price Field Office manages the unit for multiple uses.

Environmental Consequences (Utah)

The impacts on the Harley Dome and Floy Canyon lands with wilderness characteristics crossed by Alternative COUT BAX-E would be the same as Alternative COUT BAX-B. Since this alternative route would traverse the Desolation Canyon unit (Price Field Office) for approximately twice as many miles as Alternative COUT BAX-C, impacts would be similar but more intense than those described for Alternative COUT BAX-C.

Alternative COUT BAX-E in Utah crosses the northern portion of the Price River unit bisecting a portion of the area from the core area farther to the south (removing approximately 7 acres for the Project right-of-way and a small portion of the Unit). The remaining portion of the unit to the south would meet the 5,000-acre size requirement but the northern portion would not meet this size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined, and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area. Long-term effects from the Project would include locally influencing the area's wilderness characteristics, but there would be limited effects on these characteristics in the core of the inventoried area due to topographical screening offered by the canyon walls adjacent to the Price River.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

Alternative COUT-A

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-A in Colorado does not cross any lands with wilderness characteristics. No impacts on lands with wilderness characteristics would be anticipated.

Affected Environment and Environmental Consequences (Utah)

Alternative COUT-A in Utah does not cross any lands with wilderness characteristics and would have no impacts.

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-B in Colorado does not cross any lands with wilderness characteristics. No impacts on lands with wilderness characteristics would be anticipated.

Affected Environment and Environmental Consequences (Utah)

Alternative COUT-B in Utah does not cross any lands with wilderness characteristics and would have no impacts.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-C in Colorado does not cross any lands with wilderness characteristics. No impacts on lands with wilderness characteristics would be anticipated.

Affected Environment (Utah)

Alternative COUT-C would cross the Desolation Canyon unit in the Vernal Field Office. The Desolation Canyon unit is 51,955 acres and is characterized as having dramatic terrain changes from the Green River bottoms and floodplains to the high ridges of the Tavaputs Plateau nearly 9,500 feet in elevation. Numerous mesas, ridges, plateaus, canyons, and remote drainages intersect with the Green River with vegetation varying from riparian zones along the river, pinon-juniper woodlands, and areas with saltbrush, and shadscale. The higher ridges could contain stands of aspen, spruce, and fir. The Little Desert Road in the western portion of the unit and is the demarcation between the Southern Utah Wilderness Alliance (SUWA) unit nominated to the west of the road and the BLM lands documented to contain wilderness characteristics to the east of the road. The unit is natural in condition with sparse and scattered human-made developments. Opportunities for solitude, primitive, and unconfined recreation are provided where the unit is contiguous with the Desolation Canyon WSA, with many places in the unit only accessible by foot, horseback, or boat. This predominate recreational activity is hunting. Supplemental values in this unit include cultural, scenic, geologic, botanical, and wildlife values. As of 2007, 64 percent of the unit was leased for oil and or gas development (on BLM-administered lands), with BLM's standard surface development stipulations located where the alternative crosses the unit. The State of Utah lands adjacent to the unit also had active leases. This unit has been analyzed in a land-use planning process; the BLM Vernal Field Office manages the unit for multiple uses.

Alternative COUT-C would also cross the proposed Desolation Canyon Addition unit. The proposed Desolation Canyon addition unit (adjacent to the inventoried Desolation Canyon Unit in the Vernal Field Office) is 11,163 acres and is part of the SUWA proposal to update BLM's inventories of lands with wilderness characteristics in Utah. As of the time of printing, the BLM is reviewing the SUWA proposal for this unit and will update the inventory accordingly. The main uses of the unit appear to be ranching, hunting, and oil and gas development. Approximately 94 percent the proposed unit is leased for oil and gas development.

Alternative COUT-C would cross the Bad Lands Cliffs unit. The BLM has identified wilderness characteristics on 7,900 acres. SUWA has proposed additional lands with wilderness characteristics adjacent to the unit. At the time of printing, the BLM is reviewing the SUWA proposal for this unit and will update the inventory accordingly. This unit is characterized as having opportunities for ranching, hunting, and OHV use. Oil and gas development is located in and around the proposed unit. Evidence of road maintenance (such as trees being cut, rocks mounded, etc.) is found in the unit. This road is used by the public as a short-cut, as well as, to reach state lands.

Alternative COUT-C would cross the Currant Canyon unit. In 2011, BLM identified wilderness characteristics on 14,434 acres. SUWA provided new information and proposed additional contiguous acres (6,838). The BLM reviewed the new information provided by SUWA and determined the unit to be contiguous and to contain wilderness characteristics; the BLM updated the inventory. The unit consists of mainly of high desert plateau on the north end of the unit which then transitions down to steep and intricately formed canyons to low meadows with intermittent washes throughout. Vegetation consists mainly of juniper and pinyon pine intermixed with native grasses, shrubs and cacti. Limited evidence of human disturbances exists within the unit, most of which are concentrated around the perimeter of the unit and near the boundary roads. The unit offers opportunities for remote camping, horseback riding, wildlife viewing, hunting, etc. There are prevalent areas of geological interest within the unit, including unique formations, rock outcroppings, and steep topography.

Environmental Consequences (Utah)

Alternative COUT-C in Utah crosses the northern portion of the Desolation Canyon unit in the Vernal Field Office (removing approximately 7,100 acres from the Unit for the Project right-of-way and northern

edge of the Unit), paralleling approximately 2,000 feet from two Questar pipelines and adjacent to oil and gas development. These pipelines define the northern boundary of the unit. The remaining portion of the inventoried area to the south of where the Project would cross the unit would meet the 5,000 acre size requirement but the portion to the north of the Project, would not meet the size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area, similar to what may occur from the oil and gas activities in the unit.

Long-term effects from the Project would be most intense adjacent to the Green River where the Project would affect the wilderness characteristics as the steep terrain screens views of adjacent modifications including the Questar pipelines and oil and gas development. Further to the west, the Project would affect wilderness characteristics in the northern portion of the unit except where cherry-stemmed oil and gas wells (and associated roads) which have already influenced the existing character. In the southern portion of the unit, the wilderness characteristics would be minimally impacted especially in the canyons and remote drainages which characterize this unit due to the enclosed nature of these landscapes.

Alternative COUT-C in Utah crosses the northern portion of the proposed Desolation Canyon Addition unit (removing approximately 37 acres from the Unit for the Project right-of-way and a portion of the Unit). Similar to the long-term effects described for the Desolation Canyon Unit, the most intense impacts would occur adjacent to the Green River, as well in Kings Canyon, where the Project would affect wilderness characteristics due to the limited visibility of existing modifications in context with the Project.

Alternative COUT-C in Utah crosses the northern portion of the proposed Bad Lands Cliff unit (removing approximately 217 acres from the Unit for the Project right-of-way and a small portion of the unit). Per initial review of the proposed unit, the unit is bisected by a bladed and maintained road, which would not meet wilderness characteristics requirements, unless the boundary of the unit is adjusted. If the unit is found to have wilderness characteristics, the BLM may require compensatory mitigation to offset impacts to the lands with wilderness characteristics where impacts cannot be effectively avoided.

Alternative COUT-C in Utah crosses the northern portion of the Currant Canyon unit (removing approximately 103 acres from the Unit for the Project right-of-way along the northern edge of the Unit). Long-term effects would be most intense on ridgelines and higher elevation portions of the unit where the Project traverses the top of the Bad Land Cliffs introducing skyline transmission structures which would begin to affect wilderness characteristics. Due to the steep terrain in this unit, and limited access routes, the Project would be mostly screened by topography in the most accessible portions of the unit in the draws and canyons.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would cross the same lands with wilderness characteristic units as Alternative COUT-C, and the impacts would be same.

Alternative COUT-H

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-H in Colorado does not cross any lands with wilderness characteristics. No impacts on lands with wilderness characteristics would be anticipated.

Affected Environment and Environmental Consequences (Utah)

Alternative COUT-H in Utah crosses the same lands with wilderness characteristics as Alternatives COUT-C and COUT-I.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would cross the same lands with wilderness characteristic units as Alternative COUT-C, and the impacts would be same.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

Alternative COUT-I in Colorado does not cross any lands with wilderness characteristics. No impacts on lands with wilderness characteristics would be anticipated.

Affected Environment and Environmental Consequences (Utah)

Alternative COUT-I in Utah crosses the same lands with wilderness characteristics as Alternatives COUT-C and COUT-H.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The Bears Ears to Bonanza 345kV transmission line relocation would cross the same lands with wilderness characteristic units as Alternative COUT-C, and the impacts would be same.

3.2.16.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Siting Area A contains the following lands with wilderness characteristics in the BLM Rawlins Field Office and BLM Little Snake Field Office:

- BLM Rawlins Field Office
  - Rotten Springs in the northwestern portion of Siting Area A
  - Cherokee Draw in the southeastern portion of Siting Area A
- BLM Little Snake Field Office
  - Anthill Draw in the southern portion of Siting Area A

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of any lands with wilderness characteristics unit. However, if a series compensation station were located in lands with wilderness characteristics unit, it could impact inventoried wilderness characteristics for up to 160 acres of the unit. All units in Siting Area A would still meet the size criteria, even with this loss of acreage. Impacts on the land with wilderness characteristics unit's naturalness, outstanding solitude/unconfined and primitive recreation, and supplemental values (if applicable) would depend on the location of the facility in the unit; but due to the industrial nature of the facility, the presence of this Project feature would influence, and potentially dominate, these characteristics.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B contains the following lands with wilderness characteristics in the BLM Little Snake Field Office:

- West Sevenmile in the northwestern portion of Siting Area B
- Sevenmile Draw Lands with Wilderness Characteristics area in the western portion of Siting Area B
- Lower Little Snake Lands with Wilderness Characteristics area in the central portion of Siting Area B
- Simsberry Draw Lands with Wilderness Characteristics area in the southern portion of Siting Area B
- Upper Little Snake Lands with Wilderness Characteristics area in the northeastern portion of Siting Area B
- Spence Gulch Lands with Wilderness Characteristics area in the northwestern portion of Siting Area B
- Deep Canyon Lands with Wilderness Characteristics area in the east central portion of Siting Area B

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of any lands with wilderness characteristics unit. However, if a series compensation station were located in lands with wilderness characteristics unit, it could impact the inventoried wilderness characteristics for up to 160 acres of the unit. All units in Siting Area B would still meet the size criteria, even with this loss of acreage. Impacts on the land with wilderness characteristics unit's naturalness, outstanding solitude/unconfined and primitive recreation, and supplemental values (if applicable) would depend on the location of the facility in the unit; but due to the industrial nature of the facility, the presence of this Project feature would influence, and potentially dominate, these characteristics.

Siting Area C – Maybell

Affected Environment

Siting Area C contains the following lands with wilderness characteristics in the BLM Little Snake Field Office:

- Twelvemile Mesa lands with wilderness characteristics area in the southwestern corner of Siting Area C (for further information about this unit, refer to Appendix G
- Lone Tree Gulch lands with wilderness characteristics area located in the east central portion of Siting Area C
- Cross Mountain WSA Adjacent lands with wilderness characteristics area located in the western edge of Siting Area C

Environmental Consequences

Once a specific series compensation station location has been identified, effects on lands with wilderness characteristics described above will be analyzed.

Alternative WYCO-C

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Siting Area D contains the following lands with wilderness characteristics in the BLM Little Snake Field Office:

- Little Yampa Canyon Lands With Wilderness Characteristics in the southwestern portion of Siting Area D.

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of any lands with wilderness characteristics unit. However, if a series compensation station were located in a lands with wilderness characteristics unit, it could affect inventoried wilderness characteristics of up to 160 acres of the unit. All units in Siting Area D would still meet the size criteria, even with this loss of acreage. Impacts on the lands with wilderness characteristics unit's naturalness, outstanding solitude/unconfined and primitive recreation, and supplemental values(if applicable) would depend on the location of the facility in the unit; but due to the industrial nature of the facility, the presence of this Project would influence, and potentially dominate, these characteristics.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B. Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

Siting Area G contains the following lands with wilderness characteristics in the BLM Price Field Office:

- Desolation Canyon Lands with Wilderness Characteristic area in the northeastern portion of Siting Area G

Environmental Consequences

It is assumed the specific location identified for the series compensation station would be located outside of any lands with wilderness characteristics unit. However, if a series compensation station were located in a lands with wilderness characteristics unit, it could impact inventoried wilderness characteristics of up to 160 acres of the unit. All units in Siting Area B would still meet the size criteria, even with this loss of acreage. Impacts on the land with wilderness characteristics unit's naturalness, outstanding solitude/unconfined and primitive recreation, and supplemental values (if applicable) would depend on the location of the facility in the unit; but due to the industrial nature of the facility, the presence of this Project feature would influence, and potentially dominate, these characteristics.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

There are no lands with wilderness characteristics areas in Siting Area F and there would be no impacts.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

There are no wilderness areas, WSAs, and lands with wilderness characteristics areas in Siting Area F and there would be no impacts.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

There are no lands with wilderness characteristics areas in Siting Area E and there would be no impacts.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

There are no lands with wilderness characteristics areas in Siting Area E and there would be no impacts.

3.2.17 Inventoried Roadless Areas and Unroaded/Undeveloped Areas

3.2.17.1 Introduction and Regulatory Framework

This section discusses potential impacts on USFS IRAs and unroaded/undeveloped areas. The three national forests in the Project area have IRAs and unroaded/undeveloped areas potentially crossed by the Project.

IRAs and unroaded/undeveloped areas are administratively different than wilderness areas, WSAs, and lands with wilderness characteristics, which are described in Section 3.2.16. Recreation activity inventories and the management direction for recreation activities for the national forests are provided in the ROS criteria discussed in Section 3.2.12. The ROS criteria are an important component of the analysis completed in this section. Each national forest has guidelines for implementation of ROS criteria in each of the LRMPs.

3.2.17.1.1 Regulatory Framework

Resources and activities on the Ashley, Manti-La Sal, and Uinta National Forests are managed based on direction provided in the USFS LRMPs, including:

- Ashley National Forest LRMP, 1986 as amended
- Manti-La Sal National Forest LRMP, 1986 as amended
- Uinta National Forest LRMP, 2003 as amended

These plans establish the goals and objectives for the management of resources on each national forest. The analysis and the effects of project activities on the wilderness attributes in both IRAs and unroaded/undeveloped areas are included in this section.

Inventoried Roadless Areas

The Roadless Area Conservation Rule (RACR) or *RACR of 2001* (36 CFR Part 294) was adopted by the USDA to "establish prohibitions on road construction, road reconstruction, and timber harvesting in IRAs on National Forest System lands". The rule established criteria for identifying IRAs and prescribed management for road construction and timber harvesting. Pursuant to the *Roadless Area Review and Evaluation II of 1979*, the USFS identified IRAs in national forests across the nation, which were incorporated into the RACR, to prevent the fragmentation of pristine, sensitive, and roadless areas due to road construction or timber harvesting.

IRAs represent some of the most extensive tracts of undeveloped land on the Ashley, Uinta, and Manti-La Sal National Forests and are valued for their roadless nature, undeveloped values, and associated environmental characteristics and attributes. The LRMP for the Uinta National Forest, revised in 2003, includes management direction for roadless areas. The LRMPs for the Ashley and Manti-La Sal National Forests were adopted in 1986. Since that time, no amendments have occurred for specific management objectives related to inventories of IRAs in these forest boundaries.

Unroaded/Undeveloped Areas

Pursuant to prior NFMA implementing regulations at 36 CFR 219.17 (as published in 36 CFR 200 et. seq. [July 1, 2000 edition]), the national forests each created an inventory of draft unroaded/undeveloped areas as part of LRMP revision efforts, formally initiated with NOIs in 2002 (FR 67[90]:31178 and 67[91]:31761). For those national forests that did not complete their LRMP revisions, including the Ashley and Manti-La Sal National Forests, the inventory data represents the latest inventory data for areas with potential wilderness qualities or attributes. The 2005 draft inventories of unroaded/undeveloped areas were based on direction in the *Intermountain Region Planning Desk Guide: A Protocol for Identifying and Evaluating Areas for Potential Wilderness* (USFS 2004a). There is no policy, law, or directive guiding the management of identified draft unroaded/undeveloped areas that lie outside of IRAs or wilderness areas; therefore, the only guidance for these areas is general forest or management area direction in the LRMPs.

The USFS identified unroaded/undeveloped areas using inventory procedures found in the Forest Service Handbook 1909.12, Chapter 71. The inventory was conducted with the purpose of identifying potential wilderness areas in the National Forest System. The *National Forest System Land and Resource Management Planning Rule of 1982* (36 CFR 219.17) directed that roadless areas be evaluated and considered for wilderness recommendation during the forest planning process.

The Uinta National Forest, unlike the Ashley and Manti-La Sal National Forests, does not have a draft inventory for unroaded/undeveloped areas.

3.2.17.2 Issues Identified for Analysis

During agency scoping, physical conflict with IRAs and unroaded/undeveloped areas and potential impacts on their wilderness attributes and other characteristics were raised as potential resource issues to be analyzed in the EIS.

3.2.17.3 Regional Setting

Portions of the USFS-administered lands located in the various forests have been categorized as either IRAs or unroaded/undeveloped areas. These lands range from elevations of approximately 6,500 feet to more than 9,000 feet, are mostly located in unpopulated areas, and include a variety of uses. Uses in these national forests, but not necessarily in an IRA or unroaded/undeveloped area, include timber harvest, dispersed and designated recreation areas, grazing, and special-use permit areas as several examples. The focus of this section is to analyze direct and indirect effects on USFS-administered lands in the boundaries of either an IRA or unroaded/undeveloped area in the 2-mile-wide alternative route study corridors. IRAs and unroaded/undeveloped areas in the Project's 2-mile-wide alternative route study corridors occur only in Utah.

3.2.17.4 Study Methodology

3.2.17.4.1 Inventory

There are 21 IRAs and 12 unroaded/undeveloped areas in the area crossed by the 2-mile-wide alternative route study corridors, as presented in Table 3-233 and a graphic representation of the units and the impacts identified during analysis are depicted on MV-20a and MV-20b.

TABLE 3-233
INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS CROSSED BY THE ALTERNATIVE ROUTE STUDY CORRIDORS AND PROJECT RIGHT-OF-WAY

Area (Unit) Name or Number	Total Acres in Unit	Approximate Acres in Study Corridor	Crossed by Project Right-of-way	
			Acres	Miles
Inventoried Roadless Areas				
Ashley National Forest				
0401009	30,356	921	No	No
0401010	21,869	7,625	135	9.3
0401011	30,039	7,662	35	5.4
0401012	46,363	4,412	5 or 3[1]	1.1
0401013	11,900	1,734	1	0.7
Manti-La Sal National Forest				
Boulger-Black Canyon	23,268	976	No	No
Cedar Knoll	22,485	790	11	0.4
Coal Hollow	6,265	1,601	No	No
East Mountain	30,681	2,220	No	No
Nuck Woodward	12,072	52	No	No
Oak Creek	16,756	682	No	No
Sanpitch	29,108	477	No	No
Uinta National Forest				
Chipman Creek (418008)	9,360	2,702	84 or 0.1[1]	3.0
Willow Creek (418009)	18,049	2,813	0.6	0.2
Strawberry Ridge (418015)	17,275	1,074	No	No
Diamond Fork (418016)	35,213	609	No	No
Tie Fork (418017)	19,616	3,265	No	No
Soldier Summit (418019)	6,848	988	0.1	0.3
Hop Creek Ridge (418021)	6,250	171	No	No
Golden Ridge (418028)	33,978	1,533	No	No
Nephi (418029)	11,659	230	No	No
Unroaded/Undeveloped Areas				
Ashley National Forest				
Cottonwood	25,989	7,311	34	5.4
First Canyon	6,748	1,227	No	No
Mill Hollow	6,131	1,591	No	No
Right Fork Indian Canyon	37,474	2,731	0.3	0.1
Sowers Canyon East	17,028	7,340	117	8.8
Manti-La Sal National Forest				
Boulger-Black Canyon	24,432	512	No	No
Cedar Knoll	28,351	2,136	13	0.8
Coal Hollow	7,095	1,630	No	No
East Mountain	28,303	2,135	1	0.3
Nuck Woodward-Gentry Mountain	24,568	53	No	No
Oak Creek	5,359	1,399	44	1.6
San Pitch Mountains	21,681	818	2	0.4

NOTES:
[1]Alignment of multiple alternative routes result in different acres or miles crossed.
The inventoried roadless areas and unroaded/undeveloped areas in this table include all areas associated with alternative routes.

There are 5 IRAs in the Ashley National Forest (totaling 140,526 acres), 7 IRAs in the Manti-La Sal National Forest (totaling 107,092 acres), and 9 IRAs in the Uinta National Forest (totaling 191,359 acres) crossed by the 2-mile-wide alternative route study corridors. There are 5 unroaded/undeveloped areas in the Ashley National Forest (totaling 83,421 acres) and 7 unroaded/undeveloped areas in the Manti-La Sal National Forest (totaling 125,645 acres) crossed by the 2-mile-wide alternative route study corridors. Of these areas, 4 IRAs in the Ashley National Forest (totaling 110,171 acres); 1 IRA in the Manti-La Sal National Forest (totaling 22,484 acres); and 3 IRAs in the Uinta National Forest (totaling 34,257 acres) would be crossed by the Project's proposed right-of way. Similarly, 3 unroaded/undeveloped areas in the Ashley National Forest (totaling 70,542 acres) and 4 unroaded/undeveloped areas in the Manti-La Sal National Forest (totaling 62,013 acres) would be crossed by the Project's proposed right-of-way. Any IRA or unroaded/undeveloped area crossed by the Project's associated right-of-way (250-feet-wide) has been analyzed in detail as instructed by the USFS. In other words, potential impacts were assessed if an IRA or unroaded/undeveloped area is crossed by the proposed right-of-way of an alternative route considered for the Project.

3.2.17.4.2 Impact Assessment and Mitigation Planning

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project would result in both direct and indirect adverse effects on IRAs and unroaded/undeveloped areas. Direct effects associated with construction, operation, and maintenance activities could include the following:

- Impacts on roadless characteristics and wilderness qualities or attributes in IRAs (short- and long-term)
- Impacts on wilderness qualities or attributes in unroaded/undeveloped areas (short- and long-term)
- Conflicts with management objectives for unroaded/undeveloped areas associated with clearing pulling and tensioning sites, staging areas, access roads, tower sites, and a batch plant (short- and long-term)
- Removing a portion of an unroaded/undeveloped area for towers and new access roads (long-term).

Indirect effects on unroaded/undeveloped areas could include impacts on wilderness attributes resulting from increased access by the public using construction access routes.

Criteria for Assessing Level of Impacts

Criteria were developed to assess the level of a potential effect on IRAs and unroaded/undeveloped areas associated with implementation of the Project (Table 3-234). The assessment of impacts on IRAs and unroaded/undeveloped areas was based on:

- whether the Project would conflict physically with an area and, if so, whether associated impacts on resource values, wilderness attributes, and other characteristics (described in this section) would be of a manner that would preclude potential future management of the area as wilderness; or
- whether any LRMP management objectives for the area could not be met, or compliance with any LRMP management objectives for the area would be affected.

TABLE 3-234
CRITERIA FOR ASSESSING LEVEL OF IMPACTS
ON INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Level of Impacts	Description
High	▪ Areas where the Project crosses a roadless area, including inventoried roadless areas (IRA) and unroaded/undeveloped areas, in a manner that would affect the characteristics and qualities of the area such that it may not be able to be managed as it is currently.[1]
Moderate	▪ Areas where the Project crosses an IRA or unroaded/undeveloped area in a manner that would not affect the ability of the area to be managed as an IRA and/or wilderness. Moderate impacts would include changes that may be large enough to result in changes to ecological conditions, a loss of acres, or a decrease in the user's experience, but would not preclude the ability of the U.S. Forest Service to continue to have the roadless area be managed as it is currently.
Low	▪ Areas of measurable or perceptible change that is small enough that it would not result in a change to ecological condition, a loss of acres eligible to be managed as an IRA or an unroaded/undeveloped area, or a marked decrease in user experience in the IRA or an unroaded/undeveloped area. Low impacts, while measurable or perceptible, would be small enough to result in minor changes to ecological condition, a very small loss of acreage, or minimal decrease in user's experience, and also would not preclude management of the area for roadless characteristics or wilderness attributes.

NOTE: [1]Impacts would occur on the qualities or attributes for which the areas were designated or identified. For example, impacts on roadless characteristics of IRAs or wilderness attributes of IRAs or unroaded/undeveloped areas

Roadless Area Characteristics and Wilderness Qualities or Attributes Identified for Inventoried Roadless Areas

In addition to a general absence of constructed roads, IRAs identified by the national forests contain other important environmental values that warrant protection, including the following nine roadless area values or features identified in the RACR to characterize IRAs.

- **Soil, water, and air resources.** These three resources are the foundation on which other resource values and outputs depend. Healthy watersheds provide clean water for domestic, agricultural, and industrial uses; maintain fish and wildlife populations; and provide recreational opportunities.
- **Sources of public drinking water.** National Forest System lands contain watersheds that are important sources of public drinking water. Maintaining these areas in a relatively undisturbed condition is crucial to maintain the flow and affordability of clean water to a growing population.
- **Diversity of plant and animal communities.** IRAs are more likely than roaded areas to support greater ecosystem health, including a diversity of native and desired nonnative plant and animal communities. These areas serve as a buffer against the spread of non-native invasive species.
- **Habitat for threatened, endangered, and special status species dependent on large undisturbed areas of land.** IRAs function as biological strongholds and refuges for many species, including 13 and 25 percent of federally listed plant and animal species, respectively. In addition, 65 percent of all USFS sensitive species are directly or indirectly supported by IRAs (36 CFR 294).
- **Primitive and semi-primitive classes of recreation.** IRAs often provide outstanding dispersed recreation opportunities in areas with wilderness-like attributes. These areas reduce recreation pressure on designated wilderness; and unlike wilderness, the use of mountain bikes and other mechanized means of travel is permitted. These are classified by ROS mapping.
- **Reference landscapes for research study or interpretation.** Reference landscapes of relatively undisturbed areas serve as a barometer to measure the effect of development on other parts of the landscape.

- **Landscape character and integrity.** High-quality scenery, especially scenery with natural-appearing landscapes, is a primary reason that people choose to recreate. In addition, quality scenery contributes directly to real estate values in nearby communities and residential areas.
- **Traditional cultural properties and sacred sites.** Traditional Cultural Properties (TCP) are places, sites, structures, art, or objects that have played an important role in the cultural history of a group. Sacred sites are places that have special religious significance to a group. Many of these sites may be eligible for protection under the NHPA; however, many of these areas have not been inventoried.
- **Other locally unique characteristics.** IRAs may offer other locally identified unique characteristics and values such as uncommon geological formations, unique wetland complexes, or social, cultural, or historical characteristics.

Also, IRAs identified by the national forests contain the following qualities or attributes that characterize wilderness potential.

- **Untrammeled.** A measure of modern human activities that directly control or manipulate the components or processes of ecological systems inside wilderness.
- **Natural.** The extent to which long-term ecological processes are intact and operating. It describes the extent to which human influences have altered natural processes.
- **Undeveloped.** The environment looks natural to most people using the area (e.g., without permanent improvements or human habitation).
- **Outstanding opportunities for solitude or primitive recreation.** The area provides isolation from sights, sounds, and presence of others. The area also provides opportunities such as physical and mental challenge, adventure and self-reliance, as well as feelings of self-awareness and inspiration.
- **Special features.** The area provides values such as those with ecologic, geologic, scientific, educational, scenic, historical, or cultural significance.
- **Manageability (as wilderness).** Consideration of the ability to manage an area as wilderness as required by the Wilderness Act, Section 2, which defines Wilderness as an area that "… has at least 5,000 acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition…" Factors such as size, shape, and juxtaposition to external influences should be considered.

Impacts associated with the IRAs are discussed for each alternative route in terms of the criteria presented in Table 3-234, which reflect impacts on roadless characteristics and wilderness attributes (Section 3.2.17.5).

Wilderness Quality or Attributes Identified for Unroaded/Undeveloped Areas

Unroaded/undeveloped areas are not a land designation decision, nor do they imply or impart any particular level of management direction or protection. The boundaries for the unroaded/undeveloped areas (MV-20a and MV-20b) provide the most current inventory data for potential wilderness areas on the Ashley and Manti-La Sal National Forests. The analyses used in the inventories for the unroaded/undeveloped areas in the Ashley and Manti-La Sal National Forests, and used in this analysis, are not an evaluation of potential wilderness or a preliminary administrative recommendation for wilderness designation; recommendations of areas suitable for wilderness consideration have not been made by the USFS.

The following characteristics are criteria found useful in evaluating effects on wilderness qualities or attributes.

- **Untrammeled.** A measure of modern human activities that directly control or manipulate the components or processes of ecological systems inside wilderness.
- **Natural.** The extent to which long-term ecological processes are intact and operating. It describes the extent to which human influences have altered natural processes.
- **Undeveloped.** The environment looks natural to most people using the area (e.g., without permanent improvements or human habitation).
- **Outstanding opportunities for solitude or primitive recreation.** The area provides isolation from sights, sounds, and the presence of others. The area also provides opportunities such as physical and mental challenge, adventure and self-reliance, as well as feelings of self-awareness and inspiration.
- **Special features.** The area provides values such as those with ecologic, geologic, scientific, educational, scenic, historical, or cultural significance.
- **Manageability (as wilderness).** Consideration of the ability to manage an area as wilderness as required by the Wilderness Act, Section 2, which defines Wilderness as an area that "… has at least 5,000 acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition…" Factors such as size, shape, and juxtaposition to external influences should be considered.

Impacts associated with unroaded/undeveloped areas are discussed for each alternative route in terms of the criteria presented in Table 3-234, which reflect impacts on these wilderness attributes (Section 3.2.17.5).

Effects Analysis

Assessment of Initial Impacts

The level of initial impacts on IRAs and unroaded/undeveloped areas was based on whether the effects would reduce the size of the area or alter the area in a manner that would preclude management as an IRA and/or wilderness. The size threshold (5,000 acres) has been established related to impacts that could reduce the size of an area below an acceptable size to retain management. If the size of the IRA or unroaded/undeveloped area is reduced to below 5,000 acres by the Project, this could preclude future management as an IRA or draft unroaded/undeveloped area.

In addition, USFS resource specialists have identified that existing conditions in the vicinity of proposed alternative routes, including trails, roads, transmission lines, vegetation, and special local features, could influence the level of effect on an IRA or unroaded/undeveloped area. The initial impacts were assigned using the criteria presented in Table 3-234.

Mitigation Planning and Effectiveness

In addition to the design features described as part of the Project description in Chapter 2 (Table 2-8), selective mitigation measures would be implemented to minimize adverse impacts on IRAs and unroaded/undeveloped areas and are described in Tables 3-235 and 3-236, respectively.

TABLE 3-235
SELECTIVE MITIGATION MEASURES APPLIED IN INVENTORIED ROADLESS AREAS

Selective Mitigation Measure	Description of Mitigation	Example of Use
1	Disturbance to sensitive soils and vegetation	Existing access roads/trails would not be widened or otherwise upgraded, which would limit the amount of habitat disturbed or removed.
3	Minimize slope cut and fill	The alignment for any cross-country routes would follow the landform contours where practicable to minimize ground disturbance as well as the level of visual contrast introduced by the Project. In addition, modifications to the size and/or configuration of the permanent structure pads would allow cut and fill slopes to be minimized and contoured to blend with existing topography to the extent practicable.
4	Minimize tree clearing	Where possible, trees of varying sizes would remain in place, to protect habitat from being affected.
5	Minimize new or improved accessibility	To limit new or improved access into the inventoried roadless area, as well as earthwork associated with the construction of tower pads in extremely steep terrain, all access and tower pads that would not be required for maintenance would be closed and rehabilitated.
7	Span sensitive features	Where crossing of a locally valuable or sensitive site would occur, increase the span length to avoid directly impacting the site.
9	Maximize span at crossings	Towers would be placed at the maximum feasible distance from the crossing of trails, canyons, and other sensitive features to reduce the dominance of the structures on recreation and scenic values.
10	Helicopter construction	This mitigation could be used to reduce surface impacts in environmental constraint areas or steep terrain locations, in limited situations (given elevation constraints of helicopters and load carrying capacity).The decrease of ground disturbances would reduce the loss of vegetation, accelerated soil erosion, potential damage to cultural resources, and visual impacts associated with road construction.
11	Minimize right-of-way clearing	In areas with steep slopes or limited vegetation cover, the portion of the right-of-way clearing may be narrowed, thus resulting in less vegetation removal in that area.
12	Seasonal and spatial plant and wildlife restrictions	To minimize disturbance to identified plant and wildlife species during sensitive periods, construction and maintenance activities would be restricted in designated areas unless exceptions are granted by the Authorized Office or applicable regulatory agencies.

TABLE 3-235
SELECTIVE MITIGATION MEASURES APPLIED IN INVENTORIED ROADLESS AREAS

Selective Mitigation Measure	Description of Mitigation	Example of Use
13	Overland access	Overland access would avoid or minimize the removal of surface soil and vegetation, reducing the potential for erosion and loss of habitat. In addition, avoiding the construction of roads in these areas would reduce the effects of the Project on solitude and primitive recreation opportunities.
16	Blend road cuts or grading	Through the application of products to blend the color of areas of cut and fill to match the surrounding environment and grading techniques to blend earthwork associated with tower pad construction, the level of visual contrast would be reduced.

TABLE 3-236
SELECTIVE MITIGATION MEASURES APPLIED IN UNROADED/UNDEVELOPED AREAS

Mitigation Number	Description of Mitigation	Example of Use
1	Disturbance to sensitive soils and vegetation	Existing access roads/trails would not be widened or otherwise upgraded, which would limit the amount of habitat disturbed or removed.
2	Sensitive resource avoidance	Minimizing ground-disturbing construction activities in the same vicinity as streams would limit disturbance to riparian areas and/or streambeds, thus avoiding turbidity and sedimentation. In addition, limit land-use conflicts with trails and/or disruption of sensitive views.
3	Minimize slope cut and fill	The alignment for any cross-country routes would follow the landform contours where practicable to minimize ground disturbance as well as the level of visual contrast introduced by the Project. In addition, modifications to the size and/or configuration of the permanent structure pads would allow cut and fill slopes to be minimized and contoured to blend with existing topography to the extent practicable.
4	Minimize tree clearing	Where possible, trees of varying sizes would remain in place, to protect habitat from being affected.
5	Minimize new or improved accessibility	To limit new or improved access into the unroaded/undeveloped area, as well as earthwork associated with the construction of tower pads in extremely steep terrain, all access and tower pads that would not be required for maintenance would be closed and rehabilitated.
7	Span sensitive features	Where crossing of a locally valuable or sensitive site would occur, increase the span length to avoid directly impacting the site.
9	Maximize span at crossings	Towers would be placed at the maximum feasible distance from the crossing of trails, canyons, and other sensitive features to reduce the dominance of the structures on recreation and scenic values.

TABLE 3-236
SELECTIVE MITIGATION MEASURES APPLIED IN UNROADED/UNDEVELOPED AREAS

Mitigation Number	Description of Mitigation	Example of Use
10	Helicopter construction	This mitigation could be used to reduce surface impacts in environmental constraint areas or steep terrain locations, in limited situations (given elevation constraints of helicopters and load carrying capacity). The decrease of ground disturbances would reduce the loss of vegetation, accelerated soil erosion, potential damage to cultural resources, and visual impacts associated with road construction.
11	Minimize right-of-way clearing	In areas with steep slopes or limited vegetation cover, the portion of the right-of-way clearing may be narrowed, thus resulting in less vegetation removal in that area.
12	Seasonal and spatial plant and wildlife restrictions	To minimize disturbance to identified plant and wildlife species during sensitive periods, construction and maintenance activities would be restricted in designated areas unless exceptions are granted by the Authorized Office or applicable regulatory agencies.
13	Overland access	Overland access would avoid or minimize the removal of surface soil and vegetation, reducing the potential for erosion and loss of habitat. In addition, avoiding the construction of roads in these areas would reduce the effects of the Project on solitude and primitive recreation opportunities.
16	Blend road cuts or grading	Through the application of products to blend the color of areas of cut and fill to match the surrounding environment and grading techniques to blend earthwork associated with tower pad construction, the level of visual contrast would be reduced.

Residual Impacts

Based on the evaluation and application of selective mitigation measures to reduce impacts on the characteristics and qualities of IRA and unroaded/undeveloped areas, impacts were assigned a residual impact level of high, moderate, or low based on the potential effectiveness of the mitigation (Table 3-237).

TABLE 3-237
SUMMARY OF INITIAL AND RESIDUAL IMPACTS
ON INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Resource	Initial Impacts[1]	Selective Mitigation Measures Applied[2]	Residual Impacts
Inventoried Roadless Areas	High/Moderate	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 16	Moderate/ Low
Unroaded/Undeveloped Areas	High/Moderate	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 16	Moderate/ Low

NOTES:
[1]The level of initial impacts for each inventoried roadless area and unroaded/undeveloped area was evaluated based on the criteria identified in Table 3-234.
[2]For Mitigation Measure 10, there could be areas where helicopter-assisted construction would be limited because of elevation constraints of helicopters and load-carrying capacity.

3.2.17.5 Results

IRAs and unroaded/undeveloped areas crossed by the proposed right-of-way of alternative routes considered for the Project are presented in Table 3-233.

3.2.17.5.1 No Action Alternative

Under this alternative, there would not be any construction, operation, or maintenance activities associated with the Project. The existing condition of the IRAs and unroaded/undeveloped areas, including their individual roadless character and/or wilderness potential would remain unchanged and the ability to manage an area as wilderness as required would be unaffected.

3.2.17.5.2 Impacts Common to All Action Alternatives

There would be no impacts common to all action alternatives.

3.2.17.5.3 345-kilovolt Ancillary Transmission Components

For the 345kV ancillary transmission components, there would be no impacts on IRAs and unroaded/ undeveloped areas.

3.2.17.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment and Environmental Consequences (Wyoming and Colorado)

The proposed rights-of-way for the WYCO alternative routes in Wyoming and Colorado do not cross any IRAs or unroaded/undeveloped areas.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Alternative COUT BAX-B

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT BAX-B in Colorado does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-B in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-B in Utah crosses the following unroaded/undeveloped area in the Manti-La Sal National Forest:

- East Mountain Unroaded/Undeveloped Area would be crossed by Links U629 and U630 (MV-20b) occupying 1 acre in the unroaded/undeveloped area. The Project would traverse this area adjacent to an existing 345kV transmission line where the cleared right-of-way associated with this existing transmission line traverses the edge of the unroaded/undeveloped area. The area has been used extensively by man historically for grazing and logging but overall, shows little

evidence of man's presence to a trained observer. Opportunities for solitude and primitive recreation are provided by rugged terrain and dense vegetation that diminish below Crandall Canyon where landscape intrusions make the acts of man more apparent. Recreation opportunities include camping, hiking (including the Left Fork of Huntington National Recreation Trail), climbing, cross-country skiing, and seeing nature relatively undisturbed. Geologic structures exposed along the Left Fork of Huntington National Recreation Trail were identified in the Manti-La Sal National Forest wilderness characteristics inventory.

- San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest) would be crossed by Link U639 (MV-20b) occupying 2 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to existing 345kV and 138kV transmission lines. There are limited apparent modifications present in the unroaded/undeveloped area, but it is important to note that the existing transmission lines are located adjacent to the northern border of the unroaded/undeveloped area. Opportunities for solitude and private recreation are provided by steep slopes and dense vegetation. Recreation opportunities include camping, hiking, climbing, cross-country skiing, and seeing nature undisturbed, but it is important to note that no lands in this unroaded/undeveloped area were delineated with a primitive or semi-primitive non-motorized ROS class. No known special features are located in the area.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-B in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-B in Utah crosses 0.3 miles of the East Mountain Unroaded/Undeveloped Area in the Manti-La Sal National Forest, considered as moderate residual impacts on the area's characteristics and qualities. Since only the Project's proposed right-of-way would traverse the unroaded/undeveloped area, there are limited effects anticipated on natural processes in the area. The Project would visually influence the southwestern portion of the unroaded/undeveloped area through the introduction of additional transmission lines structure adjacent to the area. Views of the Project from the Left Fork of Huntington National Recreation Trail, located 6 miles away, would be screened by topography.

The proposed right-of-way for Alternative COUT BAX-B or Alternative COUT-A in Utah crosses 0.4 mile of the San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest), considered a low residual impact on the area's characteristics and qualities. Since only the Project's right-of-way would traverse the unroaded/undeveloped area, in an area influenced by existing transmission lines, there would be limited effects on natural processes and wildlife species. Through the application of selective mitigation measures to maximize the distance between transmission structures to span the unroaded/undeveloped area and reduce right-of-way vegetation clearing, there would be minimal effects on the unroaded/undeveloped area.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT BAX-C in Colorado does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-C in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-C in Utah crosses the same areas as Alternative COUT BAX-B.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-C in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

Impacts on unroaded/undeveloped areas for Alternative COUT BAX-C in Utah are the same as Alternative COUT BAX-B.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT BAX-E in Colorado does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-E in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-E in Utah crosses the following unroaded/undeveloped areas in the Manti-La Sal National Forest:

- Oak Creek Unroaded/Undeveloped Area would be crossed by Link U600 (MV-20b) occupying 44 acres with the unroaded/undeveloped area. The Project crosses this area north of Utah State Route 31 where there is limited existing development. The area has been used extensively by man historically for grazing but overall, shows little evidence of man's presence to a trained observer. The unroaded/undeveloped area provides opportunity for solitude although the steepness of the slopes and short vegetation make it difficult to obtain a full sense of seclusion in most of the area. Primitive recreation opportunities include camping, climbing, cross-country skiing, and seeing nature undisturbed, but it is important to note that no lands in this unroaded/undeveloped area were delineated with a primitive or semi-primitive non-motorized ROS class. No known special features are located in the area.
- San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest) would be crossed by Link U639 (MV-20b) occupying 2 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to existing 345kV and 138kV transmission lines. Characteristics and qualities for the unroaded/undeveloped area are the same as those described for Alternative COUT BAX-B.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-E in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-E in Utah crosses 1.6 miles of the Oak Creek Unroaded/Undeveloped Area, considered as moderate residual impacts on the area's characteristics and qualities. The Project would introduce approximately 5 to 8 structures (and associated work areas) into the unroaded/undeveloped area in addition to right-of-way vegetation clearing and temporary construction access routes. During construction of the Project, natural processes could be affected in the short-term but through the re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Views from the Maple Fork Trail would be dominated by the Project due to the limited existing modifications present in the area, but through application of selective mitigation measures to maximize the distance between transmission structures at the trail crossing and minimizing vegetation clearing in the Project's right-of-way to the extent practicable, the Project's influence on these views would be diminished.

Impacts on the San Pitch Mountains Unroaded/Undeveloped Area are the same as Alternative COUT BAX-B.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

Alternative COUT-A

Affected Environment and Environmental Consequences (Colorado)

The proposed rights-of-way for Alternative COUT-A in Colorado does not cross any IRA or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-A in Utah crosses the following IRAs:

- Cedar Knoll IRA (Manti-La Sal National Forest) would be crossed by Link U621 (MV-20b) occupying 11 acres in the IRA. The Project would traverse this area adjacent to an existing 345kV transmission line. The area has been used extensively by man historically for grazing, but overall, shows little evidence of man's presence to a trained observer except along the area's western boundary. The IRA provides an opportunity for solitude although the vegetation composition and density does not provide much seclusion. Primitive recreation opportunities include hunting, camping, hiking, climbing, and seeing nature relatively undisturbed, however, challenging wilderness experiences are limited. No known special features are located in the area.
- Chipman Creek IRA- 418008 (Uinta National Forest) would be crossed by Link U429 (MV-20b) occupying 0.1 acre in the IRA. The Project would traverse this area adjacent to an existing 345kV transmission line. There are limited apparent modifications present in the IRA except for limited range improvements but it is important to note that the existing 345kV transmission line is located directly adjacent to the southern IRA boundary. Opportunities for solitude are available but are limited by several cherry-stemmed roads that introduce evidence of man further into the IRA. Primitive recreation opportunities are mostly limited to hunting but there also is a low degree of opportunity for primitive recreation activities such as camping, fishing, backpacking,

and hiking. The IRA contains important habitat for the greater sage-grouse population in the Strawberry Valley as well as valuable habitat for a wide variety of other wildlife including mule deer, elk, moose, and black bear. No known special features are located in the area.

- Willow Creek IRA- 418009 (Uinta National Forest) would be crossed by Link U429 (MV-20b) occupying 0.6 acre in the IRA. The Project would traverse this area adjacent to an existing 345kV transmission line. There are limited apparent modifications present in the IRA except for limited range improvements and an existing 345kV transmission line that crosses the northern boundary of the IRA, introducing more than 20 transmission line structures as well as a geometrically cleared right-of-way corridor. Opportunities for solitude are available, mainly along Willow Creek, where the presence of cherry-stemmed roads in side canyons and the existing transmission line along the north boundary are less apparent. The trail along Willow Creek is open to motorcycle use, which could reduce opportunities for solitude. Primitive recreation opportunities include camping, hiking, mountain climbing, hunting, fish, and skiing. The IRA contains important habitat for a variety of wildlife including elk, deer, and black bears. No known special features are located in the area.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT-A in Utah crosses the following unroaded/undeveloped areas in the Manti-La Sal National Forest:

- Cedar Knoll Unroaded/Undeveloped Area would be crossed by Link U621 (MV-20b) occupying 13 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to an existing 345kV transmission line. The area has been used extensively by man historically for grazing but overall, shows little evidence of man's presence to a trained observer. The unroaded/undeveloped area provides an opportunity for solitude although the vegetation composition and density does not provide much seclusion. Primitive recreation opportunities include hunting, camping, hiking, climbing, and seeing nature relatively undisturbed; however, challenging wilderness experiences are limited. No known special features are located in the area.
- San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest) would be crossed by Link U639 (MV-20b) occupying 2 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to existing 345kV and 138kV transmission lines. There are limited apparent modifications present in the unroaded/undeveloped area, but it is important to note that the existing transmission lines are located adjacent to the northern border of the unroaded/undeveloped area. Opportunities for solitude and private recreation are provided by steep slopes and dense vegetation. Recreation opportunities include camping, hiking, climbing, cross-country skiing, and seeing nature undisturbed, but it is important to note that no lands in this unroaded/undeveloped area were delineated with a primitive or semi-primitive non-motorized ROS class. No known special features are located in the area.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-A in Utah crosses 0.4 mile of the Cedar Knoll IRA (Manti-La Sal National Forest) and would result in a moderate residual impact on the area's characteristics and qualities. The Project would introduce approximately 2 to 3 structures (and associated work areas) into the IRA in addition to right-of-way vegetation clearing and temporary construction access routes. During construction of the Project, natural processes may be affected in the short-term; but through re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Access into the IRA using

Forest Road 070 – Lake Fork Road and Forest Road 126 – Blind Canyon Road could be limited temporarily during construction activities; but once constructed, the Project would not affect opportunities to access primitive recreation. To minimize impacts on views from these roads, selective mitigation measures would be applied to maximize the distance between transmission structures at the road crossings. Views from this portion of the IRA would be further influenced by the transmission lines; but because only a small portion of the Project traverses the area, these views would be most influenced by Project components located outside of the IRA.

The proposed right-of-way for Alternative COUT-A in Utah also crosses 0.4 mile of the Chipman Creek IRA – 418008 (Uinta National Forest), considered a moderate residual impact on the area's characteristics and qualities. The Project would introduce approximately 2 to 3 structures (and associated work areas) into the IRA in addition to right-of-way vegetation clearing and temporary construction access routes. During construction of the Project, natural processes may be affected in the short-term; but through re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Through the application of selective mitigation measures to maximize the distance between transmission structures to span the IRA and reduce right-of-way vegetation clearing, there would be minimal effects on the IRA.

The proposed right-of-way for Alternative COUT-A in Utah crosses 0.2 mile of the Willow Creek IRA - 418009 (Uinta National Forest), considered a low residual impact on the area's characteristics and qualities. Similar to the impacts described for the Chipman Creek IRA, only the Project's right-of-way would traverse the IRA in an area influenced by an existing 345kV transmission line. As such, there are limited effects on natural processes in the area including habitat values for wildlife. Through the application of selective mitigation measures to maximize the distance between transmission structures to span the IRA and reduce right-of-way vegetation clearing, there would be minimal effects on the IRA.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT-A in Utah crosses 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area in the Manti-La Sal National Forest, considered as moderate residual impacts.

The proposed right-of-way for Alternative COUT-A crosses 0.8 mile of the Cedar Knoll Unroaded/ Undeveloped Area (Manti-La Sal National Forest), considered a moderate residual impact on the area's characteristics and qualities. The Project would introduce approximately 2 to 3 structures (and associated work areas) into the unroaded/undeveloped area in addition to right-of-way vegetation clearing and temporary construction access routes. During construction of the Project, natural processes may be affected in the short-term; but through the re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Access into the unroaded/undeveloped area using Forest Road 070 – Lake Fork Road and Forest Road 126 – Blind Canyon Road may be limited temporarily during construction activities; but once constructed, the Project would not affect opportunities to access primitive recreation. To minimize impacts on views from these roads, selective mitigation measures would be applied to maximize the distance between transmission structures at the road crossings. Views from this portion of the unroaded/undeveloped area would be further influenced by transmission lines but since there are limited recreation opportunities in the area, recreation views would be most influenced by Project components located outside of the IRA.

The proposed right-of-way for Alternative COUT BAX-B or Alternative COUT-A in Utah crosses 0.4 mile of the San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest), considered a low residual impact on the area's characteristics and qualities. Since only the Project's right-of-way would traverse the unroaded/undeveloped area, in an area influenced by existing transmission lines, there

would be limited effects on natural processes and wildlife species. Through the application of selective mitigation measures to maximize the distance between transmission structures to span the unroaded/undeveloped area and reduce right-of-way vegetation clearing, there would be minimal effects on the unroaded/undeveloped area.

Alternative COUT-B

Affected Environment and Environmental Consequences (Colorado)

The proposed rights-of-way of Alternative COUT-B in Colorado does not cross any IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed rights-of-way for Alternative COUT-B in Utah crosses the following IRAs:

- IRA 0401010 (Ashley National Forest) would be crossed by Link U431 (MV-20b) occupying 135 acres in the IRA. The Project would traverse this area adjacent to an existing 138kV transmission line. The area contains modifications including the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, existing unauthorized roads, and boundary and cherry-stemmed roads. The IRA provides opportunity for solitude except for the area along Sowers Canyon and where forest roads traverse the IRA due to the increased influence of man. Primitive recreation opportunities include hiking (Clem Hollow Trail #101), snowmobiling, and ATV riding. Occupied habitat for greater sage-grouse occurs in the IRA as well as habitat for Untermann's daisy, white-tailed prairie dog, and Mexican spotted owl. No known special features are located in the area.
- IRA 0401011 (Ashley National Forest) would be crossed by Link U431 (MV-20b) occupying 35 acres in the IRA. The Project would traverse this area adjacent to an existing 138kV transmission line. The area contains modifications including the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, existing unauthorized roads, and boundary and cherry-stemmed roads. The IRA provides opportunity for solitude except for the area along Sowers Canyon and where forest roads traverse the IRA due to the increased influence of man. Primitive recreation opportunities include hiking (Quitchampau Trail [Trail #101] and Mill Hollow Trail [Trail #125]), snowmobiling, and ATV riding. Occupied habitat for greater sage-grouse occurs in the IRA as well as habitat for Untermann's daisy, white-tailed prairie dog, and Mexican spotted owl. No known special features are located in the area.
- Cedar Knoll IRA (Manti-La Sal National Forest) would be crossed by Link U621 (MV-20b) occupying 11 acres in the IRA. The Project would traverse this area adjacent to an existing 345kV transmission line. Characteristics and qualities for the IRA are the same as those described for Alternative COUT-A.

Unroaded/Undeveloped Areas

The proposed rights-of-way for Alternative COUT-B in Utah crosses the following unroaded/undeveloped areas:

- Cedar Knoll Unroaded/Undeveloped area (Manti-La Sal National Forest) would be crossed by Link U621 (MV-20b) occupying 13 acres in the unroaded/undeveloped area. The Project would

traverse this area adjacent to an existing 345kV transmission line. Characteristics and qualities for the unroaded/undeveloped area are the same as those described for Alternative COUT-A.

- Cottonwood Unroaded/Undeveloped Area (Ashley National Forest) would be crossed by Link U431 (MV-20b) occupying 34 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to an existing 138kV transmission line. The area's modifications include the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, existing unauthorized roads, and boundary and cherry-stemmed roads. The unroaded/undeveloped area provides opportunity for solitude except for the area along Sowers Canyon and where forest roads traverse the unroaded/undeveloped area due to the increased influence of man. Primitive recreation opportunities include hiking (Clem Hollow Trail #101), snowmobiling, and ATV riding. Occupied habitat for greater sage-grouse occurs in the unroaded/undeveloped area as well as habitat for Untermann's daisy, white-tailed prairie dog, and Mexican spotted owl. No known special features are located in the area.
- Sowers Canyon East Unroaded/Undeveloped Area (Ashley National Forest) would be crossed by Link U431 (MV-20b) occupying 117 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to an existing 138kV transmission line. The area's modifications include the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, existing unauthorized roads, and boundary and cherry-stemmed roads. The unroaded/undeveloped area provides opportunity for solitude except for the area along Sowers Canyon and where forest roads traverse the area due to the increased influence of man. Primitive recreation opportunities include hiking (Quitchampau Trail [Trail #101] and Mill Hollow Trail [Trail #125]), snowmobiling, and ATV riding. Occupied habitat for greater sage-grouse occurs in the unroaded/undeveloped area as well as habitat for Untermann's daisy, white-tailed prairie dog, and Mexican spotted owl. No known special features are located in the area.
- San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest) would be crossed by Link U639 (MV-20b) occupying 2 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to existing 345kV and 138kV transmission lines. Characteristics and qualities for the unroaded/undeveloped area are the same as those described for Alternative COUT-A.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-B in Utah crosses 10.1 miles of IRA 0401010 (Ashley National Forest), considered a moderate residual impact on the area's characteristics and qualities. The Project would introduce approximately 10 to 16 structures (and associated work areas) into the IRA in addition to right-of-way vegetation clearing and temporary construction access routes adjacent to an existing 138kV transmission line. During construction of the Project, natural processes could be affected in the short-term but through the re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Opportunities for solitude in the IRA would be affected by the Project, including primitive recreation opportunities such as hiking the Clem Hollow Trail, but these effects would occur where these values have already been influenced by the existing transmission line. Impacts from the construction, operation, and maintenance of the Project have the potential to indirectly impact Untermann's daisy and impact potential habitat for the white-tailed prairie dog and Mexican spotted owl. Since the Project traverses the edge of the IRA, these habitat values for this area would be minimally affected after the application of selective mitigation measures to minimize impacts on these resources including minimizing right-of-way

vegetation clearing, applying appropriate seasonal construction restrictions, and avoiding known populations of these species.

The proposed right-of-way for Alternative COUT-B in Utah crosses 5.6 miles of IRA 0401011 (Ashley National Forest), considered a moderate impacts on the area's characteristics and qualities. Only the Project's right-of-way would traverse the IRA; but it is important to note that approximately 31 to 46 structures are located adjacent to the boundary and through construction, grading associated with each structure pad would occur adjacent to or partially in the IRA. These activities could alter or disrupt natural drainage patterns in the short-term; but through the re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Opportunities for solitude in the IRA would be affected by the Project, including primitive recreation opportunities such as hiking the Quitchampau Trail, but these effects would occur where these values have already been influenced by the existing transmission line. Impacts from the construction, operation, and maintenance of the Project have the potential to indirectly impact Untermann's daisy and impact potential habitat for the white-tailed prairie dog and Mexican spotted owl. Since the Project traverses the edge of the IRA, these habitat values for this area would be minimally affected after the application of selective mitigation measures to minimize impacts on these resources including minimizing right-of-way vegetation clearing, applying appropriate seasonal construction restrictions, and avoiding known populations of these species.

Impacts on the Cedar Knoll IRA are the same as Alternative COUT-A.

Unroaded/Undeveloped Areas

Alternative COUT-B in Utah would have the same impacts on the Cedar Knoll and San Pitch Mountains unroaded/undeveloped areas as Alternative COUT-A.

The proposed right-of-way for Alternative COUT-B in Utah crosses 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area (Ashley National Forest), considered a moderate residual impact on the area's characteristics and qualities. The Project would introduce approximately 10 to 16 structures (and associated work areas) into the unroaded/undeveloped area in addition to right-of-way vegetation clearing and temporary construction access routes adjacent to an existing 138kV transmission line. During construction of the Project, natural processes could be affected in the short-term but through the re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Opportunities for solitude in the area would be affected by the Project, including primitive recreation opportunities such as hiking the Clem Hollow Trail, but these effects would occur where these values have already been influenced by the existing transmission line. Impacts from the construction, operation, and maintenance of the Project have the potential to indirectly impact Untermann's daisy and impact potential habitat for the white-tailed prairie dog and Mexican spotted owl. Since the Project traverses the edge of the unroaded/undeveloped area, these habitat values for this area would be minimally affected after the application of selective mitigation measures to minimize impacts on these resources.

The proposed right-of-way for Alternative COUT-B in Utah crosses 5.6 miles of the Cottonwood Unroaded/Undeveloped Area (Ashley National Forest), considered a moderate residual impact on the area's characteristics and qualities. Only the Project's right-of-way would traverse the unroaded/ undeveloped area, but it is important to note that approximately 31 to 46 structures are located adjacent to the boundary and through construction, grading associated with each structure pad would occur adjacent to or partially in the area. These activities could alter or disrupt natural drainage patterns in the short-term; but through the re-establishment of vegetation in the right-of-way and recontouring structure work areas to re-establish any altered natural drainage patterns, these effects would be reduced. Opportunities for solitude in the unroaded/undeveloped area would be affected by the Project, including primitive

recreation opportunities such as hiking the Quitchampau Trail, but these effects would occur where these values have already been influenced by the existing transmission line. Impacts from the construction, operation, and maintenance of the Project have the potential to indirectly impact Untermann's daisy and impact potential habitat for the white-tailed prairie dog and Mexican spotted owl. Since the Project traverses the edge of the IRA, these habitat values for this area would be minimally affected after the application of selective mitigation measures to minimize impacts on these resources.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment and Environmental Consequences (Colorado)

The proposed rights-of-way for Alternative COUT-C in Colorado does not cross any IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed rights-of-way for Alternative COUT-C in Utah crosses the following IRA:

- Cedar Knoll IRA (Manti-La Sal National Forest) would be crossed by Link U621 (MV-20b) occupying 11 acres in the IRA. The Project would traverse this area adjacent to an existing 345kV transmission line. Characteristics and qualities for the IRA are the same as those described for Alternative COUT-A.

Unroaded/Undeveloped Areas

The proposed rights-of-way for Alternative COUT-C in Utah crosses the following unroaded/undeveloped area in the Manti-La Sal National Forest:

- Cedar Knoll Unroaded/Undeveloped Area (Manti-La Sal National Forest) would be crossed by Link U621 (MV-20b) occupying 13 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to an existing 345kV transmission line. Characteristics and qualities for the area are the same as those described for Alternative COUT-A.
- San Pitch Mountains Unroaded/Undeveloped Area (Manti-La Sal National Forest) would be crossed by Link U639 (MV-20b) occupying 2 acres in the unroaded/undeveloped area. The Project would traverse this area adjacent to existing 345kV and 138kV transmission lines. Characteristics and qualities for the unroaded/undeveloped area are the same as those described for Alternative COUT-A.

Environmental Consequences (Utah)

Inventoried Roadless Areas

Alternative COUT-C in Utah would have the same impacts on the Cedar Knoll IRA as Alternative COUT-A.

Unroaded/Undeveloped Areas

Alternative COUT-C in Utah would have the same impacts on the Cedar Knoll and San Pitch Mountains unroaded/undeveloped areas as Alternative COUT-A.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The proposed right-of-way for the relocated Bears Ears to Bonanza 345kV transmission line does not cross any IRAs or unroaded/undeveloped areas.

Alternative COUT-H

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT-H in Colorado does not cross IRAs or unroaded/ undeveloped areas

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-H in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT-H in Utah crosses the same unroaded/undeveloped area as Alternative COUT BAX-E. Characteristics and qualities for the Oak Creek and San Pitch Mountains unroaded/undeveloped areas (Manti-La Sal National Forest) are the same as those described for Alternative COUT BAX-E.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-H in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

Alternative COUT-H would have the same impacts on the Oak Creek and San Pitch Mountains unroaded/undeveloped areas (Manti-La Sal National Forest) as Alternative COUT BAX-E.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The proposed right-of-way for the relocated Bears Ears to Bonanza 345kV transmission line does not cross any IRAs or unroaded/undeveloped areas.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT-I in Colorado does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-I in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT-I in Utah crosses the same unroaded/undeveloped area as Alternatives COUT BAX-B and COUT BAX-C. Characteristics and qualities for the East Mountain

and San Pitch Mountains unroaded/undeveloped areas (Manti-La Sal National Forest) are the same as Alternative COUT BAX-B.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-I in Utah does not cross IRAs.

Unroaded/Undeveloped Areas

Alternative COUT-I in Utah would have the same impacts on the East Mountain and San Pitch Mountains unroaded/undeveloped areas (Manti-La Sal National Forest) as Alternative COUT BAX-B.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The proposed right-of-way for the relocated Bears Ears to Bonanza 345kV transmission line does not cross any IRAs or unroaded/undeveloped areas.

3.2.17.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Since no IRAs or Unroaded/Undeveloped Areas are located adjacent to the siting areas, this section is not pertinent for analysis of the Project.

3.2.18 Visual Resources

3.2.18.1 Introduction and Regulatory Framework

The following section describes the visual resources assessment conducted for the proposed Project. The assessment comprises the visual resource inventory (i.e., affected environment) and a visual impact assessment (i.e., environmental consequences) based on the potential construction, operation, and maintenance of the proposed Project. To provide context in which the visual resource assessment was developed, the first portion of this section describes pertinent visual resource policies and regulations (Regulatory Framework) and key issues identified through the agency and public scoping process (Section 3.2.18.2). In addition, the general character of the landscapes crossed by the Project is described for context (Environmental Setting). Following the environmental setting discussion is a description of the methodology used to inventory the affected environment and to assess and identify the potential environmental consequences (i.e., impacts on the human environment) as well as compliance with agency visual management objectives and conformance with agency management prescriptions (e.g., LRMPs and RMPs). The results of the visual resource assessment are presented at the end of the section and are reported for each alternative route under study in this EIS. Detailed assessment techniques and results for the visual resource inventory, impact identification, and compliance with visual agency management objectives are documented in the Project Visual Resource Technical Report (available on the BLM's project website).

3.2.18.1.1 Regulatory Framework

As directed by FLPMA, the BLM, USFS, and NPS are required to consider scenic values of public land as a resource that merits management and preservation, where appropriate, determined through the land-use planning process. Both the BLM and USFS have developed visual resource management systems to inventory scenic (visual) values for lands they administer in addition to establishing agency visual management objectives (e.g., BLM VRM Classes and USFS Visual Quality Objectives [VQOs]). The importance of agency visual resource inventories and management objectives was reiterated in *BLM Washington Office Instruction Memorandum-2009-167* as well as the Interagency Operating Procedures

developed as part of the *West-wide Energy Corridor Programmatic EIS*. In addition to the visual resource management systems, each BLM RMP, USFS LRMP, or NPS General Management Plan describes additional visual resource guidance presented as management policies, standards, and guidelines. Goals, polices, or objectives identified in applicable state, county, and city plans are located in the Project Visual Resource Technical Report.

Bureau of Land Management

Visual Resource Management

Visual resources on BLM-administered land are managed in the context of the VRM system as described in BLM Manual 8400 Series – Visual Resource Management. The system includes an inventory of scenic values (BLM Manual 8410-1 – Visual Resource Inventory) based on the following factors: (1) diversity of landscape features that define and characterize landscapes in a given planning area (scenic quality), (2) public concern for the landscapes that make up a planning area (sensitivity levels), and (3) landscape visibility from public viewing locations (distance zones). These factors are collectively described as the visual resource inventory and are referred to as the VRI specifically for BLM-administered lands. Combined, these three factors determine VRI Classes, which indicate existing scenic values of BLM-administered lands. Through the BLM's land-use planning process, as described in BLM Manual 8410-1, VRM Classes are established to provide management objectives in terms of allowable levels of disturbance (visual contrast) and noticeability. Compliance with these objectives is assessed as directed by BLM Manual 8431 – Visual Resource Contrast Rating for planning and project-level actions, which also includes the identification of areas of additional visual mitigation. The contrast rating analysis is completed from selected KOPs, which are defined in BLM Manual 8400 as "one or a series of points on a travel route or at a use area or potential use area, where the view of a management activity would be most revealing." BLM Manual 8431 expands on this definition for assessing linear projects, which should be analyzed from several viewpoints representing:

- Most critical viewpoints (e.g., views from communities, road crossings)
- Typical views encountered in representative landscapes, if not covered by critical viewpoints
- Any special project or landscape features such as skyline crossing, river crossings, substations, etc.

For more information on how the BLM VRI data and contrast rating analysis were addressed in this visual resource study, refer to Section 3.2.18.4.

Since the BLM VRM Manuals do not explicitly describe a process for determining effects (impacts) on the human environment, *BLM Handbook 1790-1 – National Environmental Policy Act* was used to frame the visual resource study as well as the structure of this entire EIS.

Washington Office Instructional Memorandum No. 2009-167

BLM WO IM-2009-167 reiterates existing VRM policy regarding VRI in the context of renewable energy projects (including transmission lines). All BLM field offices must have current VRI and VRM Classes delineated as part of the BLM's planning process. If a BLM field office does not have VRI data, then an inventory will need to be completed to process permit applications.

National Scenic and Historic Trail Manuals

In September 2012, the BLM developed three manuals describing the administration and management of national scenic trails (NSTs) and national historic trails (NHTs), (1) BLM Manual 6250 – National Scenic and Historic Trails Administration, (2) BLM Manual 6280 – Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation, and (3) BLM

Manual 8353 – Trail Management Areas – Secretarially Designated National Recreation, Water, and Connecting and Side Trail. Of particular note is BLM Manual 6280, which identifies policy direction regarding the BLM's management approach and the NEPA analysis requirement for NST and NHTs. For this visual resources section, the analysis of visual effects on NST and NHTs (including trails under study) are described in a level commensurate with other issues identified for analysis. For the more in-depth analysis as required by BLM Manual 6280, refer to Section 3.2.19.

Applicable Resource Management Plan Visual Resource Management Direction

Through review of each RMP associated with the BLM field offices traversed by the Project, applicable management direction for visual resources was identified. This direction includes management of Wild and Scenic River segments, ACECs designated to protect scenery resources, and other unique visual resource management direction not included in the BLM Manual 8400 Series – Visual Resource Management. The 10 BLM field offices (and associated RMPs) crossed by the Project are listed below, including visually appropriate management direction:

- Rawlins Field Office (Wyoming) – 2008 Record of Decision and Approved RMP[5]
  - Wild and Scenic Rivers Management Action: Manage wild and scenic rivers to meet the Wyoming Standards for Healthy Rangelands
- Grand Junction Field Office (Colorado) – 2015 Record of Decision and Approved RMP
- Little Snake Field Office (Colorado) – 2011 Record of Decision and Approved RMP
- White River Field Office (Colorado) – 1997 Record of Decision and Approved RMP
- Fillmore Field Office (Utah) – 1987 House Range Resource Area RMP and Record of Decision Rangeland Program Summary
- Moab Field Office (Utah) – 2008 Record of Decision and Approved RMP
  - Visual Resource Management Decision (VRM-6): Designated utility corridors in VRM Class II areas are designated as VRM Class III only for utility projects
- Price Field Office (Utah) – 2008 Record of Decision and Approved RMP
  - Scenery ACEC: San Rafael Canyon
- Richfield Field Office (Utah) – 2008 Record of Decision and Approved RMP
- Salt Lake Field Office (Utah) – 1990 Record of Decision for the Pony Express RMP and Rangeland Program Summary for Utah County
- Vernal Field Office (Utah) – 2008 Record of Decision and Approved RMP
  - Wild and Scenic Rivers Management Decisions (WSR-7): The segment of the Lower Green River from the public land boundary south of Ouray to the Carbon county line will continue to be managed as previously recommended. The suitable segment has a tentative classification of scenic; its outstandingly remarkable values are fish and recreational opportunities. Management will include VRM – Class I and II
  - Scenery ACECs: Lower Green River Corridor and Nine Mile Canyon

[5]The VRM Classes designated in this plan were remanded and VRM Classes reverted to those designated in the previous RMP. Subsequent to this decision, the VRM Classes for a portion of the BLM Rawlins Field Office have been amended through the 2012 *Chokecherry and Sierra Madre Visual Resource Management Plan Amendment and Final Environmental Impact Statement* with the remaining portion of the field office being amended through the 2013 *Draft Resource Management Plan Amendment and Environmental Assessment*, which was scheduled to be finalized in March 2014.

U.S. Forest Service

Visual Management System

The USFS manages scenery (visual) resources according to the Scenery Management System as described in USDA Handbook Number 701: Landscape Aesthetics – A Handbook for Scenery Management or USDA Handbook Number 462: Visual Management System (VMS) (USFS 1974). The three national forests crossed by Project alternative routes (the Uinta-Wasatch-Cache, Manti-La Sal, and Ashley National Forests) manage visual resources in accordance with the VMS. The USFS VMS includes an inventory of landscape value in regard to the variety and distinctiveness of landscape features (variety class), public concern for scenic quality from identified use areas (sensitivity levels), and visibility from identified use areas (distance zones). As part of the development of LRMPs, VQOs are assigned for all USFS-administered lands to set an acceptable level of alteration from the natural landscape. Compliance with VQOs is based on the level of visual contrast produced by a project when compared to the surrounding natural landscape. Conformance with the LRMPs are contingent on meeting forest-wide and management area standards, as well as striving to meet forest-wide and management area guidelines to the extent practicable.

Applicable Land and Resource Management Plan Visual Management Direction

The following LRMPs, representing the three national forests crossed by the Project, were reviewed and referenced for this visual resource assessment:

- 1986 Ashley National Forest Land and Resource Management Plan
  - Forest-wide Objective Recreation Objective Number 9: Implement and manage for adopted visual quality objectives.
  - Management Area D (High Forage Production and Livestock Utilization) Prescription: Standard service level VQOs variable to meet range resource needs except in highly sensitive (areas).
  - Management Area F (Dispersed Recreation Roaded) Prescription: VQOs at inventoried standards.
  - Management Area N (Range of Resource Uses and Outputs): VQOs as inventoried.
- 1986 Manti-La Sal National Forest Land and Resource Management Plan
  - General Direction 01: Forest resource uses or activities should meet the adopted VQO as displayed on the Planned Visual Quality Objective Map.
  - General Direction 02: Design and implement management activities to blend with the natural landscape.
  - General Direction 04: Achieve landscape enhancement through addition, deletion or alteration of landscape elements. Examples of these include (a) addition of vegetation species to introduce unique form, color or texture of existing vegetation; (b) vegetation manipulation to open up vistas or screen out undesirable views.
  - General Big Game Winter Range (GWR) Management Unit General Direction 01 (Emphasis is on general big-game winter range): Meet Forest Direction Visual Quality Objectives except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.
- 2003 Uinta National Forest Land and Resource Management Plan
  - Forest-wide Standard (Scene-1): Safety concerns will supersede objectives for scenery when vegetation manipulation, signing, etc., is needed to ensure public safety.
  - Forest-wide Guideline (Scene-2): Forest resource uses or activities should meet the assigned objectives for scenery management as displayed on the map for each management area located in Chapter 5 of the Uinta National Forest LRMP. In the short-term there may be

activities that produce impacts not meeting planned scenery objectives, yet facilitate a higher level of scenic quality in the longer term.

- Forest-wide Standard (Scene-3): The Forest Service publication *The Built Environment Image Guide* and the ROS class will be considered in facility design and in the selection of construction materials and colors.

Other National Federal Policy

The Dinosaur National Monument is managed according to the 1987 General Management Plan. In regard to the areas potentially crossed by the Project, a 1,000-foot-wide scenic easement was established adjacent to Deerlodge Road from U.S. Highway 40 to Deerlodge Park. This easement was established to protect the visual qualities of the road's rangeland character and precludes all future surface mineral activity, including oil and gas extraction.

The WWEC Programmatic EIS established Interagency Operation Procedures for visual resources that apply to both the BLM and USFS. This document states that if agency visual management objectives and appropriate visual (scenic) inventory data have not been completed, then these should be developed by the proper agency. The BLM Field Manager or USFS Forest Supervisor will determine the role of the Applicant in completing this task (DOE and BLM 2008).

3.2.18.2 Issues Identified for Analysis

Issue or concern areas for scenic/visual resources were identified through the public (April to June 2011) and agency (February 2009 to July 2010) scoping process and are located throughout the Project area. These issues have been documented in the Project's Scoping Report (BLM 2011a) as well as issues associated with other resources. The overall issues and areas of concern identified for visual resources are associated with one of the following two categories: (1) impacts on scenery or (2) impacts on views. Each issue area was categorized as either being related to impacts on scenery or views for issue tracking purposes through the results portion of the visual section (Section 3.2.18.5). The issues identified through the scoping process, in regard to impacts on scenery or views, were supplemented with additional issue areas where the detailed impact assessment (refer to the Project Visual Resource Technical Report) identified a high impact on scenery or views as directed by the BLM Utah State Office. In addition to impacts on these two human environment issues, compliance with federal agency visual management objectives (and conformance with associated management plans) was identified as a component to be addressed in this EIS by both the BLM and USFS in accordance with FLPMA policy. The following are brief definitions for scenery and views, as they relate to issue identification, as well as compliance with applicable federal agency management objectives. For a more detailed description, refer to Section 3.2.18.4.

3.2.18.2.1 Scenery

In the context of issue identification, scenery is defined as a contiguous unit of land comprised of harmonizing features that result in and exhibit a particular character (e.g., bad lands scenery, foothills scenery, etc.). These landscapes may be affected through the construction, operation, and maintenance of the Project including the modification of the landscape's inherent character. For the detailed list of areas where scenery concerns were raised during the scoping process, refer to Table 3-242.

3.2.18.2.2 Views

Views from particular viewing locations, as well as specific viewsheds, were identified as a concern through the scoping process. Viewing locations represent places where the public would have potential views of the Project and typically include views from residences, travel routes, recreation areas, and

special designations. Potentially, these views would be modified adversely through the introduction of the Project into their viewshed. For the detailed list of areas of concern associated with potential impacts on views, refer to Table 3-243.

3.2.18.2.3 Compliance with Federal Agency Visual Management Objectives

As described in the Regulatory Framework, both the BLM and USFS assign visual management objectives through the land-use planning process and use these objectives to guide planning and project-level decisions. Compliance with these objectives and conformance with applicable RMPs and LRMPs are FLPMA requirements and were identified as an analysis component by both the BLM and USFS. Therefore, compliance with agency visual management objectives and potential plan amendments are addressed in the Draft EIS for each alternative route. For the assessment of conformance with the Dinosaur National Monument 1987 General Plan, refer to Appendix G.

3.2.18.3 Environmental Setting

The Project is located in the Wyoming Basin, Colorado Plateau, Middle Rocky Mountains, and Basin and Range physiographic provinces (Fenneman 1931). The Colorado Plateau physiographic province is further divided into three sections: Uinta Basin, Canyon Lands, and High Plateaus of Utah. To provide geographic context for the Project, below are summaries of each physiographic province (or section as applicable) traversed by the Project.

3.2.18.3.1 Wyoming Basin

The Wyoming Basin province is located in south-central Wyoming and extends into northwest Colorado. The northeast portion of the Project study area, including all of Wyoming and approximately half of the study area in Colorado, are located in this province and would be crossed by Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F (refer to Map 2-3a). This province is characterized by broad, arid intermontane basins interrupted by hills and low mountains. Topography is gently sloped in the basins, but becomes more dramatic and steep near local uplifts and surrounding mountains. Escarpments, found on surrounding hills and low mountains in the province, expose geologic layers, some of which are brightly colored. Hogback ridges and cuestas (long ridges with a steep escarpment on one side and gentle slope on the other) are additional distinctive landscape features found in the province.

In this arid, windswept landscape, basins and hills are dominated by grassland and shrubland species. Higher elevation hills include pinyon-juniper; in protected drainages at the highest elevations, vegetation includes isolated aspen and fir forests.

Though water is largely absent from the province, water is found in reservoirs, intermittent streams fed by snowmelt and summer storms, saline lakes and ponds that feature mudflats during wet years and salt pans in droughts, and several large rivers (the North Platte, Yampa, Little Snake, and White) that occupy broad to narrow valleys.

Agricultural activities are concentrated along river corridors, and grazing extends into the surrounding hills. Mining and oil and gas development are extensive cultural modifications in these landscapes. The communities of Hanna, Rawlins, Wamsutter, and Baggs, Wyoming, and Craig and Maybell, Colorado, are located in this physiographic province.

3.2.18.3.2 Colorado Plateau

Uinta Basin

The Uinta Basin section of the Colorado Plateau province is located in the northeastern Utah and northwestern Colorado portions of the Project study area. Due to the location of this physiographic section in relation to the Project study area, every WYCO alternative route crosses this section (refer to Map 2-3a) located in the far northeast corner of the section, while a major portion of the COUT BAX and COUT alternative routes (refer to Map 2-3b) are located in this physiographic section. This section is largely characterized by plateaus and broad basins. The plateaus are deeply dissected and display numerous sedimentary layers, sharp ravines, and sparsely vegetated escarpments and cliffs and are best represented by the Book Cliffs, Tavaputs Plateau, and Roan Cliffs.

On the edge of the Uinta Basin, the plateaus that surround the basin are vegetated with juniper and sagebrush. Irrigated agricultural fields and pastures are located adjacent to the major rivers that flow through the province (the Green, White, and Duchesne). Outside of these irrigated fields and pastures, sagebrush and grasses are the dominant vegetation communities in the Uinta Basin. Bad lands are found in the vicinity of the Bonanza Power Plant, near the White River, and display highly eroded, unique formations that are sparsely vegetated.

A large portion of the Uinta Basin has been developed with oil and gas wells that have modified the existing landscape character. As stated above, irrigated agricultural fields are located along the major rivers and, as such, have introduced intense colors in a landscape dominated by dull, subtle colors. The major communities of Rangely, Colorado, and Vernal, Roosevelt, and Duchesne, Utah, are located in this physiographic section.

Canyon Lands

The Canyon Lands section of the Colorado Plateau province is located in the southern portion of the Project study area in Utah and Colorado. Specifically, Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-H, and COUT-I, (refer to Map 2-3b) would traverse this physiographic section. This section is largely defined by the tributary rivers and streams of the Colorado River that have created numerous formations of visual interest, including plateaus, mesas, buttes, and canyons. The northern portion of the province, located near I-70, is characterized by flat to gently rolling plateaus (or flats) that are sparsely vegetated; these flats give way to red rock canyons and plateaus south of the Project study area. North of I-70, particularly in the San Rafael Swell, the landscape is characterized by canyons and escarpments that display sedimentary depositions of various colors. Farther north, the landscape is distinguished by dissected hills sparsely vegetated with grasses and shrubs.

Development in proximity to the Project alternative routes is primarily located adjacent to I-70, U.S. Highway 6, and Utah State Route 10. As described for the Uinta Basin, irrigated agricultural fields are located along major river corridors that have introduced intense green colors into a landscape characterized by muted earth colors. The Utah communities of Helper, Price, Wellington, Huntington, Castle Dale, and Green River are located in proximity to the Project alternative routes.

High Plateaus of Utah

The High Plateaus of Utah section of the Colorado Plateau province is located in central Utah. In context with the Project, this physiographic section would be crossed by all COUT BAX and COUT alternative routes (refer to Map 2-3b). This section is characterized by several plateaus (e.g., Wasatch Plateau) separated by prominent north-south valleys, including the Sevier and San Pitch river valleys. Several of the plateaus are capped by lava flow that has inhibited erosion, while others have been dissected into rounded hills.

At the lowest elevations of this physiographic section, irrigated agricultural fields and pastures give way to sagebrush and grass communities. On higher elevation slopes, vegetation communities transition from junipers/oak woodlands to aspen-fir and alpine. Water is found in perennial and intermittent mountain streams, reservoirs, and rivers in this landscape.

Development is concentrated in valleys that have been largely converted to irrigated farm lands. In some areas in the plateau lands, underground coal mines that have been operating for more than 100 years have modified the local landscape character. The communities of Mount Pleasant, Fairview, and Fountain Green, Utah, are located in proximity to Project alternative routes.

3.2.18.3.3 Middle Rocky Mountain

The Middle Rocky Mountain province is located primarily in western Wyoming with portions extending into Montana, Idaho, Utah, and Colorado. Only a small portion of the Project study area is located in this physiographic province between Strawberry Reservoir and Indianola (approximately 12 miles north of Fairview), and would be traversed by Alternatives COUT-A, COUT-B, and COUT-C (refer to Map 2-3b). The Wasatch Range is located at the edge of the Middle Rocky Mountains and the Basin and Range provinces, and as such, shares characteristics with both provinces. The most distinctive element of the Wasatch Range is the abrupt wall-like western front with steep v-shaped canyons. In contrast, the eastern edge of the Wasatch Mountains smoothly transition into the adjacent landscapes.

Vegetation in this province is largely dependent on elevation with grasses and sagebrush at the lowest elevations and alpine species occurring on the high peaks. The mosaic of these vegetation communities provides for a high level of landscape variety. Water is also an important feature of the Middle Rocky Mountains with the province including several major rivers and thousands of mountain lakes.

Cultural modifications are scattered and limited due to the steep terrain in the province. Groups of residences have been built along the highways and in valleys where the steep slopes are not a limiting factor to their construction. There are no major communities located in proximity to the Project alternative routes in this province, but several large cities are located directly adjacent to the province.

3.2.18.3.4 Basin and Range

The Basin and Range province stretches from the western slopes of the Wasatch Range in Utah to the eastern flank of the Sierra Nevada Mountains in California. This physiographic province is located along the far western portion of the Project study area and would be traversed by all COUT BAX and COUT alternative routes (refer to Map 2-3b). It is characterized by isolated, parallel, north-south oriented mountain ranges, typically 50 to 75 miles long, that are surrounded by nearly level, typically undrained basins. Gently sloping alluvial fans often occur at the interface between the mountains and basins, which are commonly braided by intermittently flowing shallow drainages.

The landscapes in this province are heavily influenced by the arid climatic patterns typical of the region, resulting in distinct and predictable vegetation patterns. Vegetation transitions from primarily low-growing sagebrush and grasses associated with the basins and alluvial fans to dry conifer forests on the highest peaks. The occurrence of water in this landscape is limited to small reservoirs and intermittent streams that flood during summer thunderstorms and the spring thaw.

Development is located primarily in the basins, as the steep mountains restrict most commercial and residential land uses. The majority of the basins located in the Project study area have been developed and modified to accommodate agricultural uses, which have introduced intense seasonal color into previously subtle, stark, and common landscape scenery. Residential and commercial development located in the Project area in the Basin and Range province includes the communities of Nephi and Mona, Utah.

3.2.18.4 Study Methodology

In response to the issues identified for analysis and in context with the Project's Environmental Setting and Regulatory Framework, the following study methodology was developed in coordination with the BLM and USFS landscape architects and recreation/visual resource planners at both the local (field office/national forest) and national (Washington office) levels. The visual assessment will focus on three components: (1) impacts on scenery, (2) impacts on views, and (3) compliance with federal agency visual management objectives, as well as conformance with LRMPs and RMPs.

Conformance with BLM RMPs is based on meeting the objectives related to the VRM Class crossed as well as any specific visual management direction provided in the affected RMP (e.g., 2008 *Moab Field Office Record of Decision and Approved Resource Management Plan*). In comparison, conformance with USFS LRMPs is contingent on meeting forest-wide and management area standards that may or may not require meeting the designated VQO.

At this point, it is important to introduce the two different levels of visual inventories that will be referenced and addressed in the visual assessment. The first level of visual inventories is the agency inventories conducted by the BLM (VRI) and USFS (VMS inventory) to catalog visual (scenic) values across their respective jurisdictions. Generally, these inventories are conducted at a planning level that focuses on the implementation of planning documents, including RMP amendments, and do not consistently address private lands or lands managed by other agencies.

To inventory, characterize, and assess visual resources for all alternative routes in a consistent manner, regardless of jurisdiction, and at a scale commensurate with a narrow, linear right-of-way project, a project-level inventory of scenery and views was conducted. This project-level inventory is the second level of visual inventory that will be described in Section 3.2.18.5. The project-level inventory and impact assessment were primarily focused in a 6-mile-wide visual resource study corridor, centered on the reference centerline for each alternative route under consideration for this EIS, to identify a range of impacts resulting from a 500kV transmission line as well as effective and practicable mitigation. However, areas outside of this visual resource study corridor were inventoried and assessed based on scoping comments, agency input, or where appropriate based on specific situations described in this section as well as in the Project Visual Resource Technical Report.

Table 3-238 presents a crosswalk of terms between these two levels of inventory to further describe the relationship between the BLM and USFS agency (planning-level) inventories and the project-level inventory in terms of scenery and views.

TABLE 3-238
AGENCY PLANNING-LEVEL AND PROJECT-LEVEL INVENTORY CROSSWALK

Inventory Element	Bureau of Land Management Visual Resource Management	U.S. Forest Service Visual Management System	Project-level
Scenery	Scenic Quality Rating Units	Variety Classes	Scenery Rating Units
Views – sensitivity to change	Sensitivity Level Rating Units	Sensitivity Levels	Concern Levels
Views – visibility	Distance Zones (general views of the landscape)	Distance Zones (general views of the landscape)	Influence Zones (Project-specific)

Scenery

Both the BLM and USFS inventory scenic qualities as they pertain to discrete scenery units are composed of harmonizing features that result in and exhibit a particular character. The BLM inventories Scenic Quality Rating Units (SQRUs) based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications and assign a scenic quality rating (Class A, Class B, and Class C) that generally relates to the diversity of these seven factors with Class A being the most diverse.

In a similar manner, the USFS also inventories scenery values through the identification of Variety Classes that are based on the premise that all landscapes have some value, but those landscapes with the most variety or diversity have the greatest potential for high scenic value. Variety Classes are rated using five features: landform, rock form, vegetation, water forms (lakes), and water forms (streams) that also form three rating classes (Class A, Class B, and Class C). It is important to note that these agency inventories do not provide consistent coverage across all Project alternative routes due to different inventory methods between the BLM and USFS visual management systems as well as on nonfederally administered lands traversed by the Project.

The inventory of project-level scenery rating units was conducted consistently across all lands, regardless of jurisdiction, in the visual resource study corridor. These scenery rating units were delineated through review of aerial imagery, GAP vegetation data, USGS topographic maps, and field investigations. In addition to these data sets, the project-level scenery rating units were compared with the BLM SQRUs and USFS Variety Classes to maintain consistency with the agency visual inventories. A modified version of *BLM Form 8400-1* was used to rate each project-level scenery rating unit based on the BLM's seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modification to develop three rating classes. Below are the definitions for each project-level scenery rating unit class:

- Class A – landscapes with distinctive or outstanding diversity or interest
- Class B – landscapes with common or average diversity or interest
- Class C – landscapes with minimal diversity or interest

A fourth classification was identified (developed) where existing land uses dominate the landscape character and do not contain the same characteristics as the adjacent landscapes (e.g., urban area). For more information on the development of the project-level scenery rating units and a copy of each scenery rating unit rating form, refer to the Project Visual Resource Technical Report.

Views

The BLM inventories two components related to the project-level inventory of views, Sensitivity Level Rating Units (SLRUs) and distance zones. In particular, SLRUs are inventoried to define the level of concern the public would express toward the visible modification of a particular landscape. The BLM assigns either a high, medium, or low sensitivity level that corresponds to the level of public concern. The inventory of distance zones is based on the perception of scenery from particular viewing locations and has primarily been based on each BLM field office's travel management plan or key travel routes. Three distance zones are inventoried by the BLM: foreground-middleground (less than 5 miles), background (5 to 15 miles), and seldom seen (beyond 15 miles or not seen).

Similar to the BLM, the USFS identifies sensitivity levels and distance zones to measure the public's concern for scenic quality of national forests. An important distinction between the BLM and USFS viewer inventory methods is that the USFS identifies specific viewing platforms (e.g., trails, campgrounds, visitor centers, recreation areas), which are given one of three sensitivity levels: Level 1 (highest sensitivity), Level 2 (average sensitivity), and Level 3 (lowest sensitivity). The USFS also inventories distance zones from these viewing platforms using the following definitions: foreground (less

than 0.25 or 0.5 mile [determined on a case-by-case basis]), middleground (extending beyond the foreground distance zone to 3 or 5 miles [determined on a case-by-case basis]), and background (extending beyond the middleground distance zone to infinity). Typically these two components are presented together to represent sensitivity levels. In other words, a given area of land would be inventoried as being in the foreground of a Level 1 viewer.

To develop an inventory of places where the public (casual viewers) potentially would view the Project in a consistent manner across all lands, regardless of jurisdiction, project-level viewing locations were inventoried in the visual resource study corridor. The identification of viewing locations does not relate to specific landscapes, like the BLM SLRUs, but instead focuses on specific viewing locations (e.g., Aspen Grove Campground). Some of these specific viewing locations also were used as KOP locations to assess compliance with federal agency visual management objectives where identified by agency visual resource specialists/landscape architects. Viewing locations were identified through review of aerial photography; agency LRMPs and RMPs; federal and online databases; consultation with federal, state, and local visual resource/recreation planners; and extensive field investigations. As stated earlier, these viewing locations typically are associated with one of the following categories: (1) residences, (2) travel routes, (3) recreation areas, and (4) special designations. After specific viewing locations were identified, a concern level was assigned based on the degree of concern for changes to the landscapes in the viewer's associated viewshed.

The process for assigning a concern level was based on the criteria and methods for determining Sensitivity Levels described in BLM Manual 8410-1*,* as well as Sensitivity Levels described in Agricultural Handbook Number 462. To determine the concern level for each project-level viewing location (high, moderate, low), the following five factors were reviewed, in context with the underlying, where available, BLM SLRUs and the USFS Sensitivity Levels: (1) viewing duration, (2) volume of use, (3) concern for aesthetics, (4) scenic or historic status, and (5) type of use (residential, travel routes, recreation areas, and special designations). It is important to note that the information used to determine these concern levels was based on best available data, a review by agency visual resource specialists, field investigations, and professional judgment. Also, if one of these factors is of particular interest, it may raise the overall concern level. For example, a single residence would experience long duration views of the Project and would be assigned a high concern level even though there is a low volume of use. Volume of use has less of a direct effect on the overall concern level but was important when, based on other criteria, the overall concern level was between a high and moderate.

The concern level factor that was most directly tied to the overall concern level is concern for aesthetics. This factor was based mostly on coordination with local BLM or USFS visual resource specialists, field investigations, public comments, and professional judgment, which focused on the level of anticipation for an intact viewshed. For example, viewers driving on a road that accesses a wilderness area would generally have a higher concern for views than motorists traveling on an interstate highway. Similarly, viewing locations with a scenic or historic status (designation) were generally given a high concern level as these areas typically have viewsheds managed for aesthetics as part of either the National Landscape Conservation System; National Scenic Byways Program; National Trails System; National Register of Historic Places (NRHP) or other national, state, or local scenic/historic designations. Concern for aesthetics did not include the rating of the landscape viewed, as this would conclude views of Class A scenery are more important than views of Class C. The effects of the Project on landscape character and scenic quality are described in the previous section, Impacts on Scenery.

The final factor, type of use (residences, travel routes, recreation area, or special designation), is key as it provides the context for the other factors used to determine a viewer's overall concern level (i.e., a long-duration view from a travel route would differ from a long-duration view from a recreation area). The overall concern level for project-level viewing locations is of particular importance during the viewer

impact assessment process because this information is used to distinguish viewer impacts amongst the different Project alternative routes. In other words, a similar level of change in the viewshed of a high concern viewing location would produce a higher impact on views than a similar level of change viewed from a moderate concern viewer. Viewing locations determined to have a low concern level were not included in the assessment of impacts on views, as views from industrial or commercial areas generally have limited sensitivity.

Influence zones are the other component inventoried as part of the project-level viewing location inventory and are associated with the relative visibility of the Project. The concept is similar to the distance zones delineated by the BLM and USFS as part of their planning-level inventories, but influence zones are based on the dominance of the proposed Project (i.e., a 500kV transmission line with associated access roads and vegetation clearing) for identifying impacts on views from sensitive viewing locations. Based on the findings described in the report, *Measuring the Visibility of H.V. Transmission Facilities in the Pacific Northwest* (Jones & Jones 1976), as well as decades of experience conducting visual studies for transmission line projects across the western U.S., project-level influence zones were developed for the Project. It is important to note that even though the Jones & Jones study was conducted in the Pacific Northwest, the study analyzed the visibility of transmission lines across a range of vegetation types and slope conditions using several different transmission line structures, including a 500kV lattice tower. The project-level influence zones were verified and calibrated through field reconnaissance, as well as photo documentation of existing transmission lines of similar design, which is described in the Project's Visual Resource Technical Report.

Below are the five influence zones used to assess impacts on views from identified project-level viewing locations:

- 0 to 0.5 mile
- 0.5 to 1 mile
- 1 to 2 miles
- 2 to 3 miles
- Beyond 3 miles

For more information on the assessment of impacts on views, refer to Section 3.2.18.5.2. A detailed list of the identified viewing locations, as well as additional information on the development of concern levels, is included in the Project Visual Resource Technical Report.

Compliance with Federal Agency Visual Management Objectives

As stated previously, both the BLM and USFS assign agency visual management objectives through the land-use planning process to guide both planning- and project-level decisions. The process to assess compliance with BLM VRM Class objectives differs from USFS VQOs; in addition, the process for determining conformance with agency LRMPs and RMPs differs between the BLM and USFS, both of which are described below.

Bureau of Land Management

The BLM is responsible for managing visual resource values in accordance with VRM objectives established through the land-use planning process and designated in the RMP. BLM Manual Handbook 8410-1 defines four VRM Class objectives (Class I-Class IV) that describe an allowable level of change that can occur to the landscape character and the attention the change can attract. Compliance with VRM Class objectives is assessed using a Project-specific analysis from KOPs to evaluate the visual contrast resulting from the Project compared to the existing landscape character and the definition of the applicable VRM Class objective. Visual contrast rating worksheets (BLM Form 8400-4) were prepared

from 89 KOPs to confirm and document compliance, or noncompliance with VRM Class objectives as well as to identify the application of mitigation measures. The following criteria were intrinsically integrated in the analysis and presented, where applicable, on the contrast rating worksheets located on (or viewing) BLM-administered lands in accordance by BLM Manual 8431 (BLM 1986):

(1) Distance: The contrast created by a project usually is less as viewing distance increases.

(2) Angle of Observation: The apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope on which the project is to take place. As this angle nears 90 degrees (vertical and horizontal), the maximum area is viewable.

(3) Length of Time the Project Is In View: If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.

(4) Relative Size or Scale: The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is placed.

(5) Season of Use: Contrast ratings should consider the physical conditions that exist during the heaviest or most critical visitor use season, such as snow cover and tree defoliation during the winter, leaf color in the fall, and lush vegetation and flowering in the spring.

(6) Light Conditions: The amount of contrast can be substantially affected by the light conditions. The direction and angle of lighting can affect color intensity, reflection, shadow, form, texture, and many other visual aspects of the landscape. Light conditions during heavy periods must be a consideration in contrast ratings.

(7) Recovery Time: The amount of time required for successful revegetation should be considered. Few projects meet the VRM management objectives during construction activities. Recovery usually takes several years and goes through several phases (e.g., bare ground to grasses, to shrubs, to trees, etc.). It may be necessary to conduct contrast ratings for each of the phases that extend over long time periods. Those conducting contrast rating should verify the probability and timing of vegetative recovery.

(8) Spatial Relationships: The spatial relationship within a landscape is a major factor in determining the degree of contrast.

(9) Atmospheric Conditions: The visibility of projects due to atmospheric conditions such as air pollution or natural haze should be considered.

(10) Motion: Movement such as waterfalls, vehicles, or plumes draws attention to a project.

In the following table are the four VRM Class objectives as described in BLM Manual Handbook 8410-1.

TABLE 3-239
BUREAU OF LAND MANAGEMENT VISUAL RESOURCE MANAGEMENT CLASSES

Visual Resource Management Class	Objective
Class I	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 [contrast] to the characteristic landscape should be very low and must not attract attention.
Class II	Retain the existing character of the landscape. The level of change [contrast] to the characteristic landscape should be low. Management activities may be seen but should not attract 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.
Class III	Partially retain the existing character of the landscape. The level of change [contrast] 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.
Class IV	Provide for management activities that require major modifications of the existing character of the landscape. The level of change [contrast] 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.

SOURCE: Bureau of Land Management 1986

U.S. Forest Service

The Forest Service establishes VQOs through the forest planning process using Agricultural Handbook Number 462 for the three national forests crossed by the Project (Uinta-Wasatch-Cache, Manti-La Sal, and Ashley). VQOs are used to describe the acceptable level of alteration that can be made to the natural characteristic landscape, as described in Table 3-240. Since no methodology for assessing consistency (or compliance) with VQOs is described in Agricultural Handbook Number 462, KOPs also were identified on USFS-administered lands and assessed using contrast rating worksheets in a manner similar to KOPs on BLM-administered lands. It is important to note that the contrast rating worksheets were not the only component used to assess consistency with VQOs as impacts on views and scenery also were reviewed to determine where the Project would not be consistent with the definition of the VQO crossed.

TABLE 3-240
U.S. FOREST SERVICE VISUAL QUALITY OBJECTIVE LEVELS

Visual Quality Objective	Description
Preservation	Allows ecological changes only. Management activities, except for very low visual impact recreation facilities, are prohibited.
Retention	Provides for management activities which are not visually evident. Activities may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, pattern, etc., should not be evident.

TABLE 3-240
U.S. FOREST SERVICE VISUAL QUALITY OBJECTIVE LEVELS

Visual Quality Objective	Description
Partial Retention	Management activities remain visually subordinate to the characteristic landscape when managed according to the partial retention visual quality objective. Activities may repeat form, line, color, and texture common to the characteristic landscape, but changes in their qualities of sizes, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture which are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape.
Modification	Management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate to the proposed composition. Activities which are predominately introduction of facilities such as buildings, signs, roads, etc., should borrow naturally established form, line, color, and texture so completely and at such scale that its visual characteristics are compatible with the natural surroundings.
Maximum Modification	Management activities of vegetative and landform alteration may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middle ground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alteration may also be out of scale or contain detail which is incongruent with natural occurrences as seen in foreground or middle ground. Introduction of additional parts of these activities such as structures, roads, slash, and root wads must remain visually subordinate to the proposed composition as viewed in background.

SOURCE: U.S. Forest Service 1974

Conformance with the USFS LRMPs was based on a review of applicable forest-wide and management area standards that a project must meet; otherwise a plan amendment would be required. In addition, each management plan identifies forest-wide and management area guidelines that a project must strive to meet as well as providing rationale for additional project mitigation.

3.2.18.4.1 Affected Environment (Inventory)

The methodology used to define the Project's affected environment is consistent with the BLM VRM system and USFS VMS, as previously described with the addition of a project-level inventory of scenery rating units and viewing locations. The following items were inventoried on all lands in the visual resources study corridor and presented as the Project's affected environment:

- **Scenery.** Project-level scenery rating units
- **Viewing Locations.** High and moderate concern project-level viewing locations, including residences, travel routes, recreation areas, and special designations
- **Federal Agency Visual Management Objectives.** Pertinent federal agency visual management objectives (BLM VRM Classes and USFS VQO)
- **BLM Visual Resource Inventory Components.** BLM VRI components including SQRUs, SLRUs, distance zones, and VRI Classes traversed by the Project

For the detailed inventory study methodology, refer to the Project Visual Resource Technical Report.

3.2.18.4.2 Impact Assessment and Mitigation Planning

The process used to assess the potential impacts on visual resources associated with the implementation of the Project includes (1) identifying the types of potential environmental effects that could result from construction, operation, and maintenance of the proposed Project; (2) developing criteria for assessing the level of a potential effect (e.g., high, moderate, and low impacts); (3) comparing visual elements (form, line, color, and texture) found in the existing landscape with the visual elements associated with the proposed Project (project contrast); (4) assessing initial impacts; (5) identifying appropriate mitigation measures for minimizing potential adverse effects; and (6) disclosing potential residual impacts. This impact assessment methodology was developed in consultation with BLM and USFS visual resource specialists and is described below.

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project would result in direct effects on visual resources where:

- **Scenery.** Scenery would be degraded by the presence of vertical elements in the landscape (transmission line structures), areas of cleared vegetation (right-of-way clearing), and exposed soil from the construction of new permanent access roads, tower work areas, and other ancillary facilities (e.g., series compensation stations).
- **Views.** Viewsheds from identified viewing locations would be adversely modified through the introduction of Project components into the landscape.

In addition to impacts on the human environment (scenery and views), compliance with agency visual management objectives (BLM VRM Classes and USFS VQOs) and conformance with agency LRMPs and RMPs were assessed. It is important to note these are not referred to as impacts in this section, as defined by BLM Manual 8431, but instead are consistent with CEQ regulations as described in Section 2.7.1.

- **Federal Agency Visual Management Objectives:** The Project would not comply with federal agency visual management objectives where Project components would contrast with or modify the characteristic landscape to a level that would not be consistent with the established federal agency visual management objectives or applicable planning documents.

Refer to Section 2.3 for information on the typical design characteristics of the Project including, but not limited to, structure types and materials, right-of-way width, right-of-way vegetation clearing, access road design, and ancillary facilities.

Criteria for Assessing Level of Impacts

Criteria were developed to assess the level of potential effects associated with implementation of the Project (Table 3-241). These criteria form the baseline for determining whether an impact on scenery or views would occur at a high, moderate, or low level.

TABLE 3-241 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON VISUAL RESOURCES	
Level of Impacts	**Description**
High	▪ **Scenery**. Modification of high quality, diverse, and rare or unique scenery (Class A or B) that results in a high level of change (contrast) to their character ▪ **Views**. Contrast produced by the Project would demand attention and dominate views from high concern viewing locations where form, line, color, and texture of Project components would be incongruent with existing landscape features (including existing structures); or where the Project would completely dominate views and would not be overlooked from moderate concern viewing locations.
Moderate	▪ **Scenery**. The inherent quality of interesting, but not outstanding, landscapes (Class B or C) would be modified without substantially altering their character ▪ **Views**. Contrast produced by the Project would attract attention from high concern viewing locations and would be co-dominant with existing landscape features; or where contrast produced by the Project would demand attention and dominate views from moderate concern viewing locations.
Low	▪ **Scenery**. Minimal change to the existing character of interesting and common landscapes (Class B or C) ▪ **Views**. Contrast produced by the Project would be subordinate to existing landscape features and would not be readily apparent from high concern viewing locations; or where the Project would attract attention from moderate concern viewing locations and would be co-dominant with, or subordinate to, existing landscape features.

Effects Analysis

Project Contrast

Project contrast is the key component used to evaluate impacts on scenery and views as it assesses the level of change produced by the Project. It is defined as the contrast generated by the proposed Project's visual elements (form, line, color, and texture) compared to the existing condition of the landscape. While similar to the BLM's concept of visual contrast, project contrast does not factor in all of the 10 human and environment factors as it is generated, regardless from where the Project would be viewed. Through the assessment of the contrast produced by the Project's structural elements when compared to structures in the existing landscape (structure contrast), as well as the contrast generated by ground-disturbing activities and vegetation clearing (landscape contrast), project contrast was produced by combining these two components, which were characterized with levels ranging from weak to strong along all alternative routes. For example, the Project would have a stronger level of structure contrast if the Project were traversing an area with no existing transmission lines than an area where the Project closely parallels an existing transmission line with similar design characteristics. Likewise, if the Project traversed a steep, heavily forested landscape, the level of landscape contrast would be higher than traversing a level, sagebrush plain landscape due to an increase in the area modified by the Project (i.e., more extensive access road construction and right-of-way vegetation clearing). For more information on the development of project contrast, including matrices for determining structure, landscape, and project contrast, refer to the Project Visual Resource Technical Report.

Assessment of Initial Impacts

Scenery

Initial impacts on scenery were identified based on the evaluation of project contrast (landscape change) in context with the project-level scenery rating units. More specifically, the level of project contrast was compared to the rating (Class A, Class B, or Class C) of the project-level scenery rating unit crossed by the Project in context with the criteria for assessing level of impacts (Table 3-241).

Viewing Locations

To identify initial impacts on views, project contrast was evaluated in context with the project-level viewing locations. This process included the identification of the concern level for each viewer (high or moderate), project-specific influence zones (0 to 0.5 mile, 0.5 to 1 mile, 1 to 2 miles, 2 to 3 miles, or more than 3 miles), and the level of project contrast in conjunction with field observations of site-specific variations in viewing factors (e.g., position, orientation, etc.). The resulting impact level (high, moderate, or low) was analyzed in context with the criteria for assessing level of impacts (Table 3-241).

Federal Agency Visual Management Objectives

To determine compliance with BLM VRM Classes in a manner consistent with BLM Manual 8431, a contrast analysis was conducted from BLM-approved KOPs using BLM Form 8400-4 – Visual Contrast Rating Worksheet (Appendix N). As mentioned previously, since no methodology for assessing consistency with VQOs is described in Agricultural Handbook Number 462, contrast rating worksheets were prepared from KOPs on (or viewing) USFS-administered lands (Appendix N), which were reviewed in context with impacts on scenery and views to determine the level of alteration to the natural characteristic landscape. In addition to the KOPs used to assess compliance with both BLM and USFS agency visual management objectives, KOPs were located on the Uintah and Ouray Indian Reservation, National Park Service, state-administered, and private lands to confirm the accuracy of the impact assessment models, in a consistent manner, across the entire Project.

Bureau of Land Management Visual Resource Inventory Components

To provide BLM decision-makers the information necessary to understand the influence of the Project on the BLM VRI, including the alteration to the existing balance of this resource across each BLM field office, effects on BLM SQRUs were analyzed in this visual assessment. Effects on other components of the BLM VRI—including SLRUs, distance zones, and VRI Classes—would be abstract to quantify since a narrow linear utility would not necessarily modify these components. For example, the sensitivity of views from a scenic byway would not be reduced based on the introduction of the Project; whereas, the impact resulting from the Project would be on the views experienced by motorists driving the scenic byway (refer to impacts on project-level viewing locations). To assess effects on BLM SQRUs, the area of each SQRU that would be traversed by the Project (identified in the affected environment) was first calculated by the BLM field offices. The next step was to identify the influence of the Project on the SQRUs, which was previously identified as the visual resource study corridor (6-mile-wide corridor centered on the reference centerlines) or where the most intense impacts on scenery and viewers would occur. To present effects on SQRUs, the acreage of the entire SQRU was compared to the number of acres influenced by the Project in that particular SQRU. In addition, the percentage of each SQRU influenced by the Project was calculated to display the extent of the modification compared to the overall unit. If effects occur on a unique resource, such as the only Class A SQRU in a BLM field office, this information was presented as well. This method differs from the process to identify project-level impacts on scenery and views.

Mitigation Planning

Design features of the Proposed Action (Table 2-8), such as using non-specular conductors, would be applied Project-wide and, therefore, are considered in the initial impact levels. Selective mitigation measures (Table 2-13) were considered on a case-by-case basis based on the level of initial impacts, as described in Section 2.7.1.2, to mitigate site-specific resource impacts. For visual resources, a total of 13 selective mitigation measures were proposed for the Project (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, and 16). These measures were applied in areas of potential high and moderate initial impact to reduce the level of residual impacts. Selective mitigation measures also were applied to areas not compliant with BLM VRM

Classes or inconsistent with USFS VQOs to bring the Project into compliance. Selective mitigation measures identified to reduce effects on the human environment (impacts on scenery and views) are described in Section 3.2.18.5, but all mitigation measures to address noncompliance with federal agency visual management objectives (and nonconformance with associated management plans) are identified on the KOP contrast rating worksheets located in Appendix N. Portions of the Project assessed to result in a low initial impact were evaluated on a case-by-case basis to determine the effectiveness of mitigation to further reduce impacts. As described in Section 2.4, the POD will further refine the application of mitigation for the development and implementation of the Project.

- **Selective Mitigation Measure 1 (disturbance to sensitive soils and vegetation)** was applied where existing access potentially would need to be widened or upgraded for construction and maintenance. It would reduce landscape contrast, particularly modifications to the existing landscape's line and color elements by reducing the widening and additional clearing of adjacent vegetation for access.
- **Selective Mitigation Measure 2 (sensitive resources avoidance)** was applied where flat terrain and vegetation would allow for cross-country access. It would reduce landscape contrast by limiting the amount of soil color exposed during the construction process, which reduces contrast between the color of the soil and vegetation, and allows for accelerated vegetation recovery.
- **Selective Mitigation Measure 3 (minimize slope cut and fill)** was applied in areas of access level 2, 4, 5, and 6 (i.e., areas where switchbacks would likely be required for construction and maintenance). It would reduce landscape contrast created by new access roads through the reduction of earthwork in sloped areas where grading could expose underlying soils, which could increase color, form, and texture contrast.
- **Selective Mitigation Measure 4 (minimize tree clearing)** was applied where the transmission line crosses overstory vegetation (deciduous forest, mixed conifer forest, pinyon-juniper, or oak stand). It would reduce impacts by decreasing landscape contrast created by the removal of overstory vegetation (trees) and the hard visual line created by the cleared right-of-way/forest interface.
- **Selective Mitigation Measure 5 (minimize new or improved accessibility)** was applied where access and tower pads needed for construction, but not for maintenance, would be rehabilitated. It would reduce the modification of the line and color elements of landscape contrast through rehabilitating access roads and tower pads not required beyond construction.
- **Selective Mitigation Measure 6 (tower design modification)** was applied where certain tower types (or finish materials) would match existing towers of parallel transmission lines, or where certain tower types (or finish materials) would have greater absorption into the surrounding landscape. It would reduce structure contrast by limiting the number of different transmission tower types that would be viewed, as well as by using the varied texture of background landforms to backdrop the structures so they would blend into the landscape.
- **Selective Mitigation Measure 7 (span and/or avoid sensitive features)** was applied where visually sensitive features could be avoided with adjustments to the reference centerline and access routes.
- **Selective Mitigation Measure 8 (match transmission line spans)** was applied where an existing transmission line is paralleled to reduce impacts. It would modify the standard tower spacing, where feasible, to better match that of the adjacent existing structures, therefore reducing the line and form elements of structure contrast.
- **Selective Mitigation Measure 9 (maximize span at crossing)** was applied where the transmission line crosses a sensitive feature at a perpendicular or near perpendicular angle to

offset the proposed structure from a trail, road, scenic byway, or other sensitive viewpoint to the greatest extent practicable, thereby reducing dominance of the transmission line structures in a viewer's viewshed and/or particular landscape setting.

- **Selective Mitigation Measure 10 (helicopter construction)** was applied in limited locations where access is difficult due to steep terrain. Helicopter construction would reduce landscape contrast, particularly on form, line, and color elements by limiting the amount of landform disturbance and vegetation removal created by the construction of new access roads.
- **Selective Mitigation Measure 11 (minimize right-of-way clearing)** was applied where clearing of the right-of-way could be minimized. Similar to Selective Mitigation Measure 4, this mitigation measure would reduce impacts by decreasing landscape contrast created by removal of vegetation and the hard visual line created by the cleared right-of-way.
- **Selective Mitigation Measure 13 (overland access)** was applied in flat areas where no grading would be needed to access work areas. Similar to Selective Mitigation Measure 2, the use of this selective mitigation measure would reduce landscape contrast by limiting the amount of soil color exposed during the construction process, which limits contrast between the color of the soil and vegetation.
- **Selective Mitigation Measure 16 (blend road cuts or grading)** was applied where grading in steep rocky areas creates strong contrast in the landscape. Blending and/or coloring areas of cut and fill would reduce contrast between the exposed ground and the surrounding environment. This mitigation measure can only be applied in disturbed areas comprised of rock faces, large boulders, or exposed granite.

Residual Impacts

After the evaluation and application of selective mitigation measures, impacts were assigned a residual impact level of high, moderate, or low based on the potential effectiveness of the mitigation. In addition to these methods, a total of 51 visual simulations were prepared from agency-approved KOP locations to further describe impacts on viewing locations and illustrate compliance (or noncompliance) with agency visual management objectives. The simulations are located in Appendix N and the methodology describing their development is in the Project Visual Resource Technical Report. During preparation of the Draft EIS, the typical structure type (lattice steel structure [delta configuration]) was used to prepare the visual simulations across the Project area. Due to changes in the Project description since the Draft EIS (Chapter 2), there are new typical structure types (guyed-V and lattice steel structure [horizontal configuration]). Based on this change in the Project design, an approach was developed with the BLM to update key visual simulations with the new typical structures in three situations: (1) views of the agency-preferred alternative route, (2) to inform routing decisions where multiple alternative routes were simulated from a single point, and (3) where noncompliance with BLM VRM Class objectives was identified and a plan amendment was proposed. Note, the lattice steel structure (delta configuration) is still included as a potential tower type in the Project description. For the detailed impact assessment methodology, refer to the Project Visual Resource Technical Report.

3.2.18.5 Results

3.2.18.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists.

3.2.18.5.2 Impacts Common to All Action Alternatives

As described in Types of Potential Environmental Effects, the Project would affect scenery based on the introduction of Project components (i.e., access roads, right-of-way clearing, and transmission line structures) that would be incongruent with the existing landscape character in naturally appearing areas. Also, the Project would affect views where viewsheds could be adversely modified by Project components (i.e., public viewing areas with a sensitivity to landscape change). Due to the unique consideration of effects on particular landscapes and views, the affected environment and environmental consequences for each alternative route has been described in the following section.

3.2.18.5.3 345-kilovolt Ancillary Transmission Components

The landscapes traversed by the 345kV ancillary transmission components have been heavily influenced by several existing high-voltage transmission lines, the Mona and Clover substations, and an adjacent power generation facility. Due to the presence of these existing landscape modifications, which yield a strong industrial character and dominate views from viewing locations in the area, low impacts on scenery and viewers would occur. Scenery in this area is typical of the Basin and Range physiographic province, including the nearly level sagebrush basin that has been partially converted to agriculture development. Views of this area from Mona, and adjacent viewing locations, are dominated by the existing landscape modifications, which exhibit strong symmetrical line and form and consistent grey color tones, all of which are replicated by the Project.

These ancillary transmission components would be located in VRM Class III lands; but due to the strong visual presence of existing infrastructure, visual contrast was determined to be at a weak level (refer to contrast analysis completed from KOP #215 – Mona residential). As such, the Project would be compliant with the objectives identified by the BLM for VRM Class III lands.

As inventoried by the BLM, these facilities would be located in the following components of the Fillmore Field Office VRI:

- Scenic Quality: Dog Valley SQRU (Class B)
- Sensitivity Level Rating Units: I-15 SLRU (moderate sensitivity)
- Distance Zones: Foreground/middleground
- VRI Classes: VRI Class III

3.2.18.5.4 500-kilovolt Transmission Line Components

As described in Issues Identified for Analysis, Table 3-242 includes the detailed list of scenery concerns raised during scoping and refers to the appropriate Project alternative routes. In a similar manner, Table 3-243 includes the scoping issues associated with impacts on views. The third table (Table 3-244) identifies which BLM field office and USFS national forests would be potentially traversed by each alternative route. Maps 3-8 through 3-13 present the BLM and USFS visual management classes or objectives used for determining visual resources as well as the BLM VRI components.

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The baseline resource inventory and residual impacts for the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes are presented in Tables 3-245 and 3-246.

TABLE 3-242
SCENERY ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Wyoming													
Adobe Town region. This area was designated by the State of Wyoming as a very rare or uncommon area that also was recognized by the Bureau of Land Management Rawlins Field Office 2008 Resource Management Plan. Unique landscapes are located in the Adobe Town Wilderness Study Area and adjacent lands, including Willow Creek Rim, the Haystacks, and Powder Mountain.	MV-23a		✓										
Rural landscape character.[1] Throughout the Project area, a multitude of landscapes are defined by a rural character produced by swaths of irrigated agriculture that contrast with adjacent, semi-arid natural lands. Dispersed residences also are located throughout these landscapes, adding to the rural character.	MV-23a	✓	✓	✓	✓								
Colorado													
Book Cliffs.[1] The Book Cliffs stretch from Grand Junction, Colorado, to Price, Utah, and are characterized by a bold rocky continuous cliff face surrounded by eroded alluvial debris formations.	MV-23b					✓	✓	✓					
Grand Valley.[1] Located south of the Book Cliffs in western Colorado, this broad valley encompasses the communities of Grand Junction, Fruita, and Palisade. Agricultural development is the primary land use and defines the character of this landscape.	MV-23b					✓	✓	✓					
Little Snake River Valley.[1] This landscape is characterized by a broad river valley with a well-defined riparian corridor surrounded by agricultural fields with few additional landscape modifications.	MV-23a			✓									
Yampa River landscape	MV-23a			✓									
Tavaputs Plateau landscape	MV-23b					✓	✓	✓					
Rural landscape character.[1] Refer to Wyoming description	MV-23a, b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

TABLE 3-242
SCENERY ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Utah													
Argyle Canyon.[1] This landscape is characterized by steeply sloping canyon walls and a riparian corridor that flows through this minimally modified canyon. Development is limited to summer cabins and agricultural fields except for a 138-kilovolt transmission line located in the upper portion of the canyon.	MV-23b									✓	✓	✓	✓
Bad Land Cliffs landscape	MV-23b										✓	✓	✓
Book Cliffs.[1] Refer to Colorado description	MV-23b											✓	✓
Green River landscape	MV-23b										✓	✓	✓
Strawberry River landscape	MV-23b								✓				
Tavaputs Plateau landscape	MV-23b										✓	✓	✓
Wasatch Plateau Alpine landscape	MV-23b					✓	✓						✓
Wasatch Plateau landscape	MV-23b							✓				✓	
Wasatch Plateau Parks landscape	MV-23b							✓				✓	✓
Rural landscape character.[1] Refer to Wyoming description	MV-23b					✓	✓	✓	✓	✓	✓	✓	✓

NOTE: [1]Issue identified during scoping

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Wyoming													
Residences													
Baggs.[1] Located in a broad river valley, the town of Baggs has residential development along Wyoming Highway 70 and 789, which may have views of the Project.	MV-21a			✓									
Rawlins.[1] Located along Interstate 80 (I-80), Rawlins is the largest city between Laramie and Rock Springs. A large number of residences may have views of the Project south of I-80.	MV-21a	✓	✓	✓	✓								
Little Snake River Valley residences.[1] Residences are scattered throughout the Little Snake River Valley. Their viewsheds have been modified minimally by development and would be sensitive to modification from the Project.	MV-21a			✓									
Dispersed residences.[1] Due to the large amount of dispersed residences located throughout the Project area, dispersed residences would be located in proximity to the majority of the alternative routes.	MV-21a	✓	✓	✓	✓								
Travel Routes													
Outlaw Trail Loop Scenic Drive (Wyoming Highway 789).[1] Designated by Carbon County as a scenic drive, this issue area encompasses Wyoming Highway 789 from Baggs to Creston Junction. The Project would parallel the scenic road for approximately 35 miles.	MV-21a			✓									
I-80.[1] This interstate provides a link between Cheyenne, Wyoming, and Salt Lake City, Utah, as well as connecting the cities of Rawlins, Green River, and Rock Springs, Wyoming. Approximately 15 miles east of Rawlins, the Project crosses the interstate then parallel the road approximately 4 miles away.	MV-22a	✓	✓	✓	✓								
Lincoln Highway (U.S. Highway 30).[1] This historic highway linked New York City, New York, to San Francisco, California; in some locations this historic alignment is shared with modern highways. In the Project area, this historic alignment roughly parallels U.S. Highway 30 until Walcott Junction, where it then follows I-80.	MV-22a			✓									
Hanna Draw Road	MV-22a	✓	✓		✓								

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Recreation Areas													
Continental Divide National Scenic Trail.[1] This national scenic trail roughly follows the Continental Divide of the Americas from the United States. border with Canada to Mexico. The portion of the trail crossed by the Project is located approximately 1.5 miles west of Wyoming Highway 71, 4 miles southwest of Rawlins.	MV-21a	✓	✓	✓	✓								
Cherokee Historic Trail.[1] This historic trail, recognized by the Bureau of Land Management (BLM), was blazed by both whites and members of the Cherokee Nation to reach California in the first 2 years of the Gold Rush. In 1849 wagon trains chose a route across the Laramie Plains and the Red Desert that closely parallels present-day I-80. The 1850 parties pioneered a different route, following the Wyoming/Colorado border until reaching Fort Bridger.	MV-21a	✓	✓	✓	✓								
Overland Historic Trail.[1] This historic trail, recognized by the BLM, was established by Ben Holladay as a shorter, safer route for his Overland Stages that had been previously operating along the Oregon Trail system through South Pass. Stagecoaches used this route between 1862 and 1869.	MV-21a	✓	✓	✓	✓								
Rawlins to Baggs Road (historic trail).[1] The Rawlins to Baggs Road, a historic trail recognized by the BLM, was a stage and freight connection from the Union Pacific Railroad in Rawlins to local ranches. The road was used from 1875 to 1917 and ran from Rawlins into Colorado.	MV-21a	✓	✓	✓	✓								
Little Robber Reservoir.[1] Located approximately 10 miles north of Baggs, Wyoming, Little Robber Reservoir includes a designated BLM recreation area used primarily for fishing.	MV-22a				✓								
North Platte River.[1] From its headwaters in North Park, Colorado, the river flows more than 700 miles east to its confluence with the Platte River in Nebraska. The Project crosses the river 15 miles east of Rawlins, Wyoming, in an area designated as a special recreation management area.	MV-21a	✓	✓	✓	✓								
Rim Lake Recreation Site.[1] This site is located 6 miles south of Rawlins along Wyoming Highway 71. The recreation site consists of a boat ramp and fishing access.	MV-21a	✓	✓	✓	✓								

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Dispersed recreation.[1] Since the majority of the Project alternative routes are located on public lands, dispersed recreation is a key use and includes big-game hunting, geocaching, camping, and fishing, as well as a variety of other recreational uses.	Not applicable	✓	✓	✓	✓								
Special Designations													
Fort Fred Steele State Historic Site.[1] Designated by the State of Wyoming as a historic site, the site allows visitors to tour several buildings from Fort Fred Steele.	MV-21a	✓	✓	✓	✓								
Continental Divide NST Special Recreation Management Area	MV-21a	✓	✓	✓	✓								
North Platte Special Recreation Management Area	MV-21a	✓	✓	✓	✓								
Red Rim-Daley Wildlife Habitat Management Area.[1] This management area is located 10 miles west of Rawlins, Wyoming, along I-80. Recreation opportunities include hiking, dispersed camping, and big-game hunting.	MV-22a	✓	✓	✓	✓								
Upper Muddy Creek Watershed/Grizzly Wildlife Habitat Management Area.[1] This management area is 40 miles north of Baggs, Wyoming, east of Wyoming Highway 789. Recreation opportunities include fishing, hiking, dispersed camping, and big-game hunting.	MV-22a			✓									
Colorado													
Residences													
Dispersed residences.[1] Refer to Wyoming description	MV-21a, b	✓	✓	✓	✓	✓	✓	✓					
Travel Routes													
Dinosaur Diamond Scenic Byway.[1] The Dinosaur Diamond Scenic Byway encompasses more than 500 miles of roads in Utah and Colorado. The section of the scenic byway along Colorado State Highway 139 south of Rangely, Colorado, is of particular concern as it passes through the Canyon Pintado National Historic District.	MV-21b					✓	✓	✓	✓	✓	✓	✓	✓
U.S. Highway 40 (area east of Craig)	MV-22a			✓									
Demaree Wilderness Study Area (WSA) Baxter Pass Destination Route	MV-21b					✓	✓	✓					

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Oil Spring Mountain WSA Destination Route	MV-21b					✓	✓	✓					
Rabbit Valley Recreation Destination Route	MV-22b					✓	✓	✓					
Rio Blanco County Road 23	MV-22b					✓	✓	✓					
Sevenmile Ridge Destination Route (proposed back country byway)	MV-22a	✓	✓		✓								
Recreation Areas													
Crook's Brand, Carrot Men, and Fremont Ridge rock art sites	MV-21b					✓	✓	✓					
Sevenmile Ridge recreation areas[1]: Moffat County Road 75 is located along Sevenmile Ridge, which provides access to a variety of dispersed recreation opportunities, including wild horse viewing, all-terrain vehicle riding, and big-game hunting.	MV-22a	✓	✓		✓								
Yampa River	MV-21a	✓	✓	✓	✓								
Yampa Valley Trail.[1] The Yampa Valley Trail is a 100-mile-long trail, open to motorized and non-motorized use, located between Maybell, Colorado, and Dinosaur National Monument.	MV-21a	✓	✓	✓	✓								
Dispersed recreation.[1] Refer to Wyoming description	Not applicable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Special Designations													
Dinosaur National Monument.[1] Established in 1915, the Dinosaur National Monument provides access for visitors to view partially exposed fossils at the Quarry Visitors Center, as well as a multitude of outdoor recreation opportunities along the Yampa and Green rivers.	MV-21a,b	✓	✓	✓	✓				✓	✓	✓	✓	✓
Cross Mountain WSA.[1] This WSA is centered on a scenic canyon along the Yampa River that provides a variety of water-based recreation but is most frequently used by whitewater rafters. In addition, this area is used by hunters and hikers.	MV-21a	✓	✓		✓								
Demaree WSA	MV-21b					✓	✓	✓					
Oil Spring Mountain WSA	MV-21b					✓	✓	✓					

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Canyon Pintado National Historic District.[1] Established to protect cultural resources throughout the canyon, including rock art sites from the Fremont Culture and Ute occupations of the area. Colorado State Highway 139 also passes through the canyon as part of the Dinosaur Diamond Scenic Byway.	MV-21b					✓	✓	✓					
Yampa River State Park	MV-21a	✓	✓		✓								
Utah													
Residences													
Argyle Canyon residences.[1] Numerous residences, including summer cabins, are located at the top of the canyon with a few scattered residences located near the mouth of the canyon.	MV-21b									✓	✓	✓	✓
Clear Creek.[1] A group of residences are located at the terminus of Utah State Route 96, set in the steep terrain of the Wasatch Plateau.	MV-21b							✓				✓	
Fairview.[1] Located on the west edge of the Wasatch Plateau, the town of Fairview would view the Project crossing steep forested landscapes in proximity to the Energy Loop Scenic Byway.	MV-21b							✓				✓	
Fruitland.[1] Scattered residences are located along U.S. Highway 40 and throughout the agriculturally dominated landscape.	MV-21b								✓				
Helper	MV-21b											✓	
Huntington	MV-21b												✓
Mount Pleasant	MV-21b					✓	✓						✓
Thompson Springs	MV-21b					✓	✓	✓					
Uinta Basin residences.[1] Numerous groups of residences are located throughout the Uinta Basin from Fruitland at the west side of the basin, to Vernal at the eastern edge. Many of these residences are located adjacent to alternative routes for the Project.	MV-21b								✓	✓			
Dispersed residences.[1] Refer to Wyoming description	MV-21b					✓	✓	✓	✓	✓	✓	✓	✓

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Travel Routes													
Dinosaur Diamond Scenic Byway	MV-21b					✓	✓	✓	✓	✓	✓	✓	✓
Energy Loop Scenic Byway.[1] This scenic byway comprises Utah State Route 31, 96, and 264, and provides access to numerous campgrounds, picnic areas, trails, and blue ribbon fishing opportunities in the Manti-La Sal National Forest. Mining and power generation contribute to the character of this scenic byway and could be affected by the Project.	MV-21b					✓	✓	✓		✓	✓	✓	✓
Indian Canyon Scenic Byway	MV-21b									✓	✓	✓	
Nine Mile Canyon Scenic Backway	MV-21b										✓	✓	✓
Reservation Ridge Scenic Backway	MV-21b									✓	✓		
Skyline Drive Scenic Backway	MV-21b					✓	✓	✓				✓	✓
Wedge Overlook/Buckhorn Draw Scenic Backway	MV-21b					✓	✓						
White River/Strawberry Road Scenic Backway	MV-21b								✓				
Interstate 70 (I-70).[1] I-70 connects Denver, Colorado to central Utah, in addition to providing access to Green River, Utah; Moab, Utah; and Grand Junction, Colorado. The Project would parallel I-70 for approximately 60 miles from the Colorado/Utah border to the east side of Green River.	MV-22b					✓	✓	✓					
U.S. Highway 6.[1] This highway connects the Wasatch Front to southeastern Utah, specifically from Spanish Fork to I-70 west of Green River, Utah. An alternative route parallels the highway for approximately 35 miles from an area south of Wellington, Utah to I-70.	MV-21b					✓	✓	✓	✓	✓	✓	✓	✓
Dinosaur National Monument Destination Route	MV-21b	✓	✓	✓	✓								
Floy Canyon WSA Destination Route	MV-21b					✓	✓	✓					
Horseshoe Canyon Destination Route	MV-21b					✓	✓	✓					
Mexican Mountain WSA Destination Route	MV-21b					✓	✓	✓					
San Rafael Swell Destination Route	MV-21b					✓	✓	✓					
Sand Wash/Nine Mile Area of Critical Environmental Concern (ACEC) Destination Route (Sand Wash Road)	MV-21b										✓	✓	✓
Sego Canyon Destination Route	MV-21b					✓	✓	✓					

TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Recreation Areas													
Old Spanish National Historic Trail.[1] The Old Spanish National Historic Trail was primarily used by explorers and traders between Mexico (present-day New Mexico) and California prior to the war with Mexico and acquisition of the Southwest (1829 to 1848). In the study area, the trail stretches from the Colorado/Utah border along I-70 through the San Rafael Swell.	MV-21b					✓	✓	✓					
Arapeen Trail System	MV-21b					✓	✓						✓
Aspen Grove Campground	MV-21b								✓				
Avintaquin Campground	MV-21b									✓	✓		
Camp Timberlane	MV-21b									✓	✓		
Carbon County Multi-Use Trail "Western Loop"	MV-22b											✓	
Great Western Trail	MV-21b								✓				
Green River.[1] The Green River flows from the Wind River Mountains in Wyoming to its confluence with the Colorado River in Canyonlands National Park. The Project would need to cross the Green River to reach central Utah. This crossing would either occur near Horseshoe Bend, through Fourmile Bottom, or adjacent to Crystal Geyser.	MV-21b					✓	✓	✓	✓	✓	✓	✓	✓
Indian Creek Campground	MV-21b					✓	✓						✓
Potters Pond	MV-21b					✓	✓						✓
San Rafael Swell recreation.[1] A variety of recreation opportunities occur throughout the San Rafael Swell. In the northern portion of San Rafael Swell, in proximity to Cedar Mountain, recreation includes hiking, camping, canyoneering, viewing rock art, and dispersed recreation in multiple WSAs.	MV-21b MV-22b					✓	✓	✓					
Strawberry Reservoir recreation.[1] Boating and fishing are the primary recreation activities on Strawberry Reservoir, but opportunities exist for hiking and camping in adjacent lands managed by the Uinta-Wasatch-Cache National Forest.	MV-21b MV-22b								✓				
Strawberry River	MV-21b								✓				

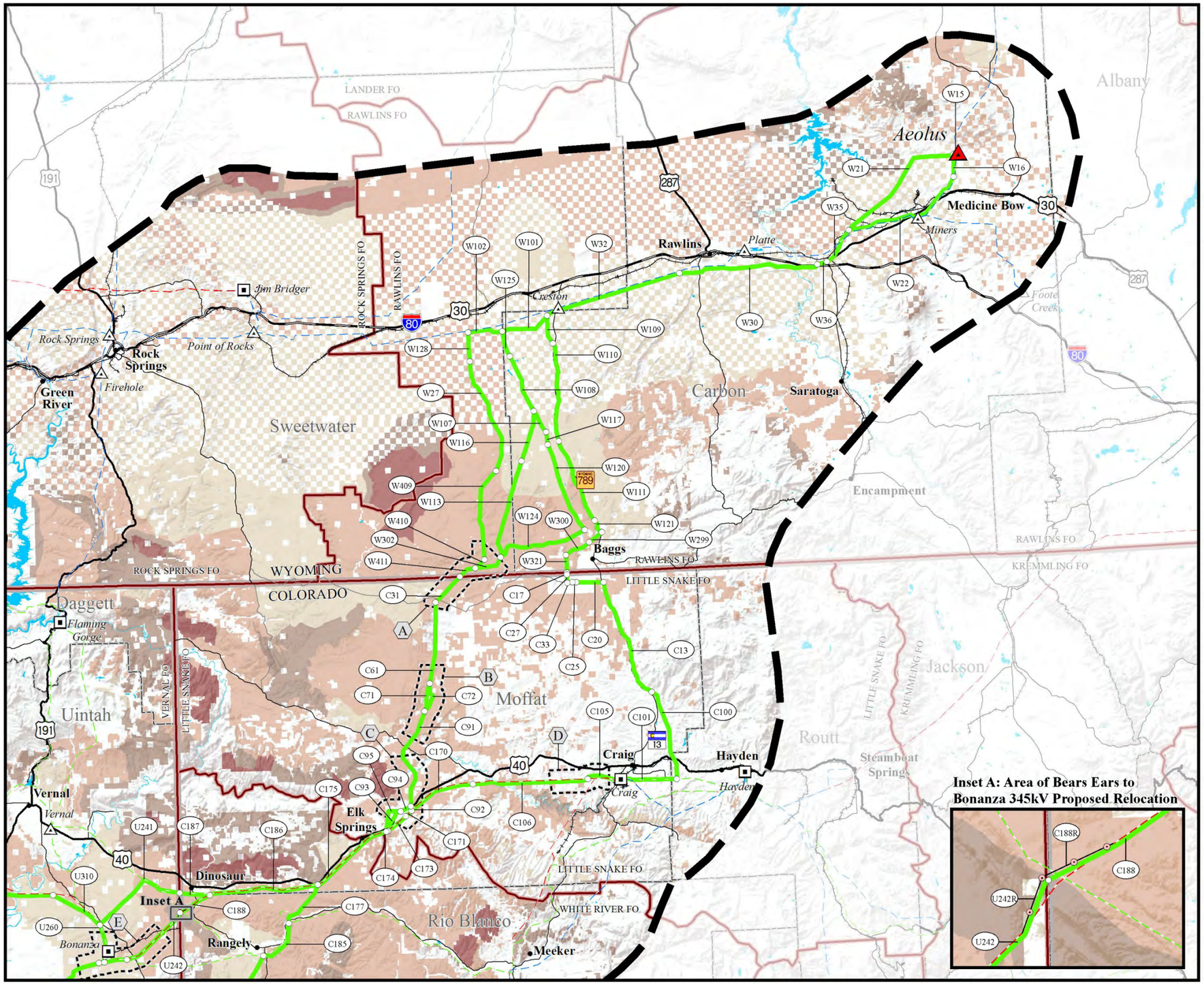
TABLE 3-243
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Wasatch Plateau recreation.[1] A variety of recreation opportunities occur in the Manti-La Sal National Forest on the Wasatch Plateau, including scenic driving, hiking, camping, fishing, and all-terrain vehicle riding.	MV-21b MV-22b					✓	✓	✓				✓	✓
White River.[1] The White River flows from its headwaters in the Flat Tops Wilderness Area in Colorado to its confluence with the Green River in Ouray, Utah. Project alternative routes potentially cross the river in two areas: (1) east of Rangely, Colorado and (2) adjacent to the Enron Recreation Site in the BLM Vernal Field Office.	MV-21b										✓	✓	✓
Dispersed recreation.[1] Refer to Wyoming description.	Not applicable					✓	✓	✓	✓	✓	✓	✓	✓
Special Designations													
Lower Green River Suitable Wild and Scenic River.[1] This segment of the Green River, from an area south of the community of Ouray to the Carbon county line, was given a tentative classification of scenic in the BLM Vernal Field Office RMP and is proposed for inclusion in the National Wild and Scenic River system.	MV-21b										✓	✓	✓
Lower Green River Corridor ACEC.[1] The Lower Green River Corridor ACEC covers 8,470 acres straddling the Green River north of Desolation Canyon. This area was designated for protection of riparian habitat and scenery.	MV-21b										✓	✓	✓
Nine Mile Canyon ACEC.[1] This ACEC encompasses more than 44,000 acres and was designated to protect cultural resources, high quality scenery, and special status species.	MV-21b										✓	✓	✓
San Rafael Canyon ACEC	MV-21b					✓	✓						

NOTE: [1]Issue identified during scoping

TABLE 3-244
BUREAU OF LAND MANAGEMENT FIELD OFFICE AND
U.S. FOREST SERVICE NATIONAL FORESTS CROSSED BY ALTERNATIVE ROUTE

Issue	Map Panel	Alternative Route											
		WYCO-B	WYCO-C	WYCO-D	WYCO-F	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-B	COUT-C	COUT-H	COUT-I
Bureau of Land Management													
Wyoming													
Rawlins Field Office	MV-24a	✓	✓	✓	✓								
Colorado													
Grand Junction Field Office	MV-24b					✓	✓	✓					
Little Snake Field Office	MV-24a	✓	✓	✓	✓								
White River Field Office	MV-24a, b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Utah													
Fillmore Field Office	MV-24b					✓	✓	✓	✓	✓	✓	✓	✓
Moab Field Office	MV-24b					✓	✓	✓					
Price Field Office	MV-24b					✓	✓	✓		✓	✓	✓	✓
Richfield Field Office	MV-24b					✓	✓	✓	✓	✓	✓	✓	✓
Salt Lake Field Office	MV-24b									✓	✓		
Vernal Field Office	MV-24b								✓	✓	✓	✓	✓
U.S. Forest Service													
Ashley National Forest	MV-24b									✓	✓		
Manti-La Sal National Forest	MV-24b					✓	✓	✓	✓	✓	✓	✓	✓
Uinta-Wasatch-Cache National Forest	MV-24b								✓	✓	✓		



Map 3-8a

BLM Visual Resource Management Classes Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Visual Resource Management Classes[1]

- Class I
- Class II
- Class III
- Class IV

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Visual Resource Management Classes, BLM 1987, 1990, 2008, 2011, 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
[1]BLM Visual Resource Management Classes shown only within the Project area boundary.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- FO is Field Office (BLM)
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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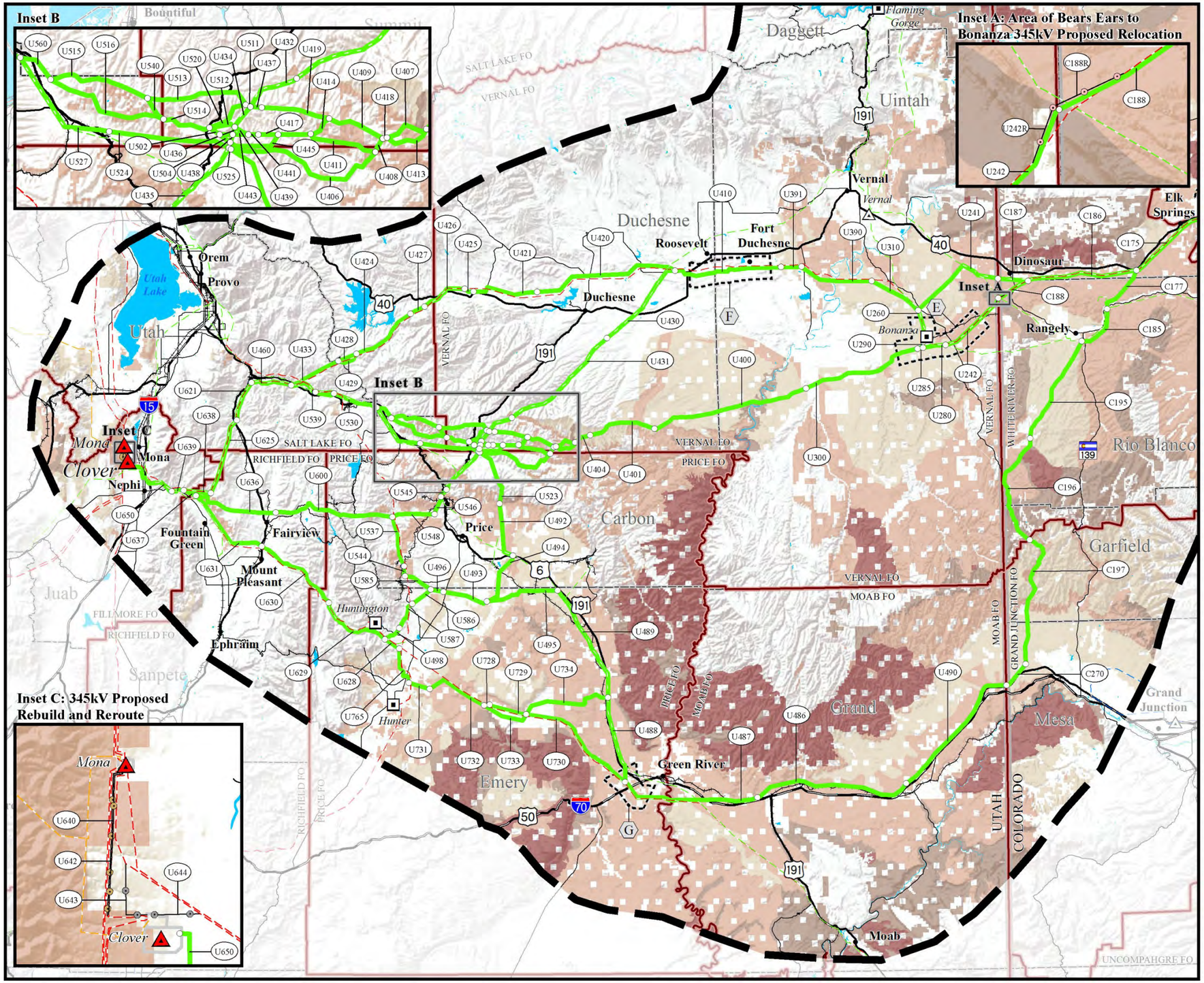

Map 3-8b

BLM Visual Resource Management Classes Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Visual Resource Management Classes[1]

- Class I
- Class II
- Class III
- Class IV

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Visual Resource Management Classes, BLM 1987, 1990, 2008, 2011, 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
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State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Map 3-9a

U.S. Forest Service Visual Quality Objectives Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Visual Quality Objectives (VQO)[1]

- Preservation
- Retention
- Partial Retention
- Modification

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- U.S. Forest Service Boundary

SOURCES:
VQO, USFS 2003, 2009, 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013
U.S. Forest Service Boundary, USFS 2006

NOTES:
[1]U.S. Forest Service Visual Quality Objectives shown only within the Project area boundary for National Forests potentially crossed by the Project.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Map 3-9b

U.S. Forest Service Visual Quality Objectives Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Visual Quality Objectives (VQO)[1]

- Preservation
- Retention
- Partial Retention
- Modification

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

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- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- U.S. Forest Service Boundary

SOURCES:
VQO, USFS 2003, 2009, 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013
U.S. Forest Service Boundary, USFS 2006

NOTES:
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FINAL EIS: September 2015

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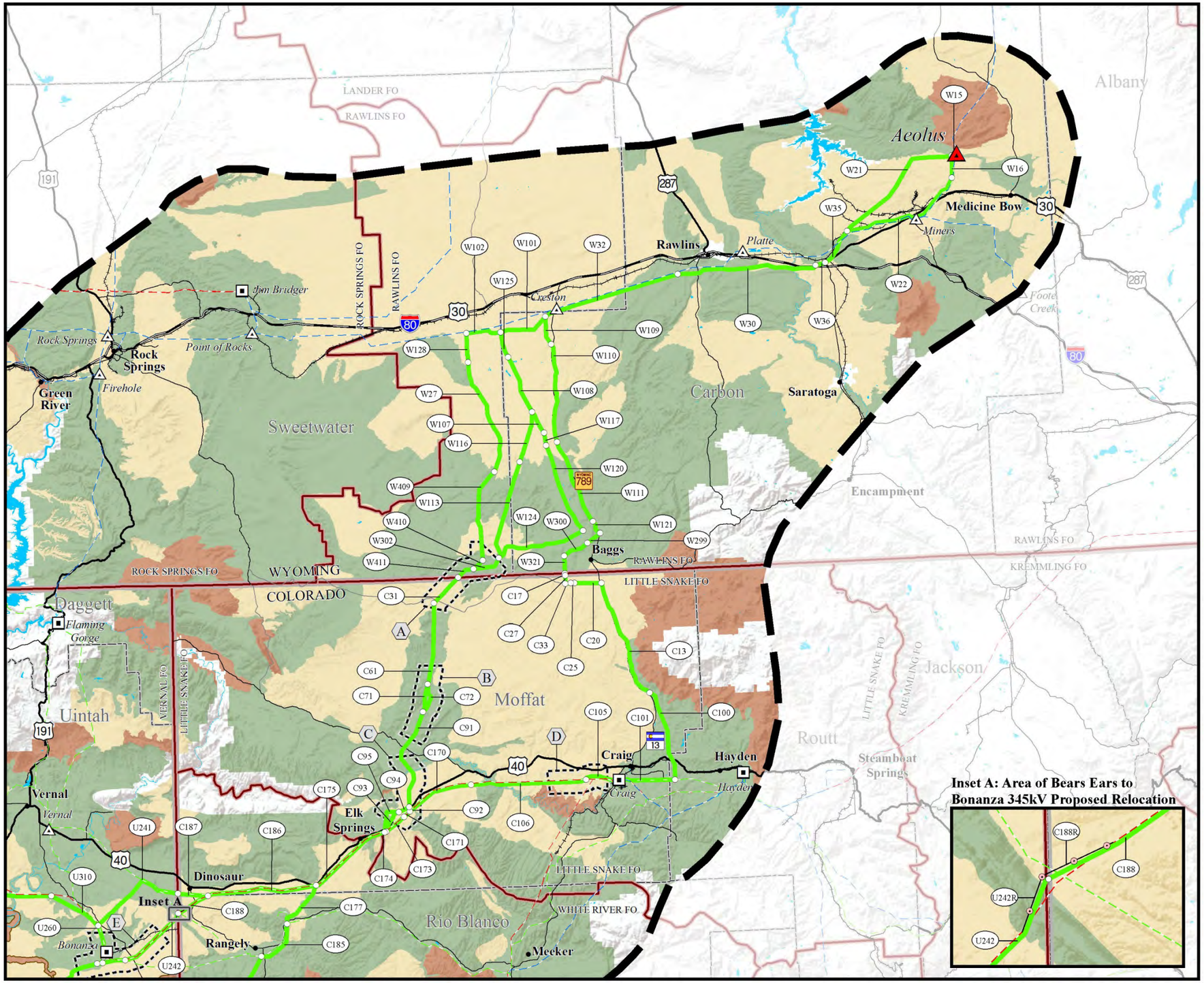

Map 3-10a

BLM Visual Resource Inventory Scenic Quality Rating Units Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

BLM Scenic Quality Rating Code[1]

- A[2]
- B
- C
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

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- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Scenic Quality Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
[1]BLM Scenic Quality Rating Units (SQRU) shown only within the Project area boundary.
[2]Class A SQRUs potentially crossed by the Project are labeled for reference.
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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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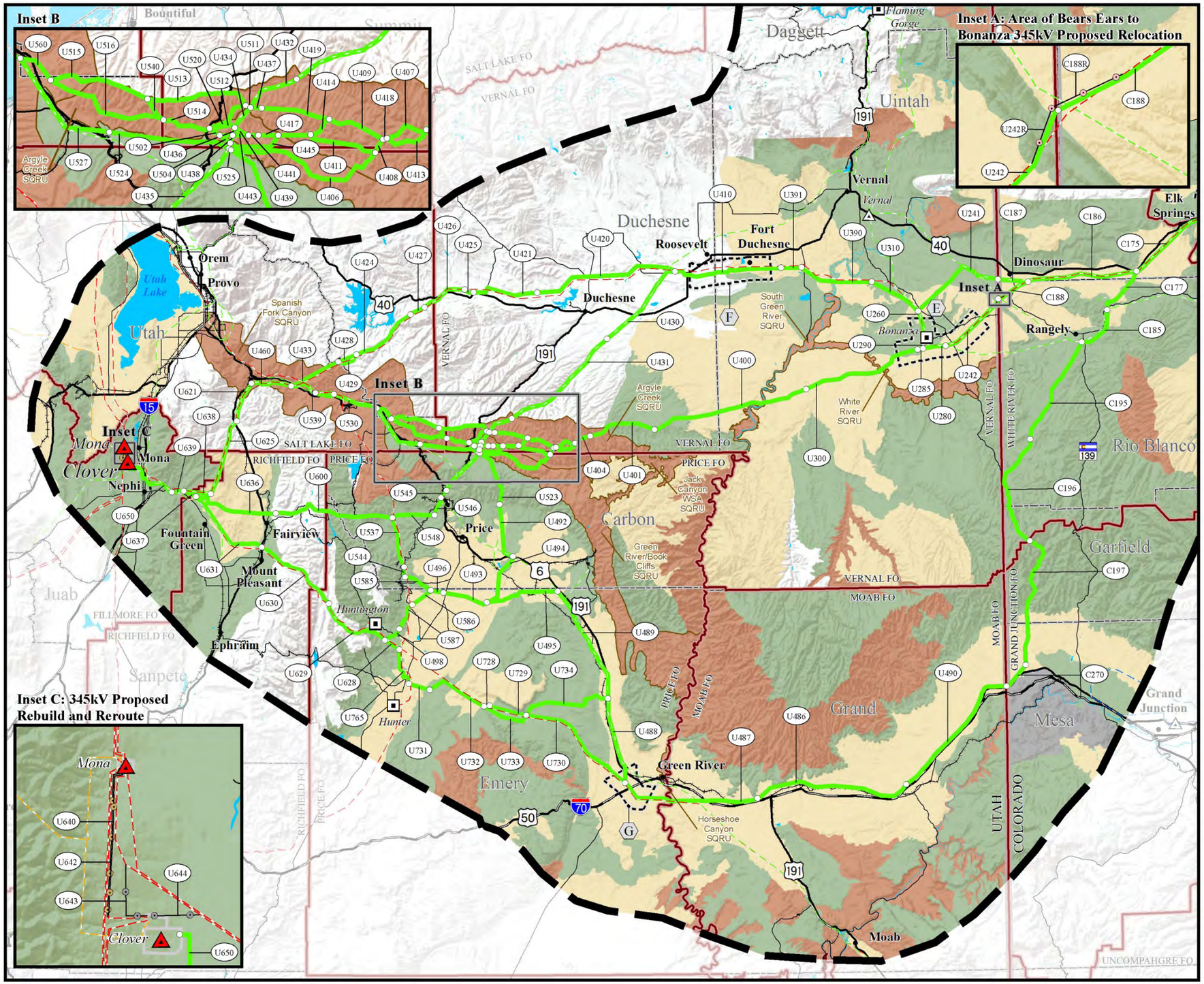

Map 3-10b

BLM Visual Resource Inventory Scenic Quality Rating Units Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

BLM Scenic Quality Rating Code[1]

- A[2]
- B
- C
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Scenic Quality Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
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State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

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[2]Class A SQRUs potentially crossed by the Project are labeled for reference.
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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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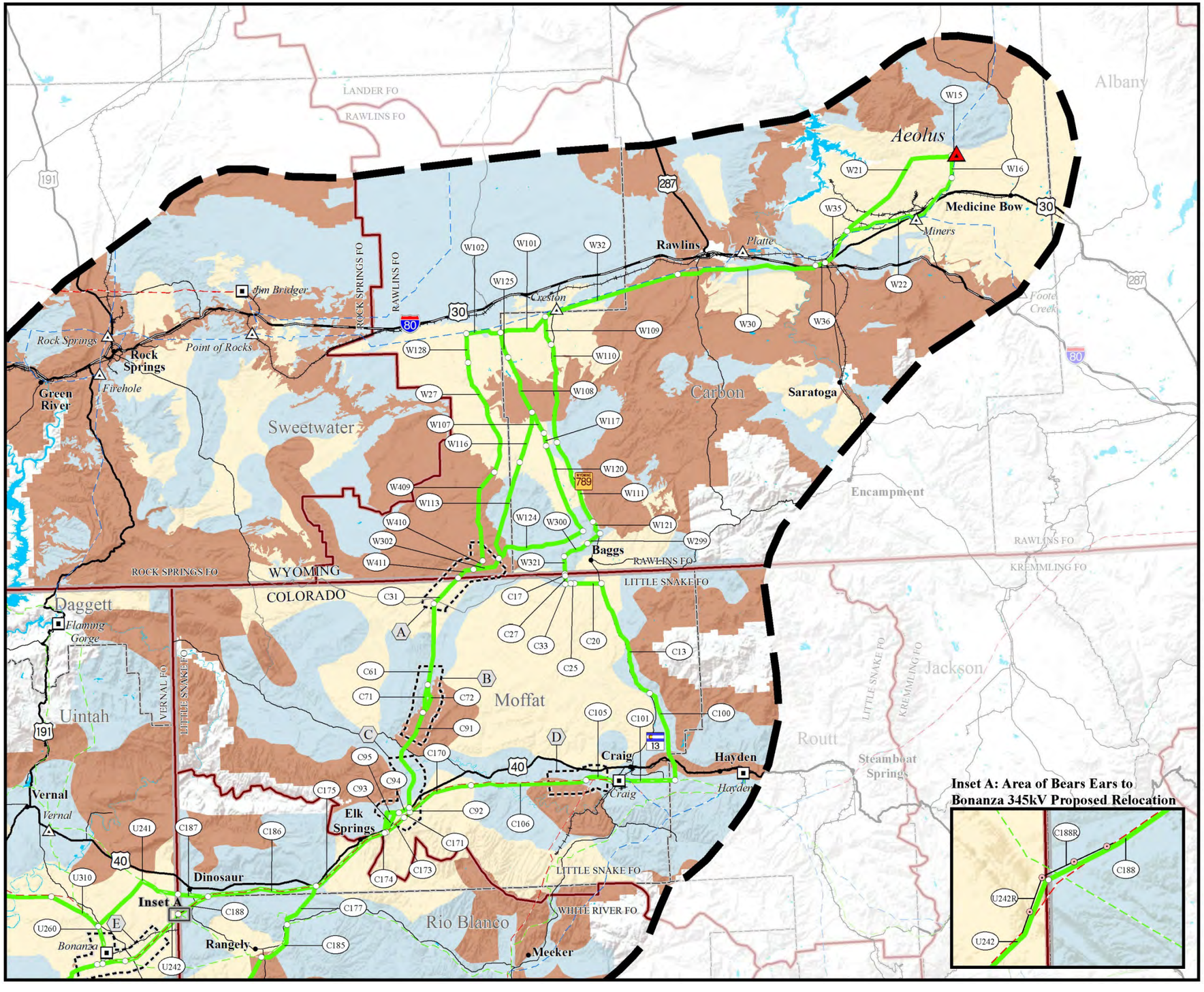

Map 3-11a

BLM Visual Resource Inventory Sensitivity Level Rating Units Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

BLM Sensitivity Level Rating Units[1]

- High
- Moderate
- Low
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

Inset A: Area of Bears Ears to Bonanza 345kV Proposed Relocation

SOURCES:
BLM Sensitivity Level Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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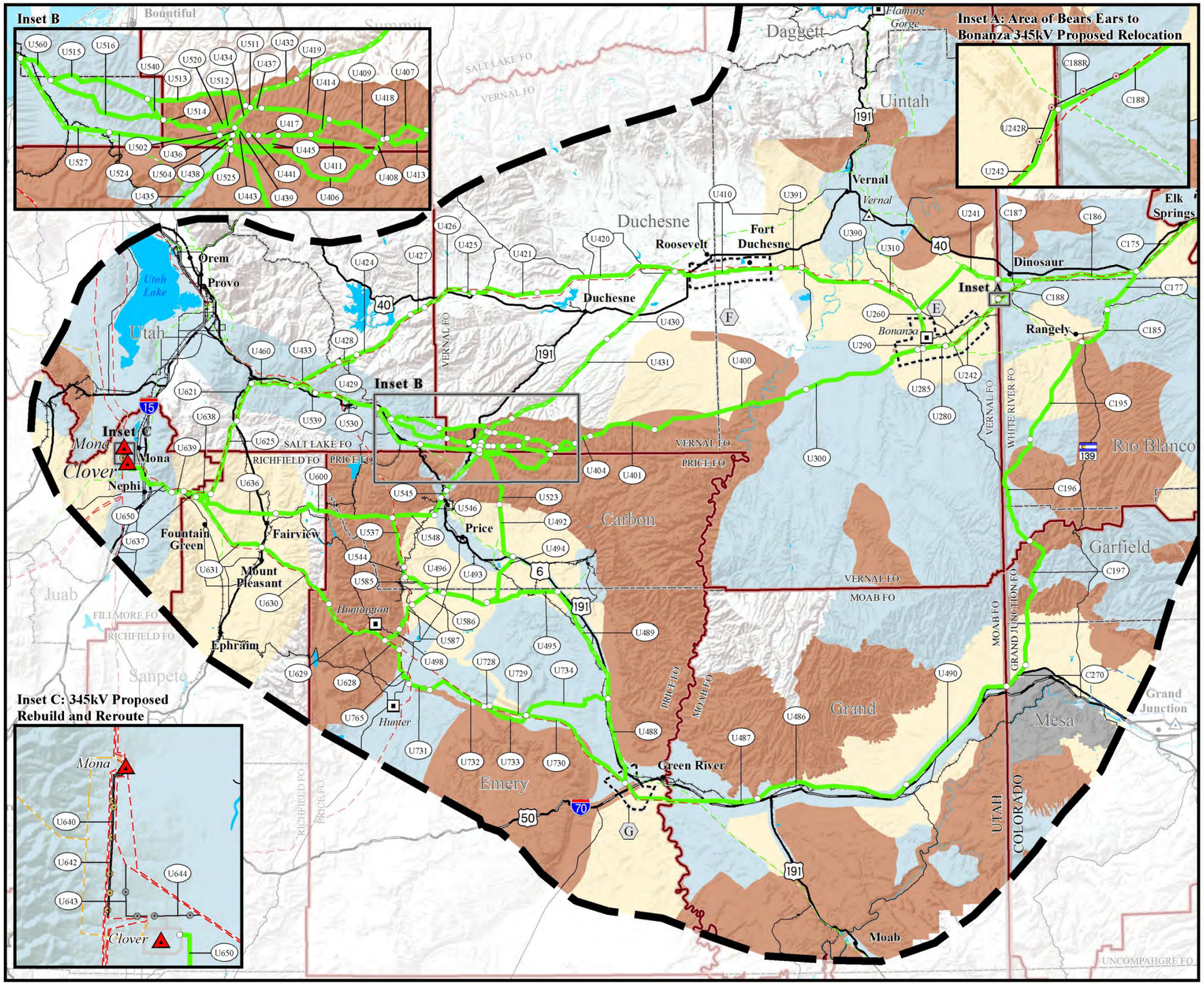

Map 3-11b

BLM Visual Resource Inventory Sensitivity Level Rating Units Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

BLM Sensitivity Level Rating Units[1]

- High
- Moderate
- Low
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Sensitivity Level Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
[1]BLM Sensitivity Level Rating Units shown only within the Project area boundary.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- FO is Field Office (BLM)
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Miles

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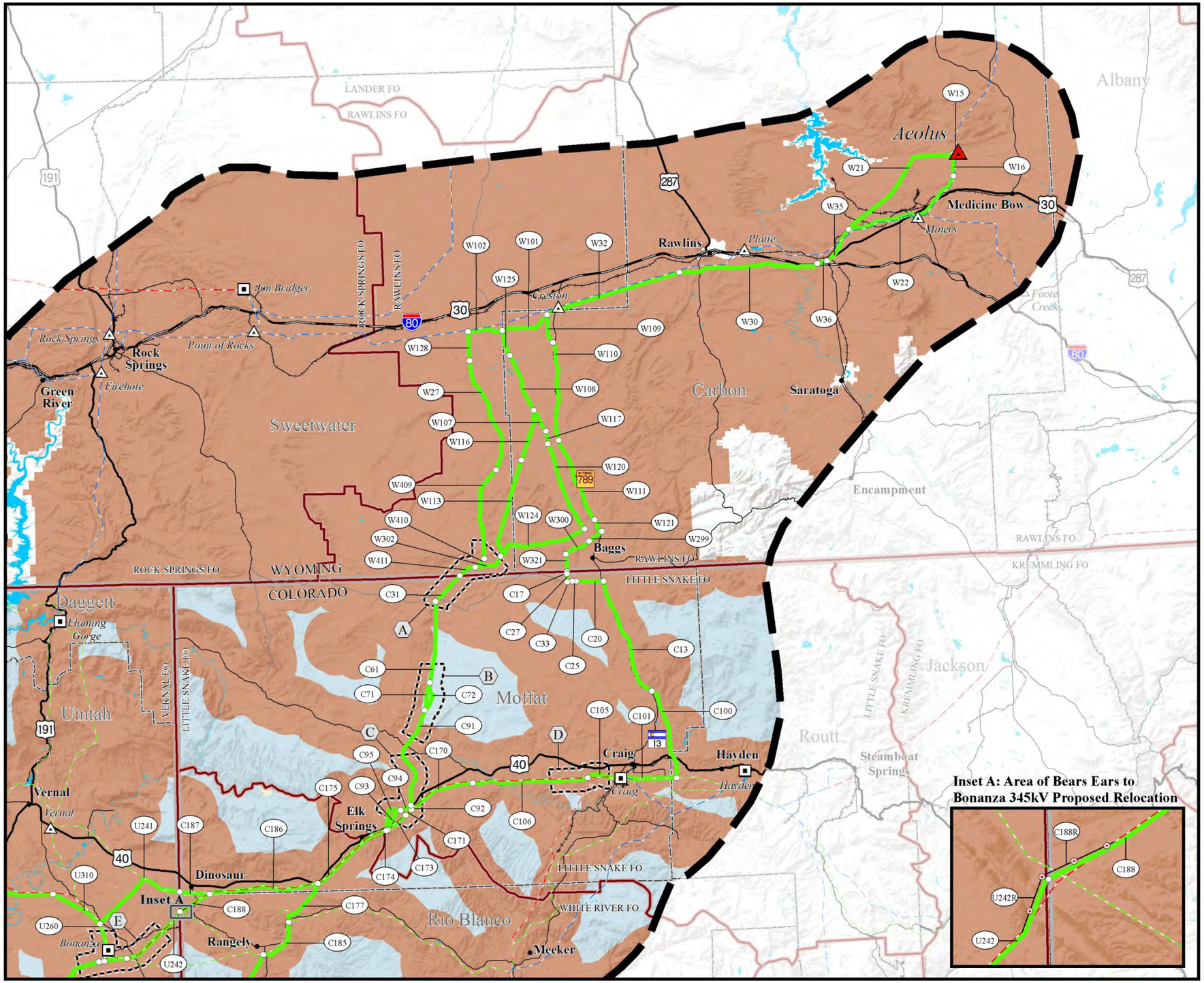

Map 3-12a

BLM Visual Resource Inventory Distance Zones Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Distance Zone[1]

- Foreground/Middleground
- Background
- Seldom Seen
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

Inset A: Area of Bears Ears to Bonanza 345kV Proposed Relocation

SOURCES:
Distance Zones, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Miles

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Map 3-12b

BLM Visual Resource Inventory Distance Zones Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Distance Zone[1]

- Foreground/Middleground
- Background
- Seldom Seen
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
Distance Zones, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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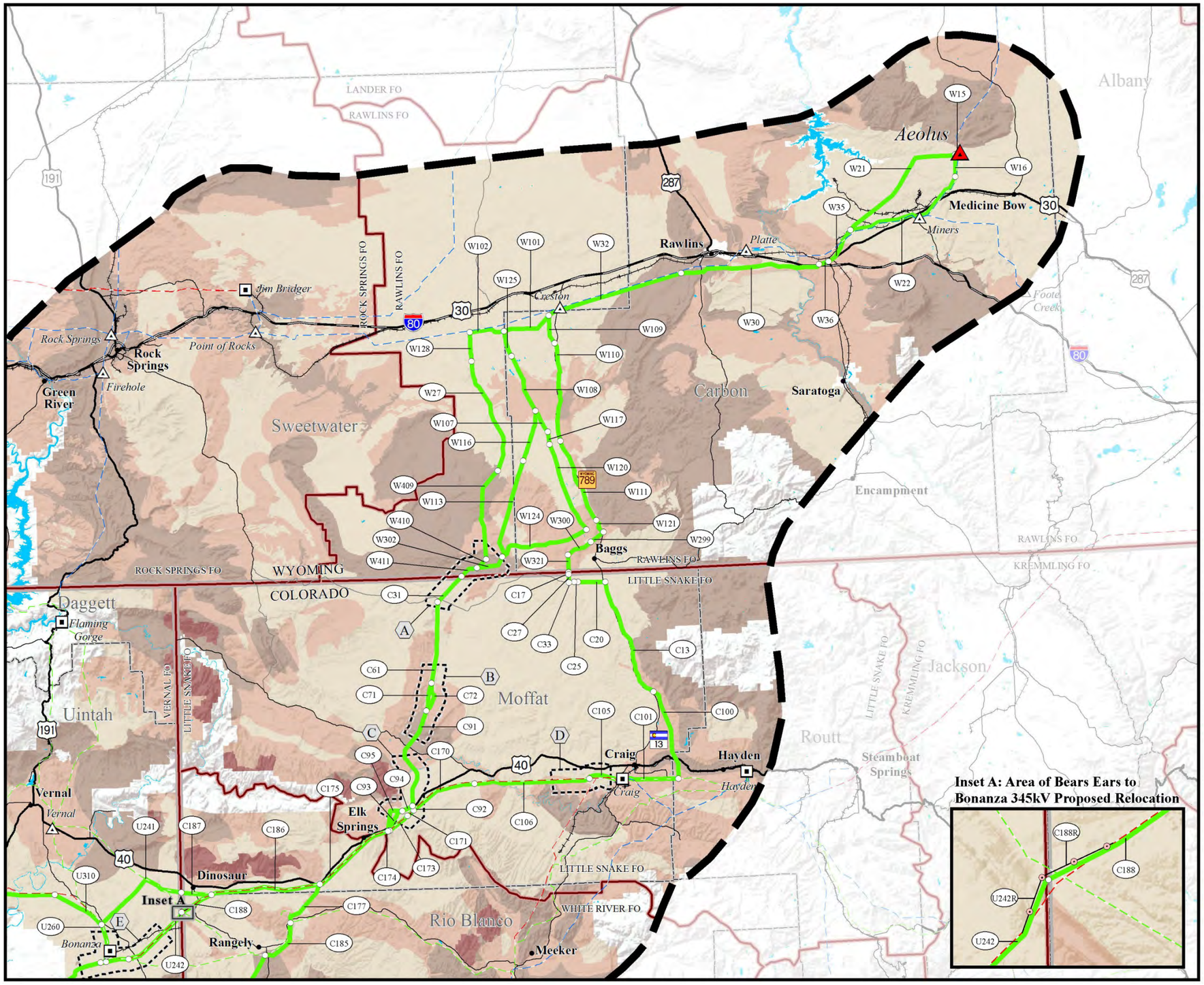

Map 3-13a

BLM Visual Resource Inventory Inventory Classes Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

BLM Visual Resource Inventory Classes[1]

- Class I
- Class II
- Class III
- Class IV
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Visual Resource Inventory Classes, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
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State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

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Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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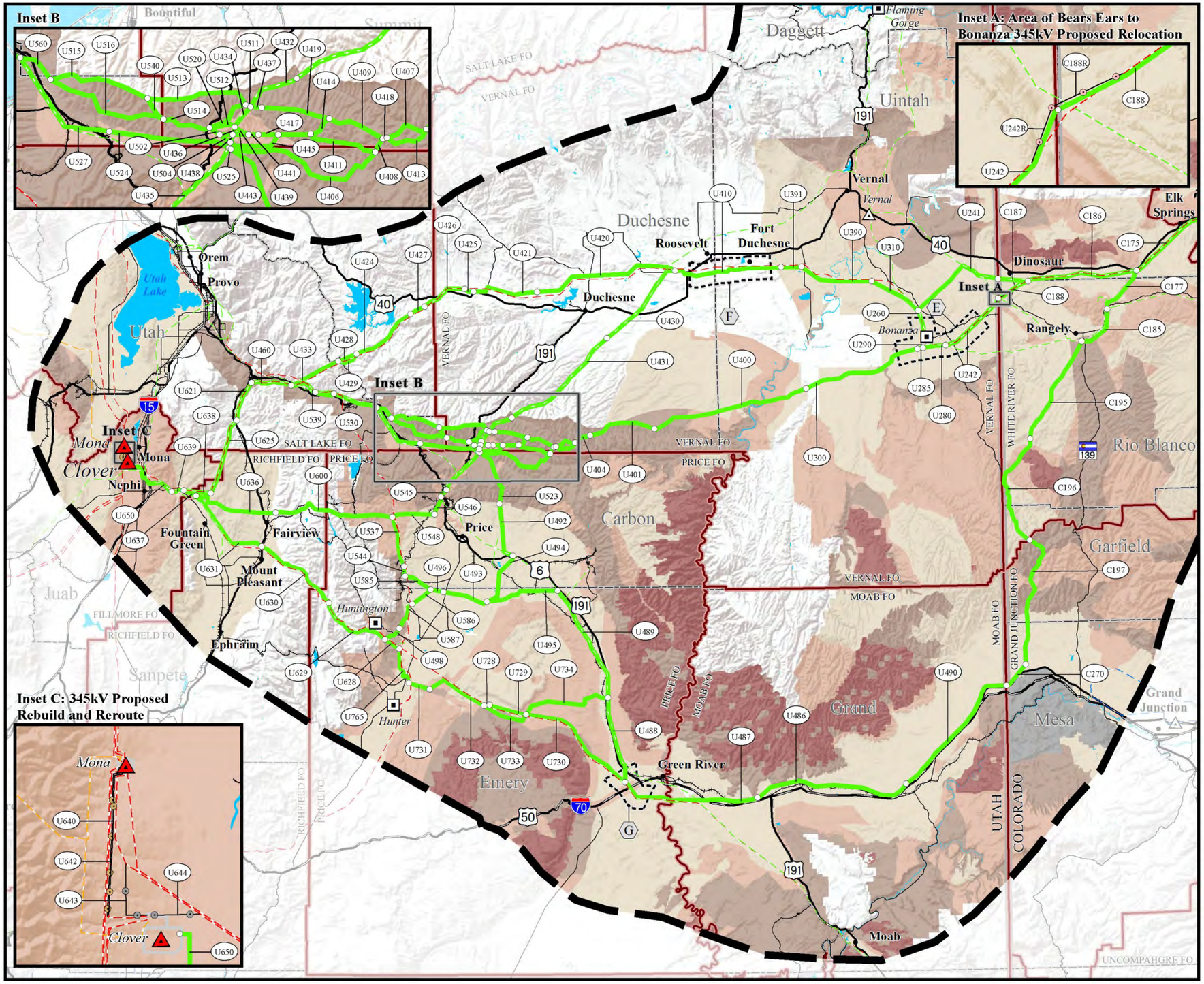

Map 3-13b

BLM Visual Resource Inventory Inventory Classes Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

BLM Visual Resource Inventory Classes[1]

- Class I
- Class II
- Class III
- Class IV
- N/A

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Number
- Link Node
- Series Compensation Station Siting Area
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset C)
- 345kV Proposed Reroute (Segment 4c - Inset C)

General Reference

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- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- BLM Field Office Boundary

SOURCES:
BLM Visual Resource Inventory Classes, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
[1]BLM Visual Resource Inventory Classes shown only within the Project area boundary.
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- FO is Field Office (BLM)
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Miles

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TABLE 3-245
ALTERNATIVE ROUTE COMPARISON FOR PROJECT-LEVEL VISUAL RESOURCE INVENTORY FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Scenery (miles crossed)				High Concern Viewers (miles crossed)					Moderate Concern Viewers (miles crossed)					Management Classifications (miles crossed)					
																Bureau of Land Management Visual Resource Management Classes[1]			U.S. Forest Service Visual Quality Objectives[2]		
		A	B	C	Developed	0 to 0. 5 mile	0.5 to 1.0 mile	1 to 2 miles	2 to 3 miles	More than 3 miles	0 to 0. 5 mile	0.5 to 1.0 mile	1 to 2 miles	2 to 3 miles	More than 3 miles	Class II	Class III	Class IV	Retention	Partial Retention	Modification
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	0.0	68.0	138.3	0.0	14.5	16.2	51.2	60.2	64.2	49.2	46.7	36.9	18.1	55.4	0.0	69.8	58.2	0.0	0.0	0.0
Wyoming	*141.0*	*0.0*	*38.6*	*102.4*	*0.0*	*10.3*	*9.8*	*31.1*	*42.8*	*47.0*	*25.9*	*21.2*	*22.7*	*15.8*	*55.4*	*0.0*	*22.6*	*58.2*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*29.4*	*35.9*	*0.0*	*4.2*	*6.4*	*20.1*	*17.4*	*17.2*	*23.3*	*25.5*	*14.2*	*2.3*	*0.0*	*0.0*	*47.2*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-C	210.0	0.0	62.2	147.6	0.2	14.6	14.9	44.8	52.4	83.3	46.2	41.0	39.6	17.2	66.0	0.0	86.3	40.5	0.0	0.0	0.0
Wyoming	*144.7*	*0.0*	*32.8*	*111.7*	*0.2*	*10.4*	*8.5*	*24.7*	*35.0*	*66.1*	*22.9*	*15.5*	*25.4*	*14.9*	*66.0*	*0.0*	*39.1*	*40.5*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*29.4*	*35.9*	*0.0*	*4.2*	*6.4*	*20.1*	*17.4*	*17.2*	*23.3*	*25.5*	*14.2*	*2.3*	*0.0*	*0.0*	*47.2*	*0.0*	*0.0*	*0.0*	*0.0*
WYCO-D	249.4	0.0	87.2	161.6	0.6	80.9	36.4	56.0	43.7	32.4	87.9	44.9	57.9	31.3	27.4	0.0	50.5	55.0	0.0	0.0	0.0
Wyoming	*134.9*	*0.0*	*33.3*	*101.6*	*0.0*	*46.1*	*9.5*	*27.9*	*28.2*	*23.2*	*29.8*	*20.0*	*33.6*	*24.1*	*27.4*	*0.0*	*13.0*	*54.7*	*0.0*	*0.0*	*0.0*
Colorado	*114.5*	*0.0*	*53.9*	*60.0*	*0.6*	*34.8*	*26.9*	*28.1*	*15.5*	*9.2*	*58.1*	*24.9*	*24.3*	*7.2*	*0.0*	*0.0*	*37.5*	*0.3*	*0.0*	*0.0*	*0.0*
WYCO-F	218.8	0.0	62.5	156.3	0.0	16.8	18.7	59.9	59.1	64.3	55.0	47.8	40.0	20.1	55.9	0.0	81.8	58.9	0.0	0.0	0.0
Wyoming	*153.5*	*0.0*	*33.1*	*120.4*	*0.0*	*12.6*	*12.3*	*39.8*	*41.7*	*47.1*	*31.7*	*22.3*	*25.8*	*17.8*	*55.9*	*0.0*	*34.6*	*58.9*	*0.0*	*0.0*	*0.0*
Colorado	*65.3*	*0.0*	*29.4*	*35.9*	*0.0*	*4.2*	*6.4*	*20.1*	*17.4*	*17.2*	*23.3*	*25.5*	*14.2*	*2.3*	*0.0*	*0.0*	*47.2*	*0.0*	*0.0*	*0.0*	*0.0*

NOTES:
[1]Bureau of Land Management Visual Resource management Class I is not crossed by any of the Project alternative routes.
[2]U.S. Forest Service Preservation, or Maximum Modification Visual Quality Objectives are not crossed by any of the Project alternative routes.

TABLE 3-246
ALTERNATIVE ROUTE COMPARISON FOR VISUAL RESOURCES RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Residual Impacts (miles)										Compliance/Consistency (miles)				
		Scenery				High Concern Viewers			Moderate Concern Viewers			Bureau of Land Management Visual Resource Management Classes		U.S. Forest Service Visual Quality Objectives		Not Applicable
		High	Moderate	Low	Not Identifiable	High	Moderate	Low	High	Moderate	Low	Compliant	Not Compliant	Consistent	Not Consistent	
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	0.0	65.1	141.2	0.0	15.1	34.4	156.8	1.2	45.7	159.4	126.7	1.3	0.0	0.0	78.3
Wyoming	*141.0*	*0.0*	*39.2*	*101.8*	*0.0*	*10.9*	*21.9*	*108.2*	*1.2*	*26.3*	*113.5*	*80.1*	*0.7*	*0.0*	*0.0*	*60.2*
Colorado	*65.3*	*0.0*	*25.9*	*39.4*	*0.0*	*4.2*	*12.5*	*48.6*	*0.0*	*19.4*	*45.9*	*46.6*	*0.6*	*0.0*	*0.0*	*18.1*
WYCO-C	210.0	0.0	58.9	150.9	0.2	15.0	29.5	165.5	1.2	42.7	166.1	125.0	1.8	0.0	0.0	83.2
Wyoming	*144.7*	*0.0*	*33.0*	*111.5*	*0.2*	*10.8*	*17.0*	*116.9*	*1.2*	*23.3*	*120.2*	*78.4*	*1.2*	*0.0*	*0.0*	*65.1*
Colorado	*65.3*	*0.0*	*25.9*	*39.4*	*0.0*	*4.2*	*12.5*	*48.6*	*0.0*	*19.4*	*45.9*	*46.6*	*0.6*	*0.0*	*0.0*	*18.1*
WYCO-D	249.4	0.9	52.6	195.3	0.6	65.7	61.9	121.8	0.3	67.9	181.2	97.2	8.2	0.0	0.0	144.0
Wyoming	*134.9*	*0.0*	*23.6*	*111.3*	*0.0*	*45.1*	*29.2*	*60.6*	*0.0*	*28.7*	*106.2*	*67.6*	*0.0*	*0.0*	*0.0*	*67.3*
Colorado	*114.5*	*0.9*	*29.0*	*84.0*	*0.6*	*20.6*	*32.7*	*61.2*	*0.3*	*39.2*	*75.0*	*29.6*	*8.2*	*0.0*	*0.0*	*76.7*
WYCO-F	*218.8*	0.0	59.6	159.2	0.0	17.4	38.0	163.4	1.2	51.5	166.1	138.4	2.3	0.0	0.0	78.1
Wyoming	*153.5*	*0.0*	*33.7*	*119.8*	*0.0*	*13.2*	*25.5*	*114.8*	*1.2*	*32.1*	*120.2*	*91.8*	*1.7*	*0.0*	*0.0*	*60.0*
Colorado	*65.3*	*0.0*	*25.9*	*39.4*	*0.0*	*4.2*	*12.5*	*48.6*	*0.0*	*19.4*	*45.9*	*46.6*	*0.6*	*0.0*	*0.0*	*18.1*

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Scenery

Alternative WYCO-B in Wyoming crosses Class C scenery associated with the rolling steppe and plains landscapes typical of the Wyoming Basin physiographic province. Distinctive Class B landscapes also would be crossed, including hogback ridges and cuestas that define the edges of the adjacent, open plains landscapes. A key feature of many of the landscapes crossed by the Project is the rural landscape character resulting from the juxtaposition of irrigated agricultural lands, natural lands, and dispersed residential areas. The character of landscapes (mostly Class C) crossed by Links W32, W101, W125, W108, W117, and W113 have been modified by the introduction of oil and gas development characterized by low cylindrical forms and interspersed with perpetual moving features (i.e., pump jacks). Alternative WYCO-B crosses 38.6 miles of Class B scenery and 102.4 miles of Class C scenery.

Viewing Locations

Residences

The city of Rawlins is located approximately 3 miles north of Link W30 and contains a large concentration of high concern residential viewing locations. Dispersed rural residences are generally located in four areas along Alternative WYCO-B in Wyoming: (1) north of Hanna, (2) Walcott Junction, (3) North Platte River south of Fort Steele, and (4) south of Rawlins.

Travel Routes

I-80, associated with moderate concern viewers, would be paralleled by the Project on Link W30 (approximately 0.25 mile away) for 3.0 miles east of Fort Steele. Hanna Draw Road, associated with moderate concern viewers, would be crossed by Link W21 (6 miles north of Hanna). This road provides access to the southeastern portions of Seminoe Reservoir and the North Platte River below Kortes Dam, north of Rawlins.

Recreation Areas

The Continental Divide NST as well as the associated SRMA, both associated with high concern viewers, would be crossed by Link W30, 4 miles southwest of Rawlins. Alternative WYCO-B in Wyoming crosses three historic trails designated by the BLM Rawlins Field Office: (1) Cherokee Historic Trail, (2) Overland Historic Trail, and (3) Rawlins to Baggs Road. The Cherokee Historic Trail would be crossed by Link W302 approximately 30 miles west of Baggs. The Overland Historic Trail would be crossed by the Project on Link W108, 15 miles south of Wamsutter. The Rawlins to Baggs Road, which parallels present-day Twenty Mile Road, would be crossed by Link W30, 3 miles southwest of Rawlins. The North Platte River and the associated SRMA, both associated with high concern viewers, would be crossed by Link W30 approximately 0.75 mile south of I-80. Rim Lake Recreation Site, a recreation area associated with high concern viewers, is located 2.5 miles south of Link W30 adjacent to Wyoming Highway 71.

Dispersed recreation opportunities are located across public lands, including both BLM- and state-administered lands. Recreation in these areas includes big game hunting, camping, fishing, geocaching, hiking, and many other informal activities.

Special Designations

Fort Fred Steele Historic Site, associated with high concern viewers, is located 2.5 miles north of Link W30 along the North Platte River. The Red Rim-Daley WHMA would be crossed by Link W32 for approximately 4 miles west of Rawlins.

KOPs specific to Alternative WYCO-B in Wyoming include:

- #220: North Platte River SRMA [simulation]
- #222: Hanna Draw Road
- #226: I-80 (east of Sinclair)
- #227: Wyoming Highway 71
- #228: Outlaw Trail Loop Scenic Drive (Wyoming Highway 789 south of I-80)
- #229: Wamsutter residential
- #281: Rawlins to Baggs Historic Trail (Twenty Mile Road)
- #295: Fort Fred Steele Historic Site

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative WYCO-B in Wyoming crosses 80.8 miles of BLM-administered land with 22.6 miles in VRM Class III and 58.2 miles in VRM Class IV in the BLM Rawlins Field Office. The VRM Class III lands associated with this alternative route include lands adjacent to U.S. Highway 30 and Flat Top Mountain.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-B in Wyoming crosses 50.8 miles of Class B and 90.2 miles of Class C landscapes in the BLM Rawlins Field Office. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Freezeout Mountains

Class B SQRUs
- Adobe Town
- Atlantic Rim[1]
- Bolton Ranch[1]
- Cottonwood Draw
- Flat Tops[1]
- Medicine Bow River[1]
- Parallel Ridges[1]
- Platte North[1]
- Powder Rim[1]
- Rawlins Uplift
- Red Rim[1]
- Rendle Hill
- Robbers Gulch[1]

Class C SQRUs
- Cedar Breaks[1]
- Continental Divide
- Creston[1]
- Dana Meadows[1]
- Hanna Uplift[1]
- Little Medicine Bow River[1]
- Muddy Creek
- Overland Trail[1]
- Sage Creek
- Sage Flats[1]
- Sand Creek[1]
- Separation Flats[1]
- Shamrock Hills
- Spade Flats
- Walcott[1]
- West Separation Flats[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative WYCO-B in Wyoming crosses 46.9 miles of high sensitivity, 28.3 miles of moderate sensitivity, and 65.9 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Atlantic Rim
- Continental Divide NST
- Greater Adobe Town Area
- Lake Creek Flats
- North Platte River (Middle Reach)
- Overland Trail
- Powder Rim
- Red Rim

Moderate SLRUs
- Flat Tops
- Fort Steele Breaks
- Great Basin Divide
- I-80 Corridor
- Poison Buttes

Low SLRUs
- Barrel Springs
- Bolton Ranch
- Dana Meadows
- Hanna Basin
- Horse Butte
- Medicine Bow

Distance Zones

Alternative WYCO-B in Wyoming crosses 141.0 miles in the foreground-middleground distance zone and 0.3 mile in the background distance zone.

Visual Resource Inventory Classes

Alternative WYCO-B in Wyoming crosses 27.4 miles of VRI Class II, 35.3 miles of VRI Class III, and 78.2 miles of VRI Class IV in the BLM Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, and Powder Rim.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-B in Wyoming would result in modifications to all landscapes crossed based on the introduction of transmission line structures (including tower pads), construction and maintenance of access roads, and right-of-way vegetation clearing. These modifications would contrast with existing landscape characteristics common to the region. Particularly in areas that exhibit a rural character, the Project would introduce formal hard edge geometry into a rolling landscape. In this regard, moderate to low impacts are anticipated. Generally, moderate impacts would occur in the more distinctive, but limited, Class B landscapes where access and tower pads would be constructed in steep terrain, requiring additional earthwork that would produce stronger visual contrast. Additionally, because the Project would be constructed on ridgelines and cuestas, contrast would increase based on strong geometric vertical lines as compared to the rolling, sinuous lines associated with the topography.

Viewing Locations

Residences

Low impacts are anticipated on views from residences in the City of Rawlins, located approximately 2.5 miles north of the proposed Project because views of the Project would be mostly screened by topography. Views from dispersed residences located south of Rawlins, along Wyoming Highway 71, would have a moderate level of impact where the Project traverses a rolling steppe landscape. These residences are located approximately 0.5 to 1.0 mile away from the Project and would be located between an existing transmission line and the Project.

Alternative WYCO-B in Wyoming would have a moderate level of visual impacts on views from dispersed residences north of the community of Hanna, as well as dispersed residences adjacent to Walcott Junction, since views of the Project would occur approximately 1 mile away. The Project would be viewed from these dispersed residences traversing rolling terrain predominately vegetated by sagebrush and grassland communities where the right-of-way and access roads would be subtle. Dispersed residences adjacent to Fort Steele along the North Platte River would have a moderate level of impact. The Project would be located between parallel ridges, where views would be screened (except for the area between I-80 and the North Platte River, where transmission towers may be skylined on a ridge). To diminish contrast produced by the construction of access roads on steep terrain, selective mitigation measures would be applied to reduce ground disturbance during the construction of these roads.

Travel Routes

Alternative WYCO-B in Wyoming would have moderate impacts on views from I-80, south of Fort Steele, in the same area as described above for dispersed residences where the Project crosses the ridge and transmission line structures may be skylined. Moderate impacts also would occur where the Project would parallel I-80 for approximately 3 miles, affording views of the Project along this high-speed travel route. For additional analysis, refer to the contrast rating worksheet for KOP #226 in Appendix N. High impacts are anticipated on views from Hanna Draw Road, north of the community of Hanna, where the Project crosses the road and then parallel the road within 0.5 mile for approximately 4 miles through steep terrain with intermittent topographic screening. Disturbance from the construction of access roads, as well as the presence of transmission structures, would modify in particular the form, line, and color of the existing landscape and would result in a strong contrast. To reduce the level of visible contrast, ground disturbance associated with the construction of access roads would be minimized and transmission line structures would be placed as far apart as practicable at the road crossing to reduce the number of structures in view. For additional analysis, refer to the contrast rating worksheet for KOP #222 in Appendix N.

Recreation Areas

Views from the North Platte River (and associated SRMA) would have a high level of impact where the river would be crossed by the Project. This level of impact would result from the Project traversing moderately steep slopes where access roads would be required and transmission line structures would be skylined. To reduce the level of contrast, selective mitigation measures to reduce impacts would be applied, including using roads not associated with recreation access in the SRMA to the extent practicable, minimizing ground disturbance from the construction of access roads and maximizing the distance between transmission structures at the river crossing, as well as selectively locating structures to reduce the visual dominance of the structures from recreationists along the river corridor. For additional analysis, refer to the contrast rating worksheet for KOP #220 and the associated visual simulation in Appendix N.

High impacts are anticipated on views from the Continental Divide NST (and associated SRMA) within 0.5 mile of where the Project crosses the trail in an area where the alignment is located in a partially enclosed landscape setting between two ridges. This level of impact is based on the Project traversing moderately steep sagebrush-dominated terrain with few existing cultural modifications, although there is an existing lower voltage transmission line approximately 1 mile away. Mitigation measures applied to reduce the contrast produced by the Project include using adjacent roads for access, minimizing the construction of access roads across the trail alignment, limiting ground disturbance from the construction of access roads, and placing towers as far apart as practicable, as well as selectively locating structures to utilize existing topographic screening opportunities at the trail crossing to reduce the dominance of

structures in the viewshed of the scenic trail. For the more detailed assessment of impacts on the Continental Divide NST, refer to Section 3.2.19.5.

High impacts would occur on views from the Rawlins to Baggs Road where the Project would traverse steep sagebrush-dominated slopes and then cross the historic trail approximately 0.5 mile south of an existing lower voltage transmission line. Selective mitigation measures to reduce contrast produced by the Project would include using existing roads for access to the extent practicable, limiting ground disturbance from the construction of access roads, and maximizing the span between transmission line structures at the trail crossing to reduce the visual dominance of the structures. For additional analysis, refer to the contrast rating worksheet for KOP #281 in Appendix N.

Views from the Overland Historic Trail also would have a high impact level within 0.5 mile of where the Project crosses the historic trail. The landscape setting for the trail in this area has been modified by oil and gas development, but the majority of these structures have been painted colors that seasonally blend with the landscape's existing character, reducing their perceived visual contrast and dominance. By maximizing the distance between transmission line structures where the Project crosses the trail, the number of structures located in proximity to the trail would be reduced; therefore, visual contrast resulting from the Project also would be reduced. Impacts on views from the Cherokee Historic Trail would range from a moderate level where the trail is paralleled by the Project at a distance of approximately 1.5 miles away to a high level where the trail is crossed. The historic trail would be crossed in steeply sloping terrain, requiring the construction of complex access roads to allow for construction and maintenance. Measures to reduce contrast in this area would include limiting ground disturbance from the construction of access roads and placing towers as far apart as practicable at the trail crossing to reduce the number of structures in view of the historic trail.

Low impacts are anticipated on views from the Rim Lake Recreation Site because views of the Project would be screened by Coal Mine Ridge to the north.

Since dispersed recreation occurs throughout public-administered lands, the level of impact is dependent on the distance the viewer would be from the Project as well as on the level of contrast produced by the Project components as compared to the existing condition. The highest level of impacts would occur where the dispersed recreationist is located within 0.5 mile of the Project in a landscape with few cultural modifications, and the lowest level of impacts would occur on views beyond the 6-mile-wide study corridor where the Project is colocated with existing transmission lines.

Special Designations

Low impacts would occur on views from the Fort Fred Steele Historic Site since views of the Project would be 2 miles away with both an existing lower voltage transmission line and interstate highway located closer to this historic site than the Project. For additional analysis, refer to the contrast rating worksheet for KOP #295 in Appendix N. Views from dispersed recreation in the Red Rim-Daley WHMA would have a moderate level of impact where the Project crosses the WHMA through rolling terrain approximately 0.5 mile from an existing lower voltage transmission line. Selective mitigation measures would be applied to reduce ground disturbance produced by the construction of access roads in rolling terrain; but since contrast introduced by the structures cannot be effectively reduced, visual contrast would only be slightly reduced.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 80.8 miles of BLM-administered land crossed by Alternative WYCO-B in the BLM Rawlins Field Office, 0.7 mile would not be in compliance with VRM Class III objectives, including:

- Cherokee Historic Trail – Noncompliance with VRM Class III objectives would occur where the Project crosses the historic trail at a noncontributing trail trace in a largely intact natural landscape setting. The Project would dominate views from the historic trail based on the introduction of transmission line structures, earthwork associated with construction access roads and tower pads, and right-of-way vegetation clearing. For more information refer to Contrast Rating Worksheet #276.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-B in Wyoming would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-247). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

TABLE 3-247
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES (WYOMING)

	WYCO-B (Agency and Applicant Preferred Alternative)	WYCO-C	WYCO-D	WYCO-F
Class A				
Total Area (acres)	85,298	85,268	85,298	85,298
Area Influenced by the Project (acres)	5,998	5,998	5,508	5,998
Percentage influenced by the Project	7.0	7.0	6.5	7.0
Class B				
Total Area (acres)	1,031,383	1,041,190	819,031	1,041,146
Area Influenced by the Project (acres)	205,334	211,917	239,656	265,602
Percentage influenced by the Project	19.9	20.4	29.3	25.5
Class C				
Total Area (acres)	3,067,279	2,325,990	2,788,191	2,978,348
Area Influenced by the Project (acres)	338,794	346,515	280,481	324,843
Percentage influenced by the Project	11.0	14.9	10.1	10.9

Scenery associated with this alternative route consists of low relief ridges and cuestas, rolling landforms, and riparian corridors with cultural modifications typical of rural development, oil and gas development, mining/extraction, transmission lines, pipelines, and wind farms. The Freezeout Mountains (Class A SQRU) would be influenced, but not crossed, by the Project near the southern edge of the mountains where existing cultural modifications occur including lower voltage transmission lines and wind turbines. Red Rim and Flat Tops SQRU (Class B SQRUs) would be influenced more by the Project as it bisects these units. Where the Project crosses the Red Rim SQRU, cultural modifications such as lower voltage transmission and oil and gas development do exist adjacent to the Project. In the location where the Project would traverse the Flat Tops SQRU, cultural modifications (included on the scenic quality rating

worksheet) such as oil and gas development occur adjacent to the Project, along the northern portion, through varying terrain.

Affected Environment (Colorado)

Scenery

Alternative WYCO-B in Colorado crosses Class B scenery associated with dissected ridge landscapes and riparian corridors and Class C landscapes associated with rolling steppe and plains landscapes typical of the Wyoming Basin physiographic province. As described for the Wyoming portion of this alternative route, a rural landscape character is a key feature of the areas crossed. A total of 29.4 miles of Class B scenery and 35.9 miles of Class C scenery would be crossed by Alternative WYCO-B.

Viewing Locations

Residences

Dispersed residences are primarily located along the Little Snake River north of Maybell and in proximity to U.S. Highway 40 along Links C61, C71, C91, and C175.

Travel Routes

The Sevenmile Ridge Destination Route, a road associated with moderate concern viewers that provides access to recreation areas along Sevenmile Ridge, would be paralleled by Links C61, C71, and C91 at a typical distance of 4 miles.

Recreation Areas

The Yampa River, associated with high concern viewers, would be crossed by Link C91 approximately 9 miles west of Maybell. The Yampa Valley Trail, also associated with high concern viewers, would be crossed by Link C91 approximately 2 miles south of where the Yampa River crossing would occur. The recreation areas along Sevenmile Ridge would have views of the Project on Links C61, C71, and C91. Recreation opportunities on Sevenmile Ridge include big game hunting, OHV riding, wild horse viewing, and many other activities. As in the Wyoming portion of Alternative WYCO-B, dispersed recreation is located throughout the publically administered lands.

Special Designations

Deerlodge Road, contained in the boundaries of Dinosaur National Monument, is located approximately 1.25 miles northwest of Link C173 (for more information, refer to Appendix G). Dispersed recreationists in the Cross Mountain WSA would have views 2.8 miles away from Link C91. A portion of the Yampa River State Park (associated with high concern viewers), containing the East Cross Mountain River Access Area, is located more than 2 miles west of Link C91.

KOPs specific to Alternative WYCO-B in Colorado include:

- #150: Dinosaur National Monument (Deerlodge Road) [simulation]
- #252: Colorado State Highway 318 (west of Maybell)
- #254: U.S. Highway 40 (east of Dinosaur)
- #287: Moffat County Road 10
- #289: Godiva Rim
- #290: Sevenmile Ridge Destination Route
- #299: East Cross Mountain River Access [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative WYCO-B in Colorado crosses 47.2 miles of BLM-administered land with all 47.2 miles in VRM Class III in the BLM Little Snake and White River Field Offices. These VRM Class III lands include lands adjacent to Sevenmile Ridge, Little Snake River, the Yampa River, and U.S. Highway 40.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-B in Colorado crosses 34.0 miles of Class B and 31.3 miles of Class C landscapes in the Little Snake and White River Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs	Class B SQRUs	Class C SQRUs
■ Cross Mountain Canyon	■ Coal Ridge ■ Cross Mountain ■ Douglas Draw/Peck Mesa[1] ■ Elk Springs ■ Maybell[1] ■ Pinyon Ridge[1] ■ Seven Mile[1] ■ Skull Creek ■ Spring Creek ■ Twelvemile Mesa ■ Windy Gulch	■ Cedar Springs[1] ■ Elk Springs South[1] ■ Fonce Flats[1] ■ Great Divide ■ Hiawatha/Powder Wash ■ M.F. Mountain[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative WYCO-B in Colorado cross 8.8 miles of high sensitivity, 25.8 miles of moderate sensitivity, and 30.2 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs	Moderate SLRUs	Low SLRUs
■ Godiva Rim	■ Godiva/Greystone ■ Moosehead ■ White River West	■ Danforth Hills ■ Elk Springs ■ Great Divide

Distance Zones

Alternative WYCO-B in Colorado crosses 49.5 miles in the foreground-middleground distance zone and 15.8 miles in the background distance zone.

Visual Resource Inventory Classes

Alternative WYCO-B in Colorado crosses 6.0 miles of VRI Class II, 8.0 miles of VRI Class III, and 51.3 miles of VRI Class IV in the Little Snake and White River Field Offices. The areas of VRI Class II are associated with Godiva Rim.

Environmental Consequences (Colorado)

Scenery

Effects of the Project on the rural character of landscapes crossed by Alternative WYCO-B in Colorado would be similar to those discussed for the Wyoming portion.

Similar to the Wyoming portion of this alternative route, the Colorado portion would result in moderate to low impacts on scenery except this portion of the alternative route crosses more Class B landscapes associated with dissected ridges and riparian corridors. These types of landscapes with varied topographical features and vegetation would be effected to a greater degree based on the construction and operation of the Project.

Viewing Locations

Residences

High impacts are anticipated on views from dispersed residences located north of Maybell, near the Little Snake River, where the Project would be located within 0.5 mile of residences in rolling terrain and where transmission structures may be skylined. Dispersed residences located between 0.5 mile and 2 miles from the Project in locations where existing transmission lines would not be paralleled by the Project, would generally have a moderate impact on their views due to the diminished dominance of the Project as a result of a more distant view. To reduce the level of contrast from these viewing locations, selective mitigation measures would be applied to reduce ground disturbance resulting from the construction of access roads through rolling terrain.

Dispersed residences along U.S. Highway 40 would have a low impact on their viewshed due to the presence of two existing transmission lines that, for the most part, are located between these dispersed residences and the Project. Therefore, a weak level of visual contrast would be introduced by the Project when compared to the existing views from these residences.

Travel Routes

Low impacts would occur on views from the Sevenmile Ridge Destination Route since the Project would be located more than 4 miles away from the road and views toward the Project would be mostly screened by topography. For additional analysis, refer to the contrast rating worksheet for KOP #290 in Appendix N.

Recreation Areas

High impacts would occur on views from the Yampa River and the adjacent Yampa Valley Trail where the Project would be located within 0.5 mile of these high concern viewing locations. To reduce the level of contrast where the Project crosses these visually sensitive areas, the span between transmission line structures would be maximized to reduce the visual dominance of the transmission structures being located directly adjacent to the Yampa River and Yampa Valley Trail. For additional analysis, refer to the contrast rating worksheet for KOP #299 and the associated visual simulation in Appendix N.

Since the majority of the recreation areas along Sevenmile Ridge would view the Project from more than 4 miles away with views of the Project intermittently screened and in locations where the Project would be visible, transmission structures would be backdropped by adjacent landforms. Therefore, impacts on views from these areas are anticipated to be low.

As described in the Wyoming portion of Alternative WYCO-B, impacts on views from dispersed recreation varies based on the level of contrast produced by the Project as compared to the existing landscape features, as well as on the distance from which the Project would be viewed.

Special Designations

Low impacts would occur on views from the Deerlodge Road entrance of Dinosaur National Monument because the Project would be viewed in context with two existing transmission lines located closer to the national monument than the Project. For additional analysis, refer to the contrast rating worksheet for KOP #150 and the associated visual simulation in Appendix N and Appendix G. Views from the portion of the Yampa River State Park containing the East Cross Mountain River Access Area would be mostly screened by steep slopes adjacent to the river, as well as the rolling terrain between the river and the Project. Due to the level of screening and the Project being located 2.8 miles from this high concern viewing location, impacts are anticipated to be at a low level. For additional analysis, refer to the contrast rating worksheet for KOP #299 in Appendix N.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 47.2 miles of BLM-administered land crossed by Alternative WYCO-B in the BLM Little Snake and White River Field Offices, this alternative route would have 0.6 miles not in compliance with VRM Class III objectives, including:

- Godiva Rim (Little Snake River Field Office) – Noncompliance with VRM Class III objectives would occur where the Project crosses over Godiva Rim in a natural landscape setting. Views from the proposed scenic road would be dominated by the Project as a result of introducing skylined transmission line structures, earthwork associated with access road and tower pad construction, and right-of-way vegetation clearing for 1 mile (approximately 2.5 minutes at 25 mph). For more information refer to Contrast Rating Worksheet #289.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-B in Colorado would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-248). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

TABLE 3-248
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES (COLORADO)

	WYCO-B (Agency and Applicant Preferred Alternative)	WYCO-C	WYCO-D	WYCO-F
Class A				
Total Area (acres)	658	658	268,127	658
Area Influenced by the Project (acres)	47	47	20,249	47
Percentage influenced by the Project	7.1	7.1	7.6	7.1

TABLE 3-248
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES (COLORADO)

	WYCO-B (Agency and Applicant Preferred Alternative)	WYCO-C	WYCO-D	WYCO-F
Class B				
Total Area (acres)	623,979	623,979	866,334	623,979
Area Influenced by the Project (acres)	149,111	149,111	161,017	149,111
Percentage influenced by the Project	23.9	23.9	18.6	23.9
Class C				
Total Area (acres)	1,125,330	1,125,330	1,084,485	1,125,330
Area Influenced by the Project (acres)	118,697	118,697	272,230	118,697
Percentage influenced by the Project	10.5	10.5	25.1	10.5

Scenery associated with Alternative WYCO-B consists of dissected ridges, rolling landforms, and riparian corridors with cultural modifications typical of rural development; however the SQRUs associated with U.S. Highway 40 do have additional modifications where existing transmission lines occur. The Cross Mountain Canyon SQRU (Class A) would be influenced by the Project in an area where limited cultural modifications exist and are associated with agriculture development. Seven Mile SQRU (Class B) would be influenced by this alternative route as it bisects this unit, which has limited cultural modifications concentrated along the Little Snake River.

Alternative WYCO-C

Affected Environment (Wyoming)

Scenery

Alternative WYCO-C in Wyoming crosses similar scenery as Alternative WYCO-B, except for traversing landscapes associated with the Adobe Town region. Of these landscapes, only Powder Rim would be directly crossed by the Project on Link W409 at the easternmost edge of the landscape. Other landscapes associated with Adobe Town, including the Willow Creek Rim located approximately 3 miles west of Link W409 and the Haystacks and Skull Creek Rim located more than 7 miles from Link W27, would not be crossed by the Project. Alternative WYCO-C crosses 32.8 miles of Class B scenery, 111.7 miles of Class C scenery, and 0.2 mile of developed land.

Viewing Locations

Viewing locations along Alternative WYCO-C in Wyoming are similar to Alternative WYCO-B, except the Cherokee Historic Trail and Overland Historic Trail would be crossed in different locations. The Cherokee Historic Trail would be crossed by Link W409 approximately 30 miles west of Baggs, and the Overland Historic Trail would be crossed by Link W27 16 miles south of Wamsutter.

KOPs specific to Alternative WYCO-C in Wyoming include:

- #220: North Platte River SRMA [simulation]
- #222: Hanna Draw Road
- #226: I-80 (east of Sinclair)
- #227: Wyoming Highway 71
- #228: Outlaw Trail Loop Scenic Drive(Wyoming Highway 789 south of I-80)
- #229: Wamsutter residential

- #275: Overland Historic Trail
- #276: Cherokee Historic Trail
- #281: Rawlins to Baggs Historic Trail (Twenty Mile Road)
- #286: Adobe Town WSA Destination Route (BLM Road 4411)
- #295: Fort Fred Steele Historic Site

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative WYCO-C in Wyoming crosses 79.6 miles of BLM-administered land with 39.1 miles in VRM Class III and 40.5 miles in VRM Class IV in the BLM Rawlins Field Office. The VRM Class III lands associated with this alternative route are similar to those discussed for Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-C in Wyoming crosses 52.4 miles of Class B and 92.3 miles of Class C landscapes in the BLM Rawlins Field Office. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Freezeout Mountains

Class B SQRUs
- Adobe Town[1]
- Atlantic Rim[1]
- Bolton Ranch[1]
- Cottonwood Draw
- Delaney Rim[1]
- Flat Tops
- Medicine Bow River[1]
- Parallel Ridges[1]
- Platte North[1]
- Powder Rim[1]
- Rawlins Uplift
- Red Rim[1]
- Rendle Hill
- Robbers Gulch

Class C SQRUs
- Cedar Breaks[1]
- Continental Divide[1]
- Creston[1]
- Dana Meadows[1]
- Great Basin Divide
- Hanna Uplift[1]
- Little Medicine Bow River[1]
- Overland Trail[1]
- Sage Creek
- Sage Flats[1]
- Sand Creek
- Separation Flats[1]
- Shamrock Hills
- Spade Flats
- Walcott[1]
- West Separation Flats[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative WYCO-C in Wyoming crosses 49.1 miles of high sensitivity, 20.2 miles of moderate sensitivity, and 75.4 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Atlantic Rim
- Continental Divide NST
- Greater Adobe Town Area
- Lake Creek Flats
- North Platte River (Middle Reach)
- Overland Trail
- Powder Rim
- Red Rim

Moderate SLRUs
- Fort Steele Breaks
- Great Basin Divide
- I-80 Corridor

Low SLRUs
- Barrel Springs
- Bolton Ranch
- Dana Meadows
- Hanna Basin
- Horse Butte
- Medicine Bow

Distance Zones

Alternative WYCO-C in Wyoming crosses 144.7 miles in the foreground-middleground distance zone and 0.3 mile in the background distance zone.

Visual Resource Inventory Classes

This alternative route crosses 35.2 miles of VRI Class II, 22.4 miles of VRI Class III, and 87.2 miles of VRI Class IV in the BLM Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, Greater Adobe Town Area, and Powder Rim.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-C in Wyoming would have similar impacts on scenery as Alternative WYCO-B, except for impacts associated with the Adobe Town region. Impacts are anticipated to be low where the Project crosses Powder Rim near an existing pipeline corridor at the edge of this landscape, which does not include the same distinctive landscape features found farther to the west.

Viewing Locations

Impacts on viewing locations along Alternative WYCO-C in Wyoming are similar to Alternative WYCO-B, except for impacts associated with the Cherokee and Overland historic trails. High impacts are anticipated on views from the Overland Historic Trail as well, but the Project crosses the historic trail in an area less influenced by oil and gas development that would increase visual contrast produced by the Project when compared to the existing landscape condition. Selective mitigation measures would be applied to reduce contrast, including use of existing access to the extent practicable, avoiding the construction of access roads across the historic trail, and maximizing the span between transmission line structures where the trail would be crossed to reduce the visual dominance of the structures. For additional analysis, refer to the contrast rating worksheet for KOP #275 in Appendix N.

High impacts also are anticipated on views from the Cherokee Historic Trail on Alternative WYCO-C in Wyoming, except the Project crosses the trail adjacent to a major pipeline corridor that has modified the existing landscape character. The application of selective mitigation measures to reduce the level of contrast where the trail would be crossed includes limiting ground disturbance from the construction of access roads and placing towers as far apart as practicable on either side of the trail to reduce the visual dominance of the Project in the trail's viewshed. For additional analysis, refer to the contrast rating worksheet for KOP #276 in Appendix N.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 79.6 miles of BLM-administered land crossed by Alternative WYCO-C in the BLM Rawlins Field Office, this alternative route would have 1.2 miles not in compliance with VRM Class III objectives, including:

- Cherokee Historic Trail – Noncompliance with VRM Class III objectives would occur where the Project crosses the historic trail at a contributing trail trace in a natural landscape setting with limited influence from an existing pipeline corridor. Views from the historic trail would be dominated by the Project, including the introduction of skylined transmission line structures, earthwork associated with access road and tower pad construction, and right-of-way vegetation clearing. For more information refer to Contrast Rating Worksheet #276.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-C in Wyoming would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-247). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities, construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

Scenery associated with Alternative WYCO-C consists of low relief ridges and cuestas, rolling landforms, and riparian corridors with cultural modifications typical of rural development, oil and gas development, mining/extraction, transmission lines, pipelines, and wind farms. The Freezeout Mountains SQRU (Class A) would be influenced, but not crossed, by the Project near the SQRU's southern edge where existing cultural modifications occur, including lower voltage transmission lines and wind turbines. Red Rim SQRU (Class B) would be more influenced by the Project as it bisects this unit where cultural modifications such as lower voltage transmission and oil and gas development do exist adjacent to the Project. Influence from the Project on the Adobe Town SQRU (Class B) would be concentrated along the eastern portion of the SQRU where the project would occur adjacent to existing pipelines (not included on the scenic quality rating worksheet).

Affected Environment (Colorado)

Scenery

Alternative WYCO-C in Colorado cross the same scenery as Alternative WYCO-B.

Viewing Locations

Viewing locations along Alternative WYCO-C in Colorado are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

The federal agency visual management objectives for Alternative WYCO-C in Colorado are the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes of Alternative WYCO-C are the same as Alternative WYCO-B.

Environmental Consequences (Colorado)

Scenery

Alternative WYCO-C in Colorado would have the same impacts on scenery as Alternative WYCO-B.

Viewing Locations

Impacts on viewing locations along Alternative WYCO-C in Colorado are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative WYCO-C in Colorado is the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-C in Colorado would have the same effects on BLM SQRUs as Alternative WYCO-B (Table 3-248).

Alternative WYCO-D

Affected Environment (Wyoming)

Scenery

Alternative WYCO-D in Wyoming cross similar scenery as Alternative WYCO-B for 33.3 miles of Class B scenery, 101.6 miles of Class C scenery, and 0.0 mile of developed land.

Viewing Locations

Viewing locations along Alternative WYCO-D in Wyoming are similar to Alternative WYCO-B, except the Cherokee Historic Trail, Overland Historic Trail, and Rawlins to Baggs Road would be crossed in different locations. The Cherokee Historic Trail would be crossed by Link W111 approximately 15 miles north of Baggs. Link W110 crosses the Overland Historic Trail in proximity to a historic marker along Wyoming Highway 789, 30 miles north of Baggs. In addition to crossing the Rawlins to Baggs Road on Link W30, this historic trail would be crossed twice north of Baggs on Links W111 and W299.

Additional viewing locations, not discussed as part of Alternative WYCO-B, include residences in the Little Snake River Valley, Outlaw Trail Loop Scenic Drive (WY 789), Lincoln Highway (U.S. Highway 30), and Upper Muddy Creek Watershed/Grizzly WHMA. Scattered, rural residences are located southwest of Baggs in the Little Snake River Valley in proximity to Link W321. Links W109, W110, W111, and W121 would parallel the Outlaw Trail Loop Scenic Drive, associated with high concern viewers, for approximately 40 miles (at a typical distance of less than 0.25 mile) from Creston Junction to Baggs. The Lincoln Highway, associated with moderate concern viewers, would be crossed twice by Link W22 within a 5-mile stretch southeast of Hanna. Dispersed recreation viewers in the Upper Muddy Creek Watershed/Grizzly WHMA would have views of the Project on Link W110.

KOPs specific to Alternative WYCO-D in Wyoming include:

- #67: Dispersed residences south of Baggs
- #73: Baggs residential
- #177: Overland Trail historical monument (Wyoming Highway 789)
- #197: Hanna residential [simulation]
- #198: U.S. Highway 30 (east of Hanna)
- #220: North Platte River SRMA [simulation]
- #225: Outlaw Trail Loop Scenic Drive(Wyoming Highway 789 north of Baggs) [simulation]
- #226: I-80 (east of Sinclair)
- #227: Wyoming Highway 71
- #228: Outlaw Trail Loop Scenic Drive(Wyoming Highway 789 south of I-80)
- #281: Rawlins to Baggs Historic Trail (Twenty Mile Road)
- #295: Fort Fred Steele Historic Site

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative WYCO-D in Wyoming crosses 67.7 miles of BLM-administered land with 13.0 miles in VRM Class III and 54.7 miles in VRM Class IV in the BLM Rawlins Field Office. The VRM Class III lands associated with this alternative route are similar to those discussed for Alternative WYCO-B, except that this alternative route includes lands adjacent to Wyoming Highway 789 and Baggs.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-D in Wyoming cross 67.7 miles of Class B and 67.2 miles of Class C landscapes in the BLM Rawlins Field Office. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Freezeout Mountains

Class B SQRUs
- Atlantic Rim[1]
- Bolton Ranch[1]
- Deep Creek
- Doty Mountain[1]
- Little Snake Valley
- Medicine Bow River[1]
- Parallel Ridges[1]
- Platte North[1]
- Rawlins Uplift
- Red Rim[1]
- Rendle Hill
- Robbers Gulch[1]
- Sand Creek Hills

Class C SQRUs
- Chalk Bluff
- Creston[1]
- Dana Meadows[1]
- Hanna Uplift[1]
- Little Medicine Bow River[1]
- Muddy Creek[1]
- Sage Creek
- Separation Flats[1]
- Shamrock Hills
- Spade Flats[1]
- The Sand Hills
- Walcott[1]
- West Separation Flats[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative WYCO-D in Wyoming cross 34.4 miles of high sensitivity, 42.7 miles of moderate sensitivity, and 58.8 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Atlantic Rim
- Continental Divide NST
- Greater Adobe Town Area
- Lake Creek Flats
- North Platte River (Middle Reach)
- Red Rim

Moderate SLRUs
- Cherokee Historic Trail
- Doty Mountain
- Fort Steele Breaks
- Great Basin Divide
- I-80 Corridor
- Poison Buttes

Low SLRUs
- Barrel Springs
- Bolton Ranch
- Dana Meadows
- Hanna Basin
- Horse Butte
- Medicine Bow

Distance Zones

The Project would be completely located in the foreground-middleground distance zone for Alternative WYCO-D.

Visual Resource Inventory Classes

Alternative WYCO-D crosses 22.0 miles of VRI Class II, 42.8 miles of VRI Class III, and 70.1 miles of VRI Class IV in the BLM Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, and Overland Trail.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-D in Wyoming would have similar impacts on scenery as Alternative WYCO-B.

Viewing Locations

Alternative WYCO-D in Wyoming would have similar impacts on viewing locations as Alternative WYCO-B, except for impacts associated with the Overland, Cherokee, and Rawlins to Baggs historic trails. High impacts are anticipated on views from the Overland Historic Trail where the trail crosses Wyoming Highway 789 through an area influenced by oil and gas development. Views from the Overland Trail historic marker would be focused away from the Project, which crosses the historic trail on the east side of the road. To reduce contrast produced by the Project, selective mitigation measures would be applied to maximize the span length between transmission line structures at the trail crossing to reduce the visual dominance of structures located directly adjacent to the trail. For additional analysis, refer to the contrast rating worksheet for KOP #177 in Appendix N.

The Cherokee Historic Trail also would be crossed in an area influenced by oil and gas development, but due to the relative scale of the proposed transmission line structures when compared to structures associated with oil and gas development, impacts are anticipated to be at a high level. Selective mitigation measures to reduce contrast on views from the trail include using adjacent access to the extent practicable to avoid constructing access roads across the historic trail and maximizing the span length at the trail crossing. In addition to the impacts discussed for Alternative WYCO-B on the Rawlins to Baggs Road (historic trail), high impacts are anticipated where the trail would be crossed, then paralleled for 8 miles and crossed again north of Baggs. Contrast produced by the Project would be increased due to the longer duration views of the Project where the trail would be paralleled. Selective mitigation measures to reduce contrast would be applied and include using existing access to the extent practicable to avoid constructing access roads that would cross the historic trail and maximizing the span length where the trail would be crossed. Impacts on additional viewing locations not discussed as part of Alternative WYCO-B are described below.

Residences

Dispersed residences along Wyoming Highway 789 would have a high level of visual impacts where views of the Project would occur from approximately 0.5 mile away. The Project would be viewed from these dispersed residences traversing rolling terrain predominately vegetated by sagebrush and grassland communities. To most effectively reduce contrast on views from these residences, the Project would need to be located farther away but that would locate the Project outside of the designated utility corridor. Moderate impacts would occur on views from Baggs and adjacent dispersed residences in the Little Snake River Valley where the Project would be visible from approximately 2 miles away. Since the Project would be located at the top of an escarpment, views of the Project in some areas would be screened from view by topography, while in other areas skylined transmission line structures would be visible.

Travel Routes

Long duration views of the Project along the Outlaw Trail Loop Scenic Drive (Wyoming Highway 789) would result in a high impact on views from the scenic highway. The Project crosses the scenic highway in areas that have been modified by oil and gas development, but due to the proximity of the Project to the highway, the Project would dominate views between Creston Junction and Baggs. To most effectively reduce contrast on views from the scenic highway, the Project would need to be placed farther east, which would locate the Project outside of the designated utility corridor. For additional analysis, refer to the contrast rating worksheet for KOP #225 and the associated visual simulation in Appendix N.

Moderate impacts would occur on views from the Lincoln Highway (U.S. Highway 30), adjacent to Hanna, where the Project crosses this historic road twice in proximity to an existing lower voltage transmission line. To reduce contrast produced by the Project, selective mitigation measures would be applied at the highway crossings to maximize the span between transmission line structures to reduce their visual dominance. For additional analysis, refer to the contrast rating worksheet for KOP #198 in Appendix N.

Special Designations

Moderate impacts are anticipated on views from the Upper Muddy Creek Watershed/Grizzly WHMA, associated with moderate concern viewers, where the Project would be located within 0.5 mile of this special designation.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 67.7 miles of BLM-administered land crossed by Alternative WYCO-D route in the BLM Rawlins Field Office, all of this alternative route would be in compliance with VRM Class III objectives.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-D in Wyoming would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-247). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

Scenery associated with this alternative route consists of low relief ridges and cuestas, rolling landforms, and riparian corridors with cultural modifications typical of rural development, oil and gas development, mining/extraction, transmission lines, pipelines, and wind farms. The Freezeout Mountains SQRU (Class A) would be influenced, but not crossed, by the Project near the SQRU's southern edge where existing cultural modifications occur, including lower voltage transmission lines and wind turbines. Red Rim SQRU (Class B) would be more influenced by the Project as it bisects this unit where cultural modifications such as lower voltage transmission and oil and gas development do exist adjacent to the Project. Influence from the Project on the Robbers Gulch SQRU (Class B) would be concentrated along the eastern portion of the SQRU where the project would occur adjacent to oil and gas development along Wyoming Highway 789 (included on the scenic quality rating worksheet).

Affected Environment (Colorado)

Scenery

Alternative WYCO-D in Colorado crosses similar scenery as Alternative WYCO-B with the addition of crossing the Little Snake River Valley southwest of Baggs, Wyoming, and the Yampa River east of Craig. The Little Snake River, a Class B landscape, is characterized by a well-defined riparian corridor and the adjacent agricultural fields, which create a distinctive rural character. Dense cottonwood groves would be crossed by the Project on Link C100 where the Project crosses the Yampa River landscape, Class B scenery, south of U.S. Highway 40. Alternative WYCO-D crosses 53.9 miles of Class B scenery, 60.0 miles of Class C scenery, and 0.6 mile of developed land.

Viewing Locations

Viewing locations along Alternative WYCO-D in Colorado are similar to Alternative WYCO-B, except views from the Yampa River, Yampa Valley Trail, and dispersed residences would be in different landscape settings including areas with few existing modifications. The Yampa River, associated with high concern viewers, would be crossed 7 miles east of Craig on Link C100 adjacent to the crossing of U.S. Highway 40, which has been assessed as a moderate concern viewing location. This alternative route crosses the Yampa Valley Trail in two locations. The first crossing would be southwest of Craig in an area where the trail shares its alignment with Colorado State Highway 13 on Link C105, and the second crossing would be located south of Maybell along Moffat County Road 57 on Link C106. Dispersed rural residences are generally located in three areas along this alternative route (1) south of Baggs, Wyoming in the Little Snake River Valley (Links C17, C27, C33, and C25); (2) along Colorado State Highway 13 from Baggs, Wyoming to Craig, Colorado (Links C17, C27, C33, C25, C20, C13, and C100); and (3) adjacent to U.S. Highway 40 between Craig and Maybell (Links C101, C105, and C106).

Since this alternative route does not occur in proximity to Sevenmile Ridge, Cross Mountain, or the unit of the Yampa River State Park that contains the East Cross Mountain River Put In, these viewers are not discussed for this alternative route.

KOPs specific to Alternative WYCO-D in Colorado include:

- #50: Dispersed Maybell residential (Juniper Mountain)
- #51: Juniper Canyon Recreation Area
- #52: Dispersed residences southwest of Craig [simulation]
- #54: South Beach Recreation Area
- #56: Colorado State Highway 13 (south of Craig)
- #58: Dispersed residences south of Craig
- #59: Dispersed residence southeast of Craig
- #63: Dispersed residence along Colorado State Highway 13

- #64: Access to Routt National Forest recreation
- #66: Dispersed residence along Colorado State Highway 13 [simulation]
- #67: Dispersed residences south of Baggs
- #83: Moffat County Road 57
- #150: Dinosaur National Monument (Deerlodge Road) [simulation]
- #223: U.S. Highway 40 (viewpoint pullout east of Craig)
- #251: U.S. Highway 40 (east of Craig)
- #254: U.S. Highway 40 (east of Dinosaur)
- #288: Colorado State Highway 13 (south of Baggs)
- #291: Yampa River State Park
- #297: Elkhead Reservoir Campground
- #302: Yampa River (Juniper Canyon)

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative WYCO-D in Colorado crosses 37.8 miles of BLM-administered land with 37.5 miles in VRM Class III and 0.3 mile in VRM Class IV in the Little Snake and White River Field Offices. The VRM Class III lands associated with this alternative route are similar to those discussed for Alternative WYCO-B, except this alternative route includes lands adjacent to Colorado State Highway 13 and U.S. Highway 40.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-D in Colorado crosses 46.0 miles of Class B and 68.5 miles of Class C landscapes in the BLM Little Snake and White River Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class B SQRUs
- Elkhead[1]
- Juniper Mountain[1]
- Pinyon Ridge[1]
- Steamboat Valley/Stokes Gulch/Twenty Mile Park[1]
- Yampa River Valley/Hayden[1]

Class C SQRUs
- Cedar Springs[1]
- Elk Springs South
- Great Divide[1]
- M.F. Mountain[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Unit

Alternative WYCO-D in Colorado crosses 10.5 miles of high sensitivity, 59.5 miles of moderate sensitivity, and 44.5 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Little Yampa Canyon
- Steamboat

Moderate SLRUs
- Duffy Mountain
- Godiva/Greystone
- Moosehead
- White River West
- William Fork
- Yampa Canyon

Low SLRUs
- Danforth Hills
- Elk Springs
- Great Divide

Distance Zones

Alternative WYCO-D is completely located in the foreground-middleground distance zone.

Visual Resource Inventory Classes

This alternative route crosses 3.3 miles of VRI Class II, 45.9 miles of VRI Class III, and 65.3 miles of VRI Class IV in the BLM Little Snake and White River Field Offices. The areas of VRI Class II are associated with the Yampa River.

Environmental Consequences (Colorado)

Scenery

Alternative WYCO-D in Colorado would have similar impacts on scenery as Alternative WYCO-B, except for the crossings of the Little Snake River Valley near Baggs, Wyoming, and the Yampa River near Craig, Colorado. Moderate impacts would occur on the Little Snake River landscape due to the contrast associated with the introduction of transmission line structures, especially at the crossing of the river, in addition to clearing of riparian vegetation in the right-of-way. Selective mitigation measures applied in the Little Snake River landscape to reduce contrast with the existing landscape character include limiting the clearing of riparian vegetation in the right-of-way and minimizing the construction of access roads adjacent to the river, which also would require additional clearing of riparian vegetation. High impacts would occur where the Project crosses the Yampa River east of Craig due to the clearing of dense cottonwoods in the right-of-way and the introduction of transmission lines structures. Selective mitigation applied in the Yampa River landscape to reduce the contrast includes limiting the clearing of cottonwoods in the right-of-way and minimizing the construction of access roads adjacent to the river.

Viewing Locations

Impacts on viewing locations along Alternative WYCO-D in Colorado would be similar to Alternative WYCO-B, except for impacts associated with dispersed residences, the Yampa River, and the Yampa Valley Trail.

Residences

Views from dispersed residences in the Little Snake River Valley near Baggs, Wyoming would have a high level of impact due to the Project being located within 0.5 mile of residences in a landscape setting with few cultural modifications, except for agricultural development. Due to the proximity of the Project to these dispersed residences, selective mitigation measures would not be effective at reducing the level of visual contrast. For additional analysis, refer to the contrast rating worksheet for KOP #67 in Appendix N.

High impacts would occur on clusters of residences along Colorado State Highway 13 where the Project would be located within 0.5 mile of these residences traversing rolling terrain. The application of selective mitigation to reduce the ground disturbance associated with construction access roads would reduce visual contrast produced by the Project. For additional analysis, refer to the contrast rating worksheet for KOP #66 and the associated visual simulation in Appendix N.

Generally, low impacts would occur on views from dispersed residences between Craig and Maybell because residents would view the Project in context of two existing transmission lines. An area of high impacts was identified southeast of Craig where the Project would be located 0.5 mile from the existing transmission lines; due to the separation, residences would be closer to the Project than the existing lines and some residences would be located in between the Project and the existing lines. To reduce the level of contrast as the Project traverses rolling terrain, selective mitigation measures would be applied to reduce

ground disturbance associated with the construction of access roads. For additional analysis, refer to the contrast rating worksheet for KOP #52 and the associated visual simulation in Appendix N.

Recreation Areas

High impacts would occur on views from the Yampa River where the Project traverses a steep ridge north of the river and then crosses through groves of cottonwoods adjacent to the river corridor. To reduce contrast produced by the construction of access roads on the steep ridge, selective mitigation measures would reduce ground disturbance from the construction of access roads. To further reduce contrast adjacent to the Yampa River, tree clearing would be minimized to soften the line produced by right-of-way vegetation clearing; and existing roads would be used to the extent practicable to limit additional areas of vegetation clearing associated with construction of access roads.

Low impacts would occur on views from the first location where the Project crosses the Yampa Valley Trail because the area is dominated by existing industrial development, including the Craig Station Power Plant and three existing transmission lines. The second crossing of the Yampa Valley Trail would occur south of Maybell and produce a moderate level of impacts on views from the trail. The Project would be seen in context of two existing transmission lines, but recreationists traveling northbound on the trail would have views dominated by the Project due to it being closer. Selective mitigation measures would be applied to maximize the distance between structures on either side of the trail to reduce the dominance of the Project and, therefore,, reduce visual contrast.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 37.8 miles of BLM-administered land crossed by Alternative WYCO-D in the BLM Little Snake and White River Field Offices, this alternative route would have 8.2 miles not in compliance with VRM Class III objectives, including:

- Colorado State Highway 13 (Little Snake Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project paralleling the highway for 17 miles (approximately 16 minutes at 65 mph). Due to the proximity of the Project to the road, transmission line structures would be skylined in level to rolling terrain. For more information refer to Contrast Rating Worksheet #288.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-D would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-248). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

Scenery associated with Alternative WYCO-D consists of rolling landforms and riparian corridors with cultural modifications that consist of transmission lines generally concentrated around Craig, Colorado, and U.S. Highway 40 as well as development typical of rural and urban settings. The Routt and Duffy Valley SQRUs (Class A) would both be influenced by the Project. The Routt SQRU would be influenced along its western edge where the Project would traverse rolling terrain adjacent to Colorado State Highway 13 and associated rural development. The Duffy Valley SQRU would be influenced along its

northern edge through rolling terrain near the Yampa River and adjacent to existing similar electrical transmission lines as compared to the Project. Fortification Rocks SQRU (Class B) would be influenced where the Project would occur through rolling terrain in a rural setting. The Juniper Hot Springs and Juniper Mountain SQRUs (Class B) would be influenced by the Project where it occurs through rolling terrain near the Yampa River adjacent to existing transmission lines.

Alternative WYCO-F

Affected Environment (Wyoming)

Scenery

Alternative WYCO-F in Wyoming crosses similar scenery as Alternative WYCO-B for 33.1 miles of Class B scenery, 120.4 miles of Class C scenery, and 0.0 mile of developed land.

Viewing Locations

Viewing locations along Alternative WYCO-F in Wyoming are similar to Alternative WYCO-B, except the Cherokee Historic Trail would be crossed three times on Links W120, W124, and W302.

KOPs specific to Alternative WYCO-F in Wyoming include:

- #220: North Platte River SRMA [simulation]
- #222: Hanna Draw Road
- #226: I-80 (east of Sinclair)
- #227: Wyoming Highway 71
- #228: Outlaw Trail Loop Scenic Drive (Wyoming Highway 789 south of I-80)
- #229: Wamsutter residential
- #275: Overland Historic Trail
- #276: Cherokee Historic Trail
- #281: Rawlins to Baggs Historic Trail (Twenty Mile Road)
- #295: Fort Fred Steele Historic Site

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative WYCO-F in Wyoming crosses 93.5 miles of BLM-administered land with 34.6 miles in VRM Class III and 58.9 miles in VRM Class IV in the BLM Rawlins Field Office. The VRM Class III lands associated with this alternative route are similar to those discussed for Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-F in Wyoming crosses 66.4 miles of Class B and 87.1 miles of Class C landscapes in the BLM Rawlins Field Office. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Freezeout Mountains

Class B SQRUs
- Atlantic Rim[1]
- Bolton Ranch[1]
- Cottonwood Draw
- Deep Creek
- Doty Mountain
- Flat Tops
- Little Snake Valley
- Medicine Bow River[1]
- Parallel Ridges[1]
- Platte North[1]
- Powder Rim[1]
- Rawlins Uplift
- Red Rim[1]
- Rendle Hill
- Robbers Gulch[1]

Class C SQRUs
- Cedar Breaks[1]
- Continental Divide
- Creston[1]
- Dana Meadows[1]
- Hanna Uplift[1]
- Little Medicine Bow River[1]
- Muddy Creek
- Sage Creek
- Sage Flats
- Sand Creek[1]
- Separation Flats[1]
- Shamrock Hills
- Spade Flats
- Walcott[1]
- West Separation Flats[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Unit

Alternative WYCO-F in Wyoming crosses 45.0 miles of high sensitivity, 36.9 miles of moderate sensitivity, and 71.6 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Atlantic Rim
- Continental Divide NST
- Greater Adobe Town Area
- Lake Creek Flats
- North Platte River (Middle Reach)
- Overland Trail
- Powder Rim
- Red Rim

Moderate SLRUs
- Fort Steele Breaks
- Great Basin Divide
- I-80 Corridor
- Poison Buttes

Low SLRUs
- Barrel Springs
- Bolton Ranch
- Dana Meadows
- Hanna Basin
- Horse Butte
- Medicine Bow

Distance Zones

Alternative WYCO-F in Wyoming cross 153.5 miles in the foreground-middleground distance zone and 0.3 mile in the background distance zone.

Visual Resource Inventory Classes

Alternative WYCO-F in Wyoming cross 27.6 miles of VRI Class II, 39.5 miles of VRI Class III, and 86.5 miles of VRI Class IV in the BLM Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, and Powder Rim.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-F would have similar impacts on scenery as Alternative WYCO-B.

Viewing Locations

Impacts on viewing locations along Alternative WYCO-F in Wyoming are similar to Alternative WYCO-B, except for impacts associated with the Cherokee Historic Trail. High impacts would occur at each of the three locations where the Project crosses the historic trail. At two of these locations, the Project crosses the trail in an area with few cultural modifications; and the third trail crossing would occur at the edge of an area influenced by oil and gas development. To reduce visual contrast produced by the Project, selective mitigation measures would be applied to use existing access to the extent practicable to avoid constructing access roads across the historic trail and to maximize the span length across the trail to reduce the visual dominance of transmission structures in the trail's viewshed.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 93.5 miles of BLM-administered land crossed by Alternative WYCO-F in the BLM Rawlins Field Office, this alternative route would have 1.7 miles not in compliance with VRM Class III objectives, including:

- Cherokee Historic Trail – Noncompliance with VRM Class III objectives would occur at two locations where the Project crosses the historic trail. Both of these crossings occur in largely intact natural landscape settings with one at a contributing trail trace and the other at a noncontributing trail trace. Views from the historic trail would be dominated by the Project, including the introduction of skylined transmission line structures, earthwork associated with access road and tower pad construction, and right-of-way vegetation clearing. For more information refer to Contrast Rating Worksheet #276.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-F in Wyoming would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-247). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

Scenery associated with this alternative route consists of low relief ridges and cuestas, rolling landforms, and riparian corridors with cultural modifications typical of rural development, oil and gas development, mining/extraction, transmission lines, pipelines, and wind farms. The Freezeout Mountains SQRU (Class A) would be influenced, but not crossed, by the Project near the SQRU's southern edge where existing cultural modifications occur, including lower voltage transmission lines and wind turbines. Red Rim SQRU (Class B SQRU) would be more influenced by the Project as it bisects this unit where cultural modifications such as lower voltage transmission and oil and gas development do exist adjacent to the Project. Influence from the Project on the Robbers Gulch SQRU (Class B) would be concentrated through the middle of the SQRU where the project would occur adjacent to oil and gas development (included on the scenic quality rating worksheet).

Affected Environment (Colorado)

Scenery

Alternative WYCO-F in Colorado cross the same scenery as Alternative WYCO-B.

Viewing Locations

Viewing locations along Alternative WYCO-F in Colorado are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

The federal agency visual management objectives of Alternative WYCO-F and in Colorado are the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes for Alternative WYCO-F are the same as Alternative WYCO-B.

Environmental Consequences (Colorado)

Scenery

Alternative WYCO-F in Colorado would have the same impacts on scenery as Alternative WYCO-B.

Viewing Locations

Impacts on viewing locations along Alternative WYCO-F in Colorado are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative WYCO-F is the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Alternative WYCO-F would have the same effects on SQRUs as Alternative WYCO-B (Table 3-248).

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The baseline resource inventory and residual impacts for the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes are presented in Tables 3-249 and 3-250.

Alternative COUT BAX-B

Affected Environment (Colorado)

Scenery

Alternative COUT BAX-B crosses scenery typical of the Uinta Basin section of the Colorado Plateaus physiographic province. From an area approximately 20 miles east of the community of Dinosaur to Rangely, the Project crosses Class B scenery characterized by low-lying hills with scattered pinyon-juniper vegetation. South of Rangely, the Project would traverse the East Tavaputs Plateau (Class B scenery) for approximately 50 miles, summiting near Baxter Pass. The East Tavaputs Plateau is made up of a series of linear drainages surrounded by moderate-elevation mountains with vegetation transitioning from pinyon-juniper at the lower elevations to Douglas-fir and aspens at the highest elevations.

TABLE 3-249
ALTERNATIVE ROUTE COMPARISON FOR PROJECT-LEVEL VISUAL RESOURCE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Scenery (miles crossed)				High Concern Viewers (miles crossed)					Moderate Concern Viewers (miles crossed)					Management Classifications (miles crossed)					
																Bureau of Land Management Visual Resource Management Classes[1]			U.S. Forest Service Visual Quality Objectives[2]		
		A	B	C	Developed	0 to 0. 5 mile	0.5 to 1.0 mile	1 to 2 miles	2 to 3 miles	More than 3 miles	0 to 0. 5 mile	0.5 to 1.0 mile	1 to 2 miles	2 to 3 miles	More than 3 miles	Class II	Class III	Class IV	Retention	Partial Retention	Modification
COUT BAX-B	279.9	9.0	106.4	164.3	0.2	135.2	60.8	70.8	13.1	0.0	114.0	50.7	49.7	30.4	35.1	5.1	133.8	33.7	0.0	11.2	5.1
Colorado	*87.0*	*0.0*	*65.3*	*21.7*	*0.0*	*34.1*	*20.3*	*24.4*	*8.2*	*0.0*	*25.8*	*11.4*	*9.0*	*5.7*	*35.1*	*4.4*	*33.7*	*31.5*	*0.0*	*0.0*	*0.0*
Utah	*192.9*	*9.0*	*41.1*	*142.6*	*0.2*	*101.1*	*40.5*	*46.4*	*4.9*	*0.0*	*88.2*	*39.3*	*40.7*	*24.7*	*0.0*	*0.7*	*100.1*	*2.2*	*0.0*	*11.2*	*5.1*
COUT BAX-C	290.4	9.0	107.5	173.7	0.2	143.3	65.7	68.3	13.1	0.0	122.3	51.5	48.7	31.3	36.6	5.1	140.4	33.7	0.0	11.2	5.1
Colorado	*87.0*	*0.0*	*65.3*	*21.7*	*0.0*	*34.1*	*20.3*	*24.4*	*8.2*	*0.0*	*25.8*	*11.4*	*9.0*	*5.7*	*35.1*	*4.4*	*33.7*	*31.5*	*0.0*	*0.0*	*0.0*
Utah	*203.4*	*9.0*	*42.2*	*152.0*	*0.2*	*109.2*	*45.4*	*43.9*	*4.9*	*0.0*	*96.5*	*40.1*	*39.7*	*25.6*	*1.5*	*0.7*	*106.7*	*2.2*	*0.0*	*11.2*	*5.1*
COUT BAX-E	292.2	2.4	106.4	183.3	0.1	112.7	67.8	66.7	22.8	22.2	138.1	51.3	50.6	17.1	35.1	5.1	130.1	54.5	0.0	7.7	0.0
Colorado	*87.0*	*0.0*	*65.3*	*21.7*	*0.0*	*34.1*	*20.3*	*24.4*	*8.2*	*0.0*	*25.8*	*11.4*	*9.0*	*5.7*	*35.1*	*4.4*	*33.7*	*31.5*	*0.0*	*0.0*	*0.0*
Utah	*205.2*	*2.4*	*41.1*	*161.6*	*0.1*	*78.6*	*47.5*	*42.3*	*14.6*	*22.2*	*112.3*	*39.9*	*41.6*	*11.4*	*0.0*	*0.7*	*96.4*	*23.0*	*0.0*	*7.7*	*0.0*

NOTES:
[1]Bureau of Land Management Visual Resource management Class I is not crossed by any of the Project alternative routes.
[2]U.S. Forest Service Preservation or Maximum Modification Visual Quality Objectives are not crossed by any of the Project alternative routes.

TABLE 3-250
ALTERNATIVE ROUTE COMPARISON FOR VISUAL RESOURCES RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Residual Impacts (miles)										Compliance/Consistency (miles)				
		Scenery				High Concern Viewers			Moderate Concern Viewers			Bureau of Land Management Visual Resource Management Classes		U.S. Forest Service Visual Quality Objectives		Not Applicable
		High	Moderate	Low	Not Identifiable	High	Moderate	Low	High	Moderate	Low	Compliant	Not Compliant	Consistent	Not Consistent	
COUT BAX-B	279.9	3.9	93.1	182.7	0.2	121.7	86.5	71.7	2.4	104.3	173.2	134.0	38.6	6.3	10.0	91.0
Colorado	*87.0*	*0.4*	*64.9*	*21.7*	*0.0*	*33.1*	*24.4*	*29.5*	*2.4*	*25.9*	*58.7*	*57.4*	*12.2*	*0.0*	*0.0*	*17.4*
Utah	*192.9*	*3.5*	*28.2*	*161.0*	*0.2*	*88.6*	*62.1*	*42.2*	*0.0*	*78.4*	*114.5*	*76.6*	*26.4*	*6.3*	*10.0*	*73.6*
COUT BAX-C	290.4	3.9	95.2	191.1	0.2	131.9	86.7	71.8	2.4	114.9	173.1	126.8	52.4	6.3	10.0	94.9
Colorado	*87.0*	*0.4*	*64.9*	*21.7*	*0.0*	*33.1*	*24.4*	*29.5*	*2.4*	*25.9*	*58.7*	*57.4*	*12.2*	*0.0*	*0.0*	*17.4*
Utah	*203.4*	*3.5*	*30.3*	*169.4*	*0.2*	*98.8*	*62.3*	*42.3*	*0.0*	*89.0*	*114.4*	*69.4*	*40.2*	*6.3*	*10.0*	*77.5*
COUT BAX-E	292.2	17.3	84.0	190.8	0.1	102.2	102.1	87.9	2.4	125.1	164.7	145.3	44.4	0.0	7.7	94.8
Colorado	*87.0*	*0.4*	*64.9*	*21.7*	*0.0*	*33.1*	*24.4*	*29.5*	*2.4*	*25.9*	*58.7*	*57.4*	*12.2*	*0.0*	*0.0*	*17.4*
Utah	*205.2*	*16.9*	*19.1*	*169.1*	*0.1*	*69.1*	*77.7*	*58.4*	*0.0*	*99.2*	*106.0*	*87.9*	*32.2*	*0.0*	*7.7*	*77.4*

An area of particular concern in this landscape is the area where the Project begins to descend off of Baxter Pass on Links C196 and C197 into West Salt Creek across steep, highly erodible soils. At the south side of the East Tavaputs Plateau, the Book Cliffs (Class B) transition into Grand Valley that is associated with the Canyon Lands section of the Colorado Plateaus physiographic province. The Book Cliffs are a distinctive landscape characterized by a rocky, continuous cliff face that stretches from Palisade, Colorado to Price, Utah, and would be crossed by the Project on Link C197. Grand Valley, a Class C landscape, would be crossed by Links C197 and C270 in an area dominated by desert shrub vegetation west of the agricultural development in the valley. The rural landscape character is a key feature of many landscapes traversed by the Project and results from the juxtaposition of irrigated agricultural lands, natural lands, and dispersed residential areas. A total of 65.3 miles of Class B scenery and 21.7 miles of Class C scenery would be crossed by Alternative COUT BAX-B.

Viewing Locations

Residences

Dispersed rural residences are located along the White River from the intersection of Colorado State Highway 64 and Rio Blanco County Road 65 to Rangely on Links C177 and C185. A few scattered residences are located south of Rangely adjacent to Rio Blanco County Road 23 (access to Baxter Pass), including Whiskey Creek on Links C195 and C196. Another cluster of rural residences is located west of Mack along Old U.S. Highway 6 on Link C270.

Travel Routes

The Dinosaur Diamond Scenic Byway, associated with high concern viewers, would have views of Link C185 where the Project crosses the scenic road south of Rangely. The Rabbit Valley recreation destination route, associated with high concern viewers, provides access from Old U.S. Highway 6 to dispersed recreation sites in the McInnis Canyons NCA and would have views of the Project on Link C270. Link C195 would parallel Rio Blanco County Road 23, associated with moderate concern viewers, from Rangely to the Oil Spring Mountain WSA.

Recreation Areas

Three rock art sites (Crook's Brand, Carrot Men, and Fremont Ridge) are located along Rio Blanco County Road 23 approximately 10 miles south of Rangely on Link C195. Dispersed recreation opportunities are located across public lands, including both BLM- and state-administered lands. Recreation in these areas includes big game hunting, camping, fishing, geocaching, hiking, and many other recreation opportunities.

Special Designations

Views of the Project from the Demaree and Oil Spring Mountain WSAs and their associated destination routes would occur within 0.25 mile on Links C196 and C197. Canyon Pintado National Historic District is located 2 miles south of Rangely on Colorado Highway 139, and recreationists would have views of the Project on Links C185 and C195.

KOPs specific to Alternative COUT BAX-B in Colorado include:

- #147: Rangely residential
- #153: Mack residential
- #240: Colorado State Highway 64
- #241: Dinosaur Diamond Scenic Byway in Canyon Pintado National Historic District (Colorado State Highway 139) [simulation]

- #242: Whiskey Creek residential
- #243: Baxter Pass Road
- #244: Garfield County Road 201 (south of Baxter Pass) [simulation]
- #310: Crook's Brand Rock Art Site [simulation]
- #312: Rabbit Valley Dispersed Campsite (McInnis Canyons NCA)

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT BAX-B in Colorado crosses 69.6 miles of BLM-administered land with 4.4 miles in VRM Class II, 33.7 miles in VRM Class III, and 31.5 miles in VRM Class IV in the BLM White River and Grand Junction Field Offices. The VRM Class II lands associated with this alternative route are located adjacent to Baxter Pass. Landscapes associated with VRM Class III include lands adjacent to Rangely, Oil Springs Mountain, and Garfield County Road 201.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT BAX-B in Colorado crosses 63.7 miles of Class B and 23.3 miles of Class C landscapes in the White River and Grand Junction Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class B SQRUs
- Baxter Pass[1]
- Big Horse Draw[1]
- Bitter Creek
- Book Cliffs[1]
- Canyon Pintado[1]
- Coal Ridge[1]
- Coal Rim [1]
- Demaree WSA
- Douglas Pass[1]
- Grand Junction Valley
- Oil Springs WSA
- Park Mountain[1]
- Rabbit Mountain
- Rat Hole Ridge[1]
- Skull Creek
- Spring Creek[1]
- White River West[1]

Class C SQRUs
- Coal Oil Basin
- M.F. Mountain[1]
- West Salt Creek[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-B in Colorado crosses 18.6 miles of high sensitivity, 38.8 miles of moderate sensitivity, and 29.6 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs	Moderate SLRUs	Low SLRUs
■ Baxter Pass	■ Baxter Pass	■ Coal Oil Basin
■ Book Cliffs	■ Coal Oil Rim	■ Rabbit Mountain
■ Canyon Pintado	■ Greasewood	■ West Salt Creek
■ Oil Spring Mountain	■ Park Mountain	
	■ White River West	

Distance Zones

Alternative COUT BAX-B in Colorado crosses 53.8 miles in the foreground-middleground distance zone, 24.0 miles in the background distance zone, and 9.2 miles in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT BAX-B in Colorado crosses 12.4 miles of VRI Class II, 19.2 miles of VRI Class III, and 55.4 miles of VRI Class IV in the White River and Grand Junction Field Offices. The areas of VRI Class II are associated with Canyon Pintado, Baxter Pass, and the Book Cliffs.

Environmental Consequences (Colorado)

Scenery

Alternative COUT BAX-B in Colorado would result in modifications to all landscapes crossed based on the introduction of transmission line structures (including tower pads), construction and maintenance of access roads, and right-of-way vegetation clearing. These modifications would contrast with existing landscape characteristics common to the region. Particularly in areas that exhibit a rural character, the Project would introduce formal hard edge geometry into a rolling landscape. In this regard, moderate to low impacts are anticipated except for an isolated area of high impacts. Generally, moderate impacts would occur in the more distinctive Class B landscapes where access and tower pads would be constructed in steep terrain, requiring additional earthwork that would produce stronger visual contrast.

High impacts would occur where the Project descends off of Baxter Pass through steep terrain in the Tavaputs Plateau landscape. The high impacts are a result of the Project crossing a largely intact landscape with limited cultural modifications as well as highly erodible soils. To reduce contrast produced by the Project in this landscape setting, selective mitigation measures would be applied, including minimizing ground disturbance associated with the construction of access roads, blending road cuts to reduce contrast from exposed soils, and limiting vegetation clearing in the right-of-way to the extent practicable. Moderate impacts are anticipated where the Project crosses the Book Cliffs landscape in a narrow canyon that avoids the steeper terrain typically associated with this landscape. To reduce contrast, selective mitigation measures would be applied, including minimizing ground disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way. Low impacts would occur as the Project traverses the Grand Valley where the landscape has transitioned from the distinctive steeper and rugged landscapes into the more common, low dissected hills and desert flats of the valley where cultural modifications are more prominent.

Viewing Locations

Residences

High impacts would occur on views from dispersed residences along the White River where the Project would be located within 0.5 mile of a residence near the crossing of the river in mostly level terrain. Since the Project does not parallel any existing transmission lines and views from the residence would be unobstructed, selective mitigation measures would not be effective at reducing the level of contrast and

land impacts would remain at a high level. Views from other dispersed residences along the White River would have a moderate impact because an existing lower voltage transmission line would be located between these residences and the Project. The Project would traverse steep slopes primarily vegetated with pinyon-juniper. To decrease the level of contrast produced by the Project, selective mitigation measures would be applied, including reducing ground disturbance from the construction of access roads on steep terrain, limiting vegetation clearing in the right-of-way, and minimizing the construction of new access roads to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #147 in Appendix N.

High impacts are anticipated on views from dispersed residences west of Mack, where residences are located within 0.5 mile of the Project. Due to the proximity of the Project to these residences in a level, sagebrush-dominated landscape, selective mitigation measures would not be effective at reducing contrast on these views and impacts would remain at a high level. For additional analysis, refer to the contrast rating worksheet for KOP #155 in Appendix N.

A residence located adjacent to Whiskey Creek would have a high impact on views where the Project crosses steep terrain vegetated with pinyon-juniper within 0.5 mile of the residence. Selective mitigation measures would be applied to reduce contrast produced by the Project, including limiting the construction of new access roads to the extent practicable, reducing ground disturbance associated with the construction of access roads on steep slopes, and minimizing vegetation clearing in the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #242 in Appendix N.

Travel Routes

High impacts are anticipated on views from the Dinosaur Diamond Scenic Byway, south of Rangely, where the Project crosses the scenic road through steep terrain primarily vegetated with pinyon-juniper. To decrease the level of contrast produced by the Project, selective mitigation measures would be applied and include limiting the construction of access roads across the scenic byway, reducing the ground disturbance associated with access road construction, minimizing vegetation clearing in the right-of-way, and maximizing the span between transmission towers at the road crossing to reduce the dominance of structures in the viewshed. To further mitigate visual impacts on the Dinosaur Diamond Scenic Byway, the Project could be located closer to the existing lower voltage transmission line in a valley between two ridges, thereby mostly screening views of the Project. During final engineering of the selected route, additional site-specific mitigation would be evaluated. For additional analysis, refer to the contrast rating worksheet for KOP #241 and the associated visual simulation in Appendix N.

Impacts on views from a destination route to access recreation opportunities in Rabbit Valley are anticipated to be at a high level where motorists would view the Project from within 0.5 mile. Due to the limited amount of cultural modifications present in this landscape and the mostly unobstructed views of the Project, selective mitigation measures would not be effective at reducing the level of contrast in these views and impacts would remain at a high level. For additional analysis, refer to the contrast rating worksheet for KOP #312 in Appendix N.

The Project would parallel Rio Blanco County Road 23, generally causing a moderate level of impact on views except where the Project crosses the road multiple times in areas vegetated with pinyon-juniper. In these areas, the Project would dominate views from the county road and vegetation clearing would produce distinct geometric forms. Selective mitigation to reduce contrast produced by the Project would include minimizing ground disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #244 and the associated visual simulation in Appendix N.

Recreation Areas

High impacts would occur on views from the Crook's Brand and Carrot Men rock art sites, adjacent to Rio Blanco County Road 23, where the Project would be located within 0.5 mile of these sites in an area influenced by oil and gas development. The Project would traverse rolling terrain vegetated with pinyon-juniper. To reduce visual contrast on views from these rock art sites, selective mitigation measures would limit disturbance associated with the construction of access roads and minimize vegetation clearing in the right-of-way to the extent practicable. The third rock art site, Fremont Ridge, would have low visual impacts as views of the Project would occur more than 1 mile away and would be partially screened by topography. For additional analysis, refer to the contrast rating worksheet for KOP #310 and the associated visual simulation in Appendix N.

Dispersed recreation occurs throughout the public-administered lands adjacent to the Project. The level of impact on these dispersed recreationists would be dependent on the level of contrast produced by the Project when compared to existing conditions, as well as the distance from which the Project would be viewed. The highest level of impacts would occur where the dispersed recreationist is located within 0.5 mile of the Project in a landscape with few cultural modifications, and the lowest level of impacts would occur on views beyond the 6-mile-wide study corridor where the Project is colocated with existing transmission lines.

Special Designations

High impacts would occur on views from the Demaree and Oil Spring Mountain WSAs and associated destination routes where recreationists would view the Project within 0.5 mile. The Project would traverse rolling to steeply sloping terrain in landscapes primarily vegetated with pinyon-juniper. Selective mitigation measures would be used to reduce the level of contrast, including minimizing ground disturbance associated with the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. To further mitigate contrast on views from the Demaree WSA, the Project could be relocated to cross the nearly flat canyon bottom instead of traversing steep terrain on the canyon walls. During final engineering of the selected route, additional site-specific mitigation would be evaluated.

High impacts are anticipated on views from the northern portion of the Canyon Pintado National Historic District where views of the Project traversing steep, pinyon-juniper vegetated slopes would occur within 0.5 mile of the historic district. These impacts are similar to the impacts associated with the Dinosaur Diamond Scenic Byway because the byway crosses through the historic district in this area. To reduce the level of contrast on views from this area, selective mitigation measures would include limiting disturbance associated with construction access roads and minimizing vegetation clearing in the right-of-way to the extent practicable.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 69.6 miles of BLM-administered land crossed by Alternative COUT BAX-B in the BLM White River and Grand Junction Field Offices, 12.2 miles would not be in compliance with VRM Class III objectives, including:

- Dinosaur Diamond Scenic Byway in Canyon Pintado National Historic District (White River Field Office) – Noncompliance with VRM Class III objectives would occur where the Project crosses the scenic road in a largely intact natural landscape setting. Views from the road would be dominated by the Project, including skylined transmission line structures and earthwork associated with access road and tower pad construction for 1 mile (approximately 1 minute at 65

mph). Views from the adjacent historic district may be longer in duration than views from the highway. For more information refer to Contrast Rating Worksheet #241.

- Baxter Pass Road (access to Oil Spring Mountain WSA) (White River Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project paralleling the road in an intact natural landscape setting for 5 miles (approximately 9 minutes at 35 mph). Views from the road would be dominated by the Project, including the introduction of transmission line structures, earthwork associated with access road and tower pad construction, and right-of-way vegetation clearing. For more information refer to Contrast Rating Worksheet #244.
- Whiskey Creek residence (White River Field Office) – Noncompliance with VRM Class III objectives would occur where the Project would be viewed traversing steep terrain from a dispersed residence in a natural landscape setting. The transmission line structures and conductors would be viewed in a skylined condition from an inferior viewer position. For more information refer to Contrast Rating Worksheet #242.
- Garfield County Road 201 (Grand Junction Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project paralleling the road in a largely intact natural landscape setting for 12 miles (approximately 20 minutes at 35 mph). Views from the road would be dominated by the Project, including skylined transmission line structures and earthwork associated with access road and tower pad construction in steep terrain. For more information refer to Contrast Rating Worksheet #244.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT BAX-B in Colorado would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-251). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

TABLE 3-251
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) (COLORADO)

	COUT BAX-B	COUT BAX-C	COUT BAX-E
Class A			
Total Area (acres)	0	0	0
Area Influenced by the Project (acres)	0	0	0
Percentage influenced by the Project	0.0	0.0	0.0
Class B			
Total Area (acres)	957,475	957,475	957,475
Area Influenced by the Project (acres)	259,352	259,352	259,352
Percentage influenced by the Project	27.1	27.1	27.1
Class C			
Total Area (acres)	725,926	725,926	725,926
Area Influenced by the Project (acres)	77,553	77,553	77,553
Percentage influenced by the Project	10.7	10.7	10.7

Scenery associated with this alternative route consists of low-lying/rolling hills and ridges, high plateaus with linear drainages, riparian/river corridors, moderate-elevation mountains, rocky cliff faces, and desert valleys. Cultural modifications are typical of rural/agricultural development and concentrated along river valleys with some oil and gas development and pipelines occurring intermittently throughout the area. The Coal Ridge and Spring Creek SQRUs (Class B) are in an area with limited cultural modifications, adjacent to the White River, and would be influenced by the Project as it crosses the western portions of these SQRUs. Big Horse Draw SQRU (Class B) would be influenced by this alternative route as it bisects this unit. Cultural modifications (partially included on scenic quality rating worksheet) such as oil and gas development and pipelines occur intermittently and adjacent to the Project through the varying terrain. The Park Mountain SQRU (Class B) occurs in a remote area with limited influence from cultural modifications; however, oil and gas development occurs sporadically along its northern boundary (included on the scenic quality rating worksheet). This alternative route would bisect this unit adjacent to a linear drainage in varying terrain. The Rat Hole Ridge SQRU (Class B) is also a remote SQRU with limited cultural modifications and the Project would traverse the northeastern edge of this relatively small SQRU. The Baxter Pass SQRU (Class B) is a rugged area with multiple linear drainages and steep terrain, including few cultural modifications such as pipelines (included on the scenic quality rating worksheet), which occur adjacent to the Project.

Affected Environment (Utah)

Scenery

Alternative COUT BAX-B in Utah crosses scenery typical of the Colorado Plateaus (Canyon Lands and High Plateaus of Utah sections), Middle Rocky Mountains, and Basin and Range physiographic provinces. From the Utah/Colorado border to the crossing of the Green River south of the community of Green River, the Project crosses Class C scenery characterized by nearly flat plains dominated by desert shrub vegetation between the Book Cliffs and areas associated with Arches National Park. West of the Green River crossing, the Project enters the northern portion of the San Rafael Swell, which would be crossed by the Project in an area known as Buckhorn Flat located at the base of Cedar Mountain through mostly Class C scenery. The Project ascends the Wasatch Plateau west of Huntington into the Manti-La Sal National Forest.

The Wasatch Plateau (Class B scenery) is characterized by mountainous subalpine forests with high elevation parks containing groves of aspen and would be crossed by the Project for approximately 25 miles. In the Wasatch Plateau, the western ridgeline was delineated as the Wasatch Plateau Alpine landscape unit (Class A), due to the exposed rocky slopes not common in other portions of the Wasatch Plateau. The Project crosses this landscape on Link U630 parallel to an existing transmission line through steeply sloping terrain vegetated with dense conifer stands. From Mount Pleasant to Nephi, the Project crosses low, rolling hills with scattered pinyon-juniper vegetation until the Project enters Salt Creek Canyon (Class B), north of Fountain Green and adjacent to several transmission lines. From Nephi to the Clover Substation, the Project crosses sagebrush-dominated basin landscapes (Class C) in Juab Valley along Link U650. As described for this alternative route, a rural landscape character is a key feature of many of the landscapes crossed. Alternative COUT BAX-B crosses 9.0 miles of Class A scenery, 41.1 miles of Class B scenery, 142.6 miles of Class C scenery, and 0.2 mile of developed land.

Viewing Locations

Residences

The city of Mount Pleasant, located approximately 2 miles south of Link U630, contains a large concentration of high concern residential viewing locations. Link U486 would be located within 0.5 mile of the community of Thompson Springs at the base of the Book Cliffs. Dispersed rural residences are

concentrated in four areas along this alternative route: (1) Castle Valley, (2) summer homes on the Wasatch Plateau, (3) Sanpete Valley, and (4) Juab Valley.

Travel Routes

The Dinosaur Diamond Scenic Byway shares its alignment with I-70 adjacent to Links U486, U487, and U490 and would generally have views of the Project ranging from 0.3 mile to 1.6 miles away. U.S. Highway 6, from its intersection with I-70 west of Green River to the U.S. Highway 191 intersection north of Price, is also part of the Dinosaur Diamond Scenic Byway. Views of the Project from this portion of the scenic highway would be more than 1.5 miles away from the Project on Links U487 and U730. The Energy Loop Scenic Byway would not be crossed by this alternative route, but motorists would have views of the Project from more than 2 miles away on Links U628 and U629. The Skyline Drive Scenic Backway, associated with high concern viewers, located along the western edge of the Wasatch Plateau, would be crossed by Link U630. The Wedge Overlook and Buckhorn Draw scenic byways, both associated with high concern viewers, provide access to recreation areas in the San Rafael Swell and would view the Project along Links U728, U729, U731, and U732. A portion of I-70 (associated with moderate concern viewers) between Crescent Junction and Cisco is not part of the Dinosaur Diamond Scenic Byway and would have views of the Project from approximately 0.5 and 1.5 miles away on Links U486 and U490. The Floy Canyon WSA and Sego Canyon destination routes (both associated with high concern viewers) provide access to WSAs located on the Tavaputs Plateau north of Crescent Junction and would be crossed by Links U486 and U487. The Horseshoe Canyon destination route (associated with high concern viewers) provides access from Green River to the Horseshoe Canyon portion of Canyonlands National Park and would be crossed by Link U487. Link U730 would parallel a destination route associated with high concern viewers that provides access to the Mexican Mountain WSA, Cottonwood Wash Trailhead, Horsethief Trailhead, and Smith Cabin ACEC. A network of roads not designated as part of a scenic backway provides access to recreational opportunities in the San Rafael Swell and would have views of the Project on Links U728, U729, U730, and U732.

Recreation Areas

The Old Spanish NHT, both the NPS alignment as well as the trail traces identified through a BLM historic trails inventory, would have views of the Project on Links U486, U487, U490, U728, U729, U730, and U732. The Arapeen Trail Network, a system of OHV routes located on the Wasatch Plateau, would be crossed by Links U629 and U630. The Green River would be crossed by Link U487, 0.4 mile south of Crystal Geyser, located 4 miles south of the community of Green River. Potters Pond and Indian Creek Campground, both associated with high concern viewers, would have views of the Project on Link U630 from less than 0.5 mile away in the Manti-La Sal National Forest. Dispersed recreation occurs throughout the study area on publically administered lands (BLM, USFS, and state) and includes big game hunting, camping, hiking, geocaching, and other activities. Two areas of increased dispersed recreation occur along this Alternative COUT BAX-B in Utah: (1) San Rafael Swell and associated San Rafael Canyon ACEC (Links U730, U729, U728, and U732) and (2) Wasatch Plateau (Links U629 and U630).

KOPs specific to Alternative COUT BAX-B in Utah include:

- #32: Cedar Mountain Overlook (San Rafael Swell) [simulation]
- #131: Mount Nebo Loop Scenic Byway
- #145: Thompson Springs residential
- #152: I-70 Harley Dome Rest Area (Dinosaur Diamond Scenic Byway) [simulation]
- #193: I-70 Crescent Junction Rest Stop (Dinosaur Diamond Scenic Byway) [simulation]
- #194: Potters Ponds
- #195: Indian Creek Campground [simulation]

- #201: Crystal Geyser
- #204: Nephi residential
- #205: Fountain Green residential
- #206: Dispersed residences north of Mount Pleasant
- #207: Dispersed residences northeast of Castle Dale
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #217: Skyline Drive Scenic Backway [simulation]
- #218: Wedge Overlook Scenic Backway
- #245: Old U.S. Highway 6 (west of Mack)
- #246: I-70 (east of Thompson Springs)
- #255: Mexican Mountain WSA
- #262: Mount Pleasant dispersed residences [simulation]
- #263: Mount Pleasant residential
- #264: Big Hollow WMA Destination Route (Fountain Green)
- #265: I-15 (Nephi) [simulation]
- #279: Old Spanish NHT (near Thompson Springs Utah) [simulation]
- #282: I-70 Thompson Welcome Center (Dinosaur Diamond Scenic Byway) [simulation]
- #301: Arches National Park boundary (Salt Valley)
- #305: Wedge Overlook Scenic Backway
- #306: Upper Colorado River Scenic Byway [simulation]
- #308: Millers Flat Road
- #309: Bear Creek Campground [simulation]
- #313: I-70 crossing
- #314: Little Grand Canyon Overlook
- #319: Green River [simulation]
- #320: Junction of Road to Buckhorn Wash [simulation]
- #323: Old Railroad Grade (adjacent to Mexican Mountain WSA) [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT BAX-B in Utah crosses 103.0 miles of BLM-administered land with 0.7 mile in VRM Class II, 100.1 miles in VRM Class III, and 2.2 miles in VRM Class IV in the Moab, Price, Richfield, and Fillmore Field Offices. The VRM Class II lands are associated with the east side of the Green River; however, the BLM Moab Field Office manages this land as VRM Class III for transmission lines according to their 2008 RMP. The VRM Class III lands associated with this alternative route are located adjacent to I-70, the Old Spanish NHT, Buckhorn Wash, Fountain Green, Utah State Route 132, and Mona.

U.S. Forest Service Visual Quality Objectives

Alternative COUT BAX-B in Utah crosses 16.3 miles of USFS-administered lands in the Manti-La Sal National Forest of which 11.2 miles cross a partial retention VQO and 5.1 miles of a modification VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT BAX-B in Utah crosses 0.2 mile of Class A, 58.1 miles of Class B, and 113.6 miles of Class C landscapes in the BLM Moab, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Horseshoe Canyon[1]
- Roan Cliffs/Book Cliffs West

Class B SQRUs
- Achee Uplands
- Black Hills[1]
- Book Cliffs Bench
- Buckhorn
- Chimney Rock Flats[1]
- Cleveland Lloyd Dinosaur Quarry
- Coal Draw/Agate
- Dog Valley[1]
- Education Creek
- Green River Valley[1]
- Last Spring[1]
- Manti-La Sal[1]
- Park Canyon
- Prickly Pear Flat[1]
- San Pitch Mountains[1]
- San Rafael Reef
- Sanpete Valley[1]
- Sugarloaf
- The Western Bench[1]
- Upper Bitter Creek

Class C SQRUs
- Apple Spring[1]
- Buckhorn Flat [1]
- Cedar Mountain[1]
- Cisco Desert[1]
- Clark Valley and the Price River Valley[1]
- Hadden Hills/Oil Well Dome[1]
- U.S. Highway 6/Gunnison Valley[1]
- Uranium Hills[1]
- White Sands

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-B in Utah crosses 35.5 miles of high sensitivity, 102.7 miles of moderate sensitivity, and 53.3 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Buckhorn/Wedge
- I-70 ACEC
- Labyrinth
- Manti-La Sal
- Sids Mountain Mexican Mountain

Moderate SLRUs
- Humbug Flats
- I-15
- I-70
- Molden Reef and the Red Ledges
- Price, Helper, Wellington
- Upper Green River
- White Wash

Low SLRUs
- Cedar/CLDQ
- Cisco Desert
- San Pitch Mountains
- San Rafael Desert
- Sanpete Valley

Distance Zones

Alternative COUT BAX-B in Utah crosses 160.5 miles in the foreground-middleground distance zone, 31.7 miles in the background distance zone, and 0.7 mile in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT BAX-B crosses 13.4 miles of VRI Class II, 36.8 miles of VRI Class III, and 118.7 miles of VRI Class IV in the BLM Moab, Price, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with the Green River, San Rafael Swell, and the east side of the Wasatch Plateau adjacent to Huntington.

Environmental Consequences (Utah)

Scenery

Effects of the Project on the rural character of landscapes traversed by the Utah portion of Alternative COUT BAX-B would be similar to those discussed for the Colorado portion.

Across this alternative route, the majority of impacts are anticipated to be moderate to low with an isolated occurrence of high impacts. Generally, moderate impacts would occur in the more distinctive Class A and B landscapes where earthwork associated with access roads and tower pads, as well as vegetation clearing in the right-of-way, would contrast with the existing landscape character. High impacts on the Wasatch Plateau Alpine landscape would occur where contrast produced by the construction of access roads and tower pads in steep terrain, geometric forms associated with right-of-way vegetation clearing, and the presence of additional transmission line structures would modify the existing landscape character. Selective mitigation measures would be applied to decrease contrast produced by the Project in this landscape, including reducing the construction of new access roads to the extent practicable, minimizing ground disturbance from access road construction, and limiting vegetation clearing in the right-of-way.

Viewing Locations

Residences

Low impacts are anticipated on views from residences located in Mount Pleasant because (1) the Project would be located more than 2 miles away and (2) there is an existing transmission line between the residential viewers and the Project. As such, visual contrast produced by the Project would be weak. For additional analysis, refer to the contrast rating worksheet for KOP #263 in Appendix N.

Dispersed residences located north of Mount Pleasant in Sanpete Valley within 0.5 mile of the Project would have a high impact on their views. Many of these residences are located between the existing transmission line and the Project while other residences located north of the Project would have views dominated by the Project. Selective mitigation measures would not be effective at reducing contrast since the Project is located in a level agricultural valley with widespread dispersed residences that would have unobstructed views of the Project. For additional analysis, refer to the contrast rating worksheet for KOP #262 and the associated visual simulation in Appendix N.

High impacts would occur on unobstructed views from residences in Thompson Springs where the Project traverses rolling terrain within 0.5 mile of these residences. Because the Project is located in a narrow gap between Thompson Springs and the Book Cliffs, selective mitigation measures would not be effective at reducing visual contrast because the Project cannot be effectively relocated. For additional analysis, refer to the contrast rating worksheet for KOP #145 in Appendix N.

Moderate impacts would occur on views from dispersed residences north of Castle Dale in Castle Valley where residences would view the Project from less than 1 mile, in context with two existing transmission lines. To most effectively mitigate visual effects on these residences, the Project would need to be located closer to the existing transmission lines in an area of widely dispersed residences; however, this would only shift impacts on another cluster of residences. For additional analysis, refer to the contrast rating worksheet for KOP #207 in Appendix N.

High impacts are anticipated on views from a group of summer homes on the Wasatch Plateau where the Project would traverse steep, densely vegetated slopes within 0.5 mile of these residences. The Project would parallel an existing transmission line but would be located closer to the summer homes than to the existing line. Selective mitigation measures to reduce visual contrast would include minimizing ground

disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable to avoid producing geometric vegetation forms inconsistent with the existing landscape character.

Views from residences in Juab Valley, including the community of Nephi, would have mostly moderate impacts; in areas where the Project traverses steep slopes vegetated with dense pinyon-juniper vegetation, impacts would high. Multiple transmission lines are located approximately 0.5 mile to the north of the Project, but views from these residences would be dominated by the Project, which would be located closer to these viewers. Selective mitigation measures to reduce visual contrast include reducing ground disturbance associated with the construction of access roads and minimizing vegetation clearing in the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #204 in Appendix N.

Travel Routes

High impacts are anticipated on views from the Dinosaur Diamond Scenic Byway where the Project would parallel I-70 within 0.5 mile, thereby producing long duration views of the Project. To mitigate impacts on a distinctive feature of the desert landscape viewed from I-70, vegetation clearing would be minimized in the riparian corridors to maintain these continuous bands of green vegetation in a landscape dominated by muted tan desert shrub vegetation. To further mitigate impacts on views from the Dinosaur Diamond Scenic Byway, the Project could be located farther from the viewer, which would move the Project outside of the designated utility corridor. During final engineering of the selected route, additional site-specific mitigation would be evaluated. For additional analysis, refer to the contrast rating worksheet for KOP #246 in Appendix N.

Moderate impacts would occur on views from the portion of I-70 not associated with the Dinosaur Diamond Scenic Byway, where the Project would parallel the highway approximately 0.5 mile away and rolling terrain would intermittently screen views of the Project.

Low impacts are anticipated on views from the Energy Loop Scenic Byway west of Huntington because the Project would be viewed from 2 miles away in context of several existing transmission lines and the Huntington Power Plant that have modified the existing landscape character. Views from the Skyline Drive Scenic Backway would have a high level of impact where the Project traverses steep slopes primarily vegetated with sub-alpine vegetation communities. To decrease visual contrast produced by the Project, selective mitigation measures would be applied, including minimizing the construction of new access roads and limiting ground disturbance associated with these access roads, as well as reducing right-of-way vegetation clearing to the extent practicable. Due to the separation between the existing transmission line and the Project through steep terrain, in most locations recreationists traveling along this scenic road would view only one of these transmission lines at a time. As such, to most effectively reduce impacts on views from the Skyline Drive Scenic Backway, the Project should be located closer to the existing transmission line. For additional analysis, refer to the contrast rating worksheet for KOP #217 and the associated visual simulation in Appendix N.

High impacts would occur on views from the Wedge Overlook and Buckhorn Draw scenic backways, where they share the same alignment east of Castle Dale. The Project crosses the scenic roads multiple times and parallel the road within 0.5 mile for approximately 3 miles in a landscape characterized by a series of plateaus surrounded by a flat desert plain. Selective mitigation measures would be applied to reduce contrast, including limiting ground disturbance associated with access road construction and minimizing vegetation clearing in the right-of-way where the Project crosses through stands of pinyon-juniper. To further mitigate impacts, the Project could be located farther away from these scenic roads, moving the Project out of the designated utility corridor. During final engineering of the selected route, additional site-specific mitigation would be evaluated. For additional analysis, refer to the contrast rating worksheet for KOP #320 and the associated visual simulation in Appendix N.

High impacts would occur at the crossing of the Floy Canyon WSA, Sego Canyon, and Horseshoe Canyon destination routes where the Project traverses level to rolling terrain. To reduce contrast on views from these recreation routes, selective mitigation measures would be applied to maximize the span between transmission line structures at the road crossing to reduce their dominance in these viewsheds.

Views from a destination route providing access to recreation along the east side of the Mexican Mountain WSA (also known as the Old Railroad Grade) and other San Rafael Swell recreation destination routes would be located less than 0.5 mile from the Project, resulting in a high level of impact. An existing transmission line consisting of wooden H-frame structures would be paralleled by the Project. To reduce contrast, the tower design for the Project in this area would be changed to an H-frame as well. To further reduce contrast, selective mitigation measures would be applied, including limiting ground disturbance associated with the construction of access roads and moving the Project away from the steepest slopes to minimize the number of skylined structures. For additional analysis, refer to the contrast rating worksheet for KOP #323 and the associated visual simulation in Appendix N.

Recreation Areas

High impacts would occur where the Project would be located within 0.5 mile of the Old Spanish NHT, particularly where the landscape setting of the trail has been retained at the base of the Book Cliffs and through Buckhorn Flat between Cedar Mountain and the San Rafael Swell. To reduce contrast on views from the historic trail corridor, selective mitigation measures would be applied, including limiting the construction of access roads across historic trail trace segments, minimizing ground disturbance associated with access road construction, and maximizing the span length at trail crossings to reduce dominance of these structures in the trail's viewshed. For additional analysis, refer to the contrast rating worksheet for KOP #279 and the associated visual simulation in Appendix N. For further analysis of impacts on the Old Spanish NHT, refer to Section 3.2.19.

High impacts are anticipated on views from developed recreation sites on the Wasatch Plateau, including the Arapeen Trail Network, Potters Pond, and Indian Creek Campground where the Project would be located within 0.5 mile of these viewing locations traversing steep slopes in dense sub-alpine vegetation. The Project would parallel an existing transmission line with wooden H-frame structures that have modified the adjacent landscape character. The taller transmission structures proposed for the Project would be visible from farther away than the existing transmission line because they would be skylined over the trees in the flat, park-like landscape typical of the Wasatch Plateau. To reduce contrast produced by the taller structures, the application of selective mitigation measures would modify the structure type in this area to use the shorter, H-frame alternative structure type. In addition to reducing contrast associated with the transmission structures, selective mitigation measures would include limiting ground disturbance from the construction of access roads and minimizing vegetation clearing in the right-of-way to the extent practicable, to avoid producing geometric vegetation forms inconsistent with the existing landscape character. For additional analysis, refer to the contrast rating worksheet for KOP #195 and the associated visual simulation in Appendix N.

Moderate impacts would occur on views from the Green River where the Project crosses the river near Crystal Geyser adjacent to an existing transmission line. The separation between the existing transmission line and the Project would be reduced in this area, resulting in a lower level of impacts. By maximizing the span length between the transmission structures at the crossing of the Green River, the dominance of the Project on views from recreationists floating south on the river would be further reduced. For additional analysis, refer to the contrast rating worksheet for KOP #319 and the associated visual simulation in Appendix N.

As described in the Colorado portion of this alternative route, impacts on views from dispersed recreation vary, based on the level of contrast produced by the Project as compared to the existing landscape features

as well as the distance from which the Project would be viewed. The Project would parallel an existing transmission line through two areas of increased dispersed recreation (San Rafael Swell and Wasatch Plateau) along this alternative route. Impacts on dispersed recreationists would be reduced through the application of selective mitigation measures on views from adjacent developed recreation sites.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 103.0 miles of BLM-administered land crossed by Alternative COUT BAX-B in the BLM Moab, Price, Richfield, and Fillmore Field Offices, 26.4 miles would not be in compliance with VRM Class III objectives, including:

- Old U.S. Highway 6 (Moab Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project as it parallels Old U.S. Highway 6, including views of skylined transmission structures for 6 miles (approximately 9 minutes at 40 mph). For more information refer to Contrast Rating Worksheet #245.
- I-70 Harley Dome Rest Area (Moab Field Office) – Noncompliance with VRM Class III objectives would occur where views of the Project would be from a superior position in a natural landscape setting. For more information refer to Contrast Rating Worksheet #152.
- I-70 (Moab Field Office) – Noncompliance with VRM Class III objectives would occur where long duration views of the Project would result from the Project closely paralleling I-70, including views of skylined transmission structures for 22 miles (approximately 18 minutes at 40 mph). For more information refer to Contrast Rating Worksheet #246.
- Wedge Overlook Scenic Backway (Price Field Office) – Noncompliance with VRM Class III objectives would occur where the Project parallels and crosses the backway in a natural landscape setting for 2 miles (approximately 3 minutes at 35 mph). Views from the road would be dominated by skylined transmission structures located adjacent to the road. For more information refer to Contrast Rating Worksheet #218.

U.S. Forest Service Visual Quality Objectives

The Project would meet the definition of a modification VQO where this objective would be crossed in the Manti-La Sal National Forest since the Project parallels an existing transmission line with similar design characteristics and, after application of selective mitigation measures, the Project would borrow from the landscape's established form, line, color, and texture. In most locations, however, the Project would not meet the definition of a partial retention VQO, except for the area adjacent to the Huntington Power Plant (Link U629, between Milepost 1.5 and 2.7) that has considerably modified the existing landscape character. In other areas, the influence of the existing transmission line would not be enough for the Project to be subordinate to the existing landscape character.

U.S. Forest Service Land and Resource Management Plan Conformance

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. For the GWR Management Unit, direction is provided for activities that meet the VQO except where habitat improvement activities occur. The Project traverses the GWR Management Unit in a partial retention VQO (Link U629 between Mileposts 1.5 and 2.1), which occurs in an area visually dominated by the Huntington Power Plant and existing transmission lines. Therefore, the Project would meet the definition of this objective and conform to the plan. Since the remaining portions of the Manti-La Sal National Forest do not require that activities meet the adopted VQO, the Project would conform to the plan in these areas. As described above, the Project

would not meet the definition of a partial retention VQO as it traverses the Manti-La Sal National Forest, but since no standard for meeting VQOs is defined in the LRMP, the Project would conform to the plan.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT BAX-B in Utah would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-252). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

TABLE 3-252
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) (UTAH)

	COUT BAX-B	COUT BAX-C	COUT BAX-E
Class A			
Total Area (acres)	464,535	464,535	678,621
Area Influenced by the Project (acres)	4,758	4,758	7,119
Percentage influenced by the Project	1.0	1.0	1.0
Class B			
Total Area (acres)	1,738,494	1,753,449	1,794,962
Area Influenced by the Project (acres)	276,189	283,851	274,213
Percentage influenced by the Project	15.9	16.2	15.3
Class C			
Total Area (acres)	1,391,591	1,391,591	1,317,463
Area Influenced by the Project (acres)	389,150	417,824	470,932
Percentage influenced by the Project	28.0	30.0	35.7

Scenery associated with this alternative route consists of flat desert plains, riparian/river corridors, rugged cliff faces and escarpments, canyons, high plateaus with steep slopes, and basin/valleys. Cultural modifications are typical of rural agricultural development and generally concentrated along river and valley corridors with some oil and gas development as well as transmission lines and energy generation occurring intermittently throughout the study area. The Roan Cliffs/Book Cliffs West SQRU (Class A) would be influenced, but not crossed, by the Project near the SQRU's southern edge where the Project would occur adjacent to I-70 and rural development. The Horseshoe Canyon SQRU (Class A) is a narrow unit associated with the Green River and would be crossed by the Project in an area where the Project would be adjacent to an existing transmission line (not included on the scenic quality rating worksheet).

Alternative COUT BAX-C

Affected Environment (Colorado)

Scenery

Alternative COUT BAX-C in Colorado crosses the same scenery as Alternative COUT BAX-B.

Viewing Locations

Viewing locations along Alternative COUT BAX-C in Colorado are the same as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

The federal agency visual management objectives of Alternative COUT BAX-C in Colorado are the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes for Alternative COUT BAX-C in Colorado are the same as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Scenery

Alternative COUT BAX-C in Colorado would have the same impacts on scenery as Alternative COUT BAX-B.

Viewing Locations

Alternative COUT BAX-C in Colorado would have the same impacts on viewing locations as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative COUT BAX-C in Colorado is the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT BAX-C in Colorado would have the same effects on BLM VRI components as Alternative COUT BAX-B (Table 3-251).

Affected Environment (Utah)

Scenery

Alternative COUT BAX-C in Utah crosses similar scenery as Alternative COUT BAX-B for 9.0 miles of Class A scenery, 42.2 miles of Class B scenery, 152.0 miles of Class C scenery, and 0.2 mile of developed land.

Viewing Locations

Viewing locations along Alternative COUT BAX-C in Utah are similar to Alternative COUT BAX-B, except that the Dinosaur Diamond Scenic Byway (U.S. Highway 6 portion), Wedge Overlook and Buckhorn Draw scenic byways, Mexican Mountain WSA destination route, San Rafael destination routes, Old Spanish NHT, and dispersed recreation in the San Rafael Swell would have views of the Project in different landscape settings. The Dinosaur Diamond Scenic Byway would be paralleled for 13 miles along Link U488 at a distance of 0.25 mile. The Wedge Overlook and Buckhorn Draw scenic byways would have views of the Project on Links U731, U732, and U733 through the San Rafael Swell. This alternative route would not parallel the Mexican Mountain WSA destination route but crosses the road on Link U733 and have views of the Project on Link U734. Link U734 would parallel a road that provides access from U.S. Highway 6 into the San Rafael Swell for 15 miles. The Old Spanish NHT, including the NPS alignment and BLM trail trace data, would have views of the Project along Links U486, U487, U490, U731, U732, U733, and U734. Dispersed recreationists in the San Rafael Swell (including the San Rafael Canyon ACEC) would view the Project on Links U732, U733, and U734.

KOPs specific to Alternative COUT BAX-C in Utah include:

- #32: Cedar Mountain Overlook (San Rafael Swell) [simulation]
- #41: Dinosaur Diamond Scenic Byway (U.S. Highway 6) [simulation]
- #131: Mount Nebo Loop Scenic Byway
- #145: Thompson Springs residential
- #152: I-70 Harley Dome Rest Area (Dinosaur Diamond Scenic Byway) [simulation]
- #193: I-70 Crescent Junction Rest Stop (Dinosaur Diamond Scenic Byway) [simulation]
- #194: Potters Ponds
- #195: Indian Creek Campground [simulation]
- #201: Crystal Geyser
- #204: Nephi residential
- #205: Fountain Green residential
- #206: Dispersed residences north of Mount Pleasant
- #207: Dispersed residences northeast of Castle Dale
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #217: Skyline Drive Scenic Backway [simulation]
- #218: Wedge Overlook Scenic Backway
- #245: Old U.S. Highway 6 (west of Mack)
- #246: I-70 (east of Thompson Springs)
- #262: Mount Pleasant dispersed residences [simulation]
- #263: Mount Pleasant residential
- #264: Big Hollow WMA Destination Route (Fountain Green)
- #265: I-15 (Nephi) [simulation]
- #279: Old Spanish NHT (near Thompson Springs Utah) [simulation]
- #282: I-70 Thompson Welcome Center (Dinosaur Diamond Scenic Byway) [simulation]
- #301: Arches National Park boundary (Salt Valley)
- #305: Wedge Overlook Scenic Backway
- #306: Upper Colorado River Scenic Byway [simulation]
- #308: Millers Flat Road
- #309: Bear Creek Campground [simulation]
- #313: I-70 crossing
- #314: Little Grand Canyon Overlook
- #319: Green River [simulation]
- #320: Junction of Road to Buckhorn Wash [simulation]
- #326: San Rafael Swell Destination Route

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT BAX-C in Utah crosses 109.6 miles of BLM-administered land with 0.7 mile in VRM Class II, 106.7 miles in VRM Class III, and 2.2 miles in VRM Class IV in the BLM Moab, Price, Richfield, and Fillmore Field Offices. The VRM Class II and Class III lands associated with this alternative route are similar to those discussed for Alternative COUT BAX-B.

U.S. Forest Service Visual Quality Objectives

Alternative COUT BAX-C in Utah cross the same USFS VQOs as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT BAX-C in Utah crosses 0.2 mile of Class A, 59.0 miles of Class B, and 123.3 miles of Class C landscapes in the Moab, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Horseshoe Canyon[1]
- Roan Cliffs/Book Cliffs West

Class B SQRUs
- Achee Uplands
- Beckwith Plateau
- Black Hills[1]
- Book Cliffs Bench
- Buckhorn[1]
- Chimney Rock Flats[1]
- Cleveland Lloyd Dinosaur Quarry
- Coal Draw/Agate
- Dog Valley[1]
- Education Creek
- Green River Valley[1]
- Last Spring[1]
- Manti-La Sal[1]
- Park Canyon
- Prickly Pear Flat
- San Pitch Mountains[1]
- Sanpete Valley[1]
- Sugarloaf[1]
- The Western Bench[1]
- Upper Bitter Creek

Class C SQRUs
- Apple Spring[1]
- Buckhorn Flat[1]
- Cedar Mountain[1]
- Cisco Desert[1]
- Clark Valley and the Price River Valley[1]
- Hadden Hills/Oil Well Dome[1]
- U.S. Highway 6/Gunnison Valley[1]
- Uranium Hills
- White Sands

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-C in Utah crosses 33.3 miles of high sensitivity, 118.9 miles of moderate sensitivity, and 49.9 miles of low sensitivity lands.

The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Buckhorn/Wedge
- I-70 ACEC
- Labyrinth
- Manti-LaSal
- Sids Mountain Mexican Mtn.

Moderate SLRUs
- Dinosaur Diamond
- Humbug Flats
- I-15
- I-70
- Molden Reef and the Red Ledges
- Price, Helper, Wellington
- Upper Green River
- White Wash

Low SLRUs
- Cedar/CLDQ
- Cisco Desert
- San Pitch Mountains
- San Rafael Desert
- Sanpete Valley

Distance Zones

Alternative COUT BAX-C in Utah crosses 171.1 miles in the foreground-middleground distance zone, 31.7 miles in the background distance zone, and 0.7 mile in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT BAX-C in Utah crosses 12.1 miles of VRI Class II, 41.4 miles in VRI Class III, and 125.9 miles in VRI Class IV in the Moab, Price, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with the Green River, San Rafael Swell, and the east side of the Wasatch Plateau adjacent to Huntington.

Environmental Consequences (Utah)

Scenery

Alternative COUT BAX-C in Utah would have similar impacts on scenery as Alternative COUT BAX-B.

Viewing Locations

Impacts on viewing locations along Alternative COUT BAX-C in Utah are similar to Alternative COUT BAX-B, except for impacts associated with the Dinosaur Diamond Scenic Byway (U.S. Highway 6), Mexican Mountain WSA destination route, San Rafael Swell destination route (Green River Cutoff Road), and Old Spanish NHT.

High impacts are anticipated on views from the U.S. Highway 6 portion of the Dinosaur Diamond Scenic Byway where long duration views of the Project would occur as the scenic road is paralleled for more than 10 miles adjacent to an existing lower voltage transmission line. Due to the relative scale of the Project when compared to the existing transmission line, the Project would dominate views; contrast would most effectively be reduced if the Project were to be located farther to the east outside of the designated utility corridor. For additional analysis, refer to the contrast rating worksheet for KOP #41 and the associated visual simulation in Appendix N.

High impacts would occur on views from the Mexican Mountain WSA destination route where the Project crosses the road approximately 0.75 mile from an existing transmission line in Buckhorn Flat. To reduce contrast produced by the Project, selective mitigation measures would be applied to maximize the span between transmission towers at the crossing of the road to minimize the dominance of the Project in the viewshed.

High impacts are anticipated on views from the Green River Cutoff Road where the Project would closely parallel the road from U.S. Highway 6 to Buckhorn Flat in the San Rafael Swell. To most effectively reduce visual contrast on these long duration views of the Project, the alternative route would need to be located farther from the road, which would reduce dominance of the Project on these views. To further reduce contrast on views from the Green River Cutoff Road, selective mitigation measures would be applied, including minimizing ground disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #326 in Appendix N.

Impacts associated with the Old Spanish NHT would be similar to Alternative COUT BAX-B along the Book Cliffs, but impacts would be lower through the San Rafael Swell since the Project would not parallel any historic trail traces or the alignment identified in the 2008 Price Field Office RMP. For further analysis of impacts on the Old Spanish NHT, refer to Section 3.2.19.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 109.6 miles of BLM-administered land crossed by Alternative COUT BAX-C in the BLM Moab, Price, Richfield, and Fillmore Field Offices, 40.2 miles would not be in compliance with VRM Class III objectives, including:

- Old U.S. Highway 6 (Moab Field Office) – Noncompliance is the same as Alternative COUT BAX-B.
- I-70 Harley Dome Rest Area (Moab Field Office) – Noncompliance is the same as Alternative COUT BAX-B.
- I-70 (Moab Field Office) – Noncompliance is the same as Alternative COUT BAX-B.
- Dinosaur Diamond Scenic Byway-U.S. Highway 6 (Price Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project as it parallels the highway in proximity for 4 miles (approximately 4 minutes at 65 mph). For more information refer to Contrast Rating Worksheet #41.
- San Rafael Swell Destination Route (Price Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project as it closely parallels the destination route in a natural landscape setting for 11 miles (approximately 19 minutes at 35 mph). Views from the road would be dominated by the Project, including the introduction of skylined transmission line structures and earthwork associated with access road and tower pad construction in steeply dissected terrain. For more information refer to Contrast Rating Worksheet #326.
- Wedge Overlook Scenic Backway (Price Field Office) – Noncompliance is the same as Alternative COUT BAX-B.

U.S. Forest Service Visual Quality Objectives

Compliance with USFS VQOs for Alternative COUT BAX-C in Utah is the same as Alternative COUT BAX-B.

U.S. Forest Service Land and Resource Management Plan Conformance

Conformance with the Manti-La Sal National Forest LRMP for Alternative COUT BAX-C in Utah is the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT BAX-C would have the similar effects on BLM SQRUs as Alternative COUT BAX-B (Table 3-252).

Alternative COUT BAX-E

Affected Environment (Colorado)

Scenery

Alternative COUT BAX-E in Colorado crosses the same scenery as Alternative COUT BAX-B.

Viewing Locations

Viewing locations along Alternative COUT BAX-E in Colorado are the same as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

The federal agency visual management objectives for Alternative COUT BAX-E in Colorado are the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes for Alternative COUT BAX-E in Colorado are the same as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Scenery

Alternative COUT BAX-E in Colorado would have the same impacts on scenery as Alternative COUT BAX-B.

Viewing Locations

Alternative COUT BAX-E in Colorado would have the same impacts on viewing locations as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative COUT BAX-E in Colorado is the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT BAX-E in Colorado would have the same effects on BLM SQRUs as Alternative COUT BAX-B (Table 3-251).

Affected Environment (Utah)

Scenery

Alternative COUT BAX-E in Utah crosses the same scenery as Alternative COUT BAX-B, except for the area between Green River and Fountain Green. West of the Green River crossing, the Project would parallel U.S. Highway 6 between the Book Cliffs and the San Rafael Swell through a landscape that is mostly level until the crossing of the Price River at Woodside. North of the Price River, the landscape transitions into a series of dissected hills dominated by shrubland vegetation, until the Project crosses into Castle Valley approximately 15 miles southeast of Wellington. West of Helper, the Project would ascend the Wasatch Plateau into the Manti-La Sal National Forest. The Wasatch Plateau (Class B), characterized by mountainous subalpine forests, would be crossed by the Project for approximately 20 miles on Link U600. On the Wasatch Plateau, there are high altitude parks (Class A) characterized by dense groves of aspen trees surrounded by sagebrush-dominated plains containing several small lakes. Alternative COUT BAX-E crosses 2.4 miles of Class A scenery, 41.1 miles of Class B scenery, 161.6 miles of Class C scenery, and 0.1 mile of developed land.

Viewing Locations

Viewing locations along Alternative COUT BAX-E in Utah are the same as Alternative COUT BAX-B from the Colorado/Utah border until the crossing of I-70 west of Green River, including residences in Thompson Springs, the Dinosaur Diamond Scenic Byway (I-70 portion), Floy Canyon WSA destination route, Sego Canyon destination route, Horseshoe Canyon destination route, and the Green River.

Residences

High concern residential viewers in the communities of Clear Creek (Link U600) and Fairview (Links U600 and U636) would have views of the Project. Dispersed residences are primarily located in four areas along Alternative COUT BAX-E in Utah: (1) Castle Valley, (2) summer homes on the Wasatch Plateau, (3) Sanpete Valley, and (4) Juab Valley.

Travel Routes

In addition to paralleling the I-70 portion of the Dinosaur Diamond Scenic Byway, the U.S. Highway 6 portion of the byway would be paralleled by Links U488 and U489 for 34 miles. The Energy Loop Scenic Byway would be crossed by the Project five times (Link U600) as the scenic route traverses the Wasatch Plateau from Huntington to Fairview. The northern portion of the Skyline Drive Scenic Backway starts at the intersection of Utah State Routes 31 and 264 and would have views of the Project on Link U600 from 0.3 mile away. Views toward the Project from the network of destination routes in the San Rafael Swell would be mostly screened by topography, except the destination route that provides access from U.S. Highway 6 that would have views of the Project on Links U488 and U489.

Recreation Areas

The Old Spanish NHT, including the NPS alignment and BLM trail trace data, would have views of the Project along Links U486, U487, U488, and U490. The majority of the dispersed recreation occurring in the San Rafael Swell would have screened views of the Project along Links U488 and U489. Dispersed recreationists on the Wasatch Plateau, mostly in the Manti-La Sal National Forest, would have views of the Project on Link U600.

KOPs specific to Alternative COUT BAX-E in Utah include:

- #28: Fairview Lakes Overlook-The Energy Loop Scenic Byway
- #30: Electric Lake
- #41: Dinosaur Diamond Scenic Byway (U.S. Highway 6) [simulation]
- #131: Mount Nebo Loop Scenic Byway
- #145: Thompson Springs residential
- #152: I-70 Harley Dome Rest Area (Dinosaur Diamond Scenic Byway) [simulation]
- #193: I-70 Crescent Junction Rest Stop (Dinosaur Diamond Scenic Byway) [simulation]
- #196: Fairview Lakes residential
- #201: Crystal Geyser
- #204: Nephi residential
- #212: Fairview residential
- #213: Clear Creek residences
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #245: Old U.S. Highway 6 (west of Mack)
- #246: I-70 (east of Thompson Springs)
- #259: Energy Loop Scenic Byway (Utah State Route 96)

- #260: Energy Loop Scenic Byway (Utah State Route 31) [simulation]
- #261: Fairview residential [simulation]
- #265: I-15 (Nephi) [simulation]
- #279: Old Spanish NHT (near Thompson Springs, Utah) [simulation]
- #282: I-70 Thompson Welcome Center (Dinosaur Diamond Scenic Byway) [simulation]
- #283: Energy Loop Scenic Byway (Utah State Route 31)
- #284: Energy Loop Scenic Byway (Utah State Route 264) [simulation]
- #301: Arches National Park boundary (Salt Valley)
- #306: Upper Colorado River Scenic Byway [simulation]
- #307: Energy Loop Scenic Byway (Utah State Route 264)
- #313: I-70 crossing
- #319: Green River [simulation]
- #322: U.S. Highway 6 Rest Area (Dinosaur Diamond Scenic Byway) [simulation]
- #324: Dinosaur Diamond Scenic Byway (U.S. Highway 6 north of Woodside) [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT BAX-E in Utah crosses 120.1 miles of BLM-administered land with 0.7 mile in VRM Class II, 96.4 miles in VRM Class III, and 23.0 miles in VRM Class IV in the BLM Moab, Price, Richfield, and Fillmore Field Offices. The VRM Class II and Class III lands associated with this alternative route are similar to those discussed for Alternative COUT BAX-C, except that this alternative route includes Class III lands adjacent to U.S. Highway 6.

U.S. Forest Service Visual Quality Objectives

Alternative COUT BAX-E in Utah crosses 7.7 miles of USFS-administered lands in the Manti-La Sal National Forest, all in a partial retention VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT BAX-E in Utah crosses 0.2 mile of Class A, 51.6 miles of Class B, and 142.9 miles of Class C landscapes in the BLM Moab, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Fort Ridge
- Green River/Book Cliffs
- Horseshoe Canyon[1]
- Roan Cliffs/Book Cliffs West

Class B SQRUs
- Achee Uplands
- Beckwith Plateau
- Book Cliffs Bench
- Chimney Rock Flats
- Cleveland Lloyd Dinosaur Quarry[1]
- Coal Draw/Agate
- Dog Valley[1]
- Education Creek
- Green River Valley[1]
- Last Spring[1]
- Manti-La Sal[1]
- Park Canyon
- Price River[1]
- San Pitch Mountains[1]
- Sanpete Valley[1]
- South Book Cliffs Bench[1]
- Sugarloaf[1]
- The Book Cliffs[1]
- The Western Bench[1]
- Upper Bitter Creek

Class C SQRUs
- Apple Spring[1]
- Cisco Desert[1]
- Clark Valley and the Price River Valley[1]
- U.S. Highway 6/Gunnison Valley[1]
- Uranium Hills
- White Sands

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-E in Utah crosses 20.6 miles of high sensitivity, 104.1 miles of moderate sensitivity, and 76.7 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- I-70 ACEC
- Labyrinth
- Manti-LaSal

Moderate SLRUs
- Dinosaur Diamond
- Humbug Flats
- I-15
- I-70
- Upper Green River
- White Wash

Low SLRUs
- Cedar/CLDQ
- Cisco Desert
- Price Valley
- San Pitch Mountains
- San Rafael Desert
- Sanpete Valley

Distance Zones

Alternative COUT BAX-E in Utah crosses 169.9 miles in the foreground-middleground distance zone, 24.9 miles in the background distance zone, and 10.4 miles in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT BAX-E in Utah crosses 0.5 mile of VRI Class II, 34.9 miles in VRI Class III, and 155.8 miles in VRI Class IV in the BLM Moab, Price, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with the Green River, San Rafael Swell, and the east side of the Wasatch Plateau adjacent to Hiawatha.

Environmental Consequences (Utah)

Scenery

Alternative COUT BAX-E in Utah would have the same impacts on scenery as Alternative COUT BAX-B from the Colorado/Utah border until the crossing of I-70 west of Green River.

Across this alternative route, the majority of impacts are anticipated to be low with isolated areas of moderate and high impacts. Generally, moderate impacts would occur in the more distinctive Class A and B landscapes where the construction of access roads and tower pads, as well as geometric forms produced by right-of-way vegetation clearing, would contrast with the existing landscape character. High impacts on the Wasatch Plateau and Wasatch Plateau Parks landscapes are anticipated as a result of the modification of the existing landscape character, including the construction of access roads and tower pads in steep terrain, geometric forms in vegetation patterns from right-of-way clearing, and the introduction of transmission line structures into an area with limited cultural modifications. To reduce contrast resulting from the Project, selective mitigation measures would be applied, including minimizing ground disturbance associated with the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable.

Viewing Locations

Alternative COUT BAX-C in Utah would have the same impacts on viewing locations as Alternative COUT BAX-B from the Colorado/Utah border until the crossing of I-70 west of Green River.

Residences

High impacts would occur on views from the community of Clear Creek as the Project traverses the steep, densely vegetated Wasatch Plateau where views of the Project would be partially screened, 0.5 mile away to the extent that only skylined transmission structures would be visible. To reduce contrast, selective mitigation measures would be applied to maximize the distance between transmission line structures at the canyon crossing to limit the number of structures visible from Clear Creek. For additional analysis, refer to the contrast rating worksheet for KOP #213 in Appendix N.

Moderate impacts are anticipated on views from residences in Fairview where the Project would be located approximately 2 miles away, descending off of the Wasatch Plateau through primarily oak/maple vegetation. Selective mitigation measures would be applied to reduce contrast, including minimizing ground disturbance from the construction of access roads on steep terrain and limiting vegetation clearing in the right-of-way to the extent practicable to avoid producing geometric vegetation forms inconsistent with the existing landscape character. For additional analysis, refer to the contrast rating worksheet for KOP #261 and the associated visual simulation in Appendix N.

High impacts would occur on views from dispersed residences in Castle Valley where the Project would be located within 0.5 mile of a residence in a landscape characterized by agricultural development separated by linear plateaus. To reduce contrast produced by the Project, selective mitigation measures would be applied to minimize ground disturbance associated with the construction of access roads on the steep sides of the plateaus. Views from summer homes on the Wasatch Plateau would have a high level of impact where the Project would be located within 0.5 mile, traversing steep terrain vegetated with a variety of sub-alpine vegetation communities. Selective mitigation measures would be applied to reduce contrast, including limiting ground disturbance associated with construction of access roads and minimizing right-of-way vegetation clearing to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #196 in Appendix N.

High impacts are anticipated on views from dispersed residences in Sanpete Valley north of Fairview where the Project would be located within 1 mile of residences in an agricultural landscape. Since the Project crosses through an area of dispersed residences, there are limited opportunities to relocate the Project without transferring impacts from one group of residences to another. In areas where the Project crosses steep terrain transitioning off of the Wasatch Plateau, selective mitigation measures would be applied to minimize disturbance associated with the construction of access roads.

Alternative COUT BAX-E in Utah would have the same impacts on views from dispersed residences in Juab Valley as Alternative COUT BAX-B.

Travel Routes

Views from the U.S. Highway 6 portion of the Dinosaur Diamond Scenic Byway would have a high impact where the Project would be located within 0.5 mile of the road adjacent to an existing lower voltage transmission line. Long duration views of the Project would occur where the scenic byway would be paralleled for more than 30 miles in a nearly flat desert landscape that becomes more rolling and dissected north of Woodside. The Project would dominate views along the scenic byway due to the relative scale of the Project when compared to the existing transmission line; therefore, to most effectively reduce visual contrast, the Project would need to be relocated farther away from the road outside of the designated utility corridor. For additional analysis, refer to the contrast rating worksheet for KOP #41 and the associated visual simulation in Appendix N.

High impacts would occur at each of the five locations where the Project crosses the Energy Loop Scenic Byway through steep forested terrain. To reduce contrast associated with each of these scenic road crossings, selective mitigation measures would be applied to minimize ground disturbance from the construction of access roads, limit vegetation clearing in the right-of-way, and maximize the span between transmission line structures, thereby reducing the visual dominance of the Project. For additional analysis, refer to the contrast rating worksheets for KOPs #260 and #284 and the associated visual simulations in Appendix N.

Moderate impacts are anticipated on intermittently screened views of the Project from the Skyline Drive Scenic Backway where the Project would be located within 1 mile of the scenic road, traversing rolling terrain in the park-like landscape atop the Wasatch Plateau. Selective mitigation measures would be applied to reduce contrast, including limiting ground disturbance associated with the construction of access roads and minimizing vegetation clearing in the right-of-way to the extent practicable.

Recreation Areas

Views from a destination route providing access to the San Rafael Swell (Green River Cutoff Road) would have a high level of impact where the Project would be located within 0.5 mile of the road in a mostly level, desert-shrub landscape. To most effectively reduce visual contrast on views from this road, the Project would need to be relocated farther to the east outside of the designated utility corridor, providing a backdrop for views of the Project where the proposed transmission line structures would blend with the Book Cliffs.

As described in the Colorado portion of Alternative COUT BAX-E, impacts on views from dispersed recreation vary based on the level of contrast produced by the Project when compared to the existing landscape features, as well as the distance from which the Project would be viewed. Views from the majority of dispersed recreation occurring in the San Rafael Swell would be screened; therefore, the Project would have limited influence on these views.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 120.1 miles of BLM-administered land crossed by Alternative COUT BAX-E in Utah in the BLM Moab, Price, Richfield, and Fillmore Field Offices, 32.2 miles would not be in compliance with VRM Class III objectives, including:

- Old U.S. Highway 6 (Moab Field Office) – Noncompliance is the same as Alternative COUT BAX-B except views would be dominated by the Project for 8 miles (approximately 7 minutes at 65 mph)
- I-70 Harley Dome Rest Area (Moab Field Office) – Noncompliance is the same as Alternative COUT BAX-B.
- I-70 (Moab Field Office) – Noncompliance is the same as Alternative COUT BAX-B.
- Dinosaur Diamond Scenic Byway-U.S. Highway 6 (Price Field Office) – Noncompliance is the same as Alternative COUT BAX-B.

U.S. Forest Service Visual Quality Objectives

Since the Project traverses landscapes with few modifications and in proximity to several high concern viewers, the Project would not be visually subordinate to the existing landscape character. Therefore, the Project would not meet the definition of a partial retention VQO on the Manti-La Sal National Forest.

U.S. Forest Service Land and Resource Management Plan Conformance

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. As described above, the Project would not meet the definition of a partial retention VQO as it traverses the forest. Since the plan does not require that activities meet the adopted VQO, the Project would conform to the plan and the GWR Management Unit along this alternative route.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT BAX-E in Utah would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-252). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

Scenery associated with Alternative COUT BAX-E in Utah is similar to COUT BAX-B and this alternative route would influence the Roan Cliffs/Book Cliffs West SQRU (Class A) and cross the Horseshoe Canyon SQRU (Class A) on common links between Alternative COUT BAX-E and Alternative COUT BAX-B. Effects on those units are the same as previously discussed. This alternative route would influence, but not cross, the Green River/Book Cliffs SQRU (Class A) near its western edge where the Project would occur adjacent to U.S. Highway 6 and existing lower voltage transmission lines. The Ford Ridge SQRU (Class A) would be influenced, but not crossed, by the Project near the SQRU's southern edge where the Project would be located adjacent to a pipeline through steep, varying terrain.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The baseline resource inventory and residual impacts for the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes are presented in Tables 3-253 and 3-254.

Alternative COUT-A

Affected Environment (Colorado)

Scenery

Alternative COUT-A in Colorado crosses scenery typical of the Uinta Basin section of the Colorado Plateau physiographic province. From Massadona to the Colorado/Utah border, mostly Class C landscapes characterized by slightly rolling terrain vegetated with short shrubland species would be crossed on Links C186 and C187. The rural landscape character is a key feature of the landscapes traversed by the Project resulting from the juxtaposition of irrigated agricultural lands, natural lands, and dispersed residential areas. Alternative COUT-A crosses 1.0 miles of Class B scenery and 23.3 miles of Class C scenery.

Viewing Locations

Travel Routes

The Dinosaur Diamond Scenic Byway, associated with high concern viewers, would have views of the Project where Link C187 crosses the scenic road south of the community of Dinosaur.

Recreation Areas

Dispersed recreation opportunities are located across both BLM- and state-administered lands and include big game hunting, camping, fishing, geocaching, hiking, and many others.

Special Designations

The Dinosaur National Monument Canyon Visitor Center would have views of the Project from 1.4 miles away on Links C186 and C187.

KOPs specific to Alternative COUT-A include:

- #210: Dinosaur residential
- #211: Dinosaur Visitor Center [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-A in Colorado crosses 16.2 miles of BLM-administered land with all 16.2 miles in VRM Class III in the BLM White River Field Office. The VRM Class III lands associated with this alternative route are located adjacent to U.S. Highway 40 and Colorado State Highway 64.

TABLE 3-253
ALTERNATIVE ROUTE COMPARISON FOR PROJECT-LEVEL VISUAL RESOURCE INVENTORY FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Scenery (miles crossed)				High Concern Viewers (miles crossed)					Moderate Concern Viewers (miles crossed)					Management Classifications (miles crossed)					
																Bureau of Land Management Visual Resource Management Classes[1]			U.S. Forest Service Visual Quality Objectives[2]		
		A	B	C	Developed	0 to 0. 5 mile	0.5 to 1.0 mile	1 to 2 miles	2 to 3 miles	More than 3 miles	0 to 0. 5 mile	0.5 to 1.0 mile	1 to 2 miles	2 to 3 miles	More than 3 miles	Class II	Class III	Class IV	Retention	Partial Retention	Modification
COUT-A	207.9	1.3	118.6	87.3	0.7	60.9	38.9	70.1	15.3	27.7	77.1	38.9	47.7	25.3	18.9	0.0	27.2	27.9	0.1	15.5	3.9
Colorado	*24.3*	*0.0*	*1.0*	*23.3*	*0.0*	*1.2*	*3.0*	*18.1*	*2.0*	*0.0*	*2.7*	*6.8*	*14.7*	*0.1*	*0.0*	*0.0*	*16.2*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.6*	*1.3*	*117.6*	*64.0*	*0.7*	*59.7*	*35.9*	*52.0*	*13.3*	*27.7*	*74.4*	*32.1*	*33.0*	*25.2*	*18.9*	*0.0*	*11.0*	*27.9*	*0.1*	*15.5*	*3.9*
COUT-B	218.2	1.8	121.3	94.0	1.1	55.9	37.5	63.8	19.1	41.9	83.1	30.7	55.1	30.5	18.8	0.0	27.7	27.9	0.1	7.0	13.7
Colorado	*24.3*	*0.0*	*1.0*	*23.3*	*0.0*	*1.2*	*3.0*	*18.1*	*2.0*	*0.0*	*2.7*	*6.8*	*14.7*	*0.1*	*0.0*	*0.0*	*16.2*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*193.9*	*1.8*	*120.3*	*70.7*	*1.1*	*54.7*	*34.5*	*45.7*	*17.1*	*41.9*	*80.4*	*23.9*	*40.4*	*30.4*	*18.8*	*0.0*	*11.5*	*27.9*	*0.1*	*7.0*	*13.7*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	1.8	112.6	93.7	0.1	41.3	41.1	75.9	23.0	26.9	51.0	21.3	46.3	28.0	61.6	3.1	41.4	49.5	0.1	7.0	1.7
Colorado	*25.0*	*0.0*	*1.0*	*24.0*	*0.0*	*1.6*	*2.9*	*18.2*	*2.3*	*0.0*	*2.7*	*5.2*	*14.1*	*3.0*	*0.0*	*0.1*	*18.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*183.2*	*1.8*	*111.6*	*69.7*	*0.1*	*39.7*	*38.2*	*57.7*	*20.7*	*26.9*	*48.3*	*16.1*	*32.2*	*25.0*	*61.6*	*3.0*	*23.4*	*49.5*	*0.1*	*7.0*	*1.7*
COUT-H	200.6	5.6	86.7	108.0	0.3	41.6	30.1	67.3	26.4	35.2	45.8	24.1	54.8	20.5	55.4	3.1	42.3	49.6	0.0	7.7	0.0
Colorado	*25.0*	*0.0*	*1.0*	*24.0*	*0.0*	*1.6*	*2.9*	*18.2*	*2.3*	*0.0*	*2.7*	*5.2*	*14.1*	*3.0*	*0.0*	*0.1*	*18.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*175.6*	*5.6*	*85.7*	*84.0*	*0.3*	*40.0*	*27.2*	*49.1*	*24.1*	*35.2*	*43.1*	*18.9*	*40.7*	*17.5*	*55.4*	*3.0*	*24.3*	*49.6*	*0.0*	*7.7*	*0.0*
COUT-I	240.2	12.2	85.5	142.3	0.2	52.2	34.8	82.1	30.3	40.8	35.3	27.4	69.3	31.1	77.1	3.1	51.1	67.7	0.0	11.2	5.1
Colorado	*25.0*	*0.0*	*1.0*	*24.0*	*0.0*	*1.6*	*2.9*	*18.2*	*2.3*	*0.0*	*2.7*	*5.2*	*14.1*	*3.0*	*0.0*	*0.1*	*18.0*	*0.0*	*0.0*	*0.0*	*0.0*
Utah	*215.2*	*12.2*	*84.5*	*118.3*	*0.2*	*50.6*	*31.9*	*63.9*	*28.0*	*40.8*	*32.6*	*22.2*	*55.2*	*28.1*	*77.1*	*3.0*	*33.1*	*67.7*	*0.0*	*11.2*	*5.1*

NOTES:
[1]Bureau of Land Management Visual Resource management Class I is not crossed by any of the Project alternative route.
[2]U.S. Forest Service Preservation or Maximum Modification Visual Quality Objectives are not crossed by any of the Project alternative.

TABLE 3-254
ALTERNATIVE ROUTE COMPARISON FOR VISUAL RESOURCES RESIDUAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) ALTERNATIVE

Alternative Route	Total Miles	Residual Impacts (miles)										Compliance/Consistency (miles)				
		Scenery				High Concern Viewers			Moderate Concern Viewers			Bureau of Land Management Visual Resource Management Classes		U.S. Forest Service Visual Quality Objectives		Not Applicable
		High	Moderate	Low	Not Identifiable	High	Moderate	Low	High	Moderate	Low	Compliant	Not Compliant	Consistent	Not Consistent	
COUT-A	207.9	1.0	33.4	172.8	0.7	34.9	42.9	130.1	0.0	42.4	165.5	5.2	14.3	55.1	0.0	133.3
Colorado	*24.3*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*2.4*	*21.9*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*16.2*	*0.0*	*8.1*
Utah	*183.6*	*1.0*	*33.4*	*148.5*	*0.7*	*34.9*	*40.5*	*108.2*	*0.0*	*42.4*	*141.2*	*5.2*	*14.3*	*38.9*	*0.0*	*125.2*
COUT-B	218.2	1.5	54.6	161.0	1.1	36.8	41.6	139.8	0.0	60.4	157.8	55.6	0.0	19.4	1.4	141.8
Colorado	*24.3*	*0.0*	*0.0*	*24.3*	*0.0*	*0.0*	*2.4*	*21.9*	*0.0*	*0.0*	*24.3*	*16.2*	*0.0*	*0.0*	*0.0*	*8.1*
Utah	*193.9*	*1.5*	*54.6*	*136.7*	*1.1*	*36.8*	*39.2*	*117.9*	*0.0*	*60.4*	*133.5*	*39.4*	*0.0*	*19.4*	*1.4*	*133.7*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	29.1	40.3	138.7	0.1	21.6	42.6	144.0	1.1	29.8	177.3	90.6	3.4	7.4	1.4	105.4
Colorado	*25.0*	*0.0*	*0.0*	*25.0*	*0.0*	*0.0*	*0.0*	*25.0*	*0.0*	*0.0*	*25.0*	*18.1*	*0.0*	*0.0*	*0.0*	*6.9*
Utah	*183.2*	*29.1*	*40.3*	*113.7*	*0.1*	*21.6*	*42.6*	*119.0*	*1.1*	*29.8*	*152.3*	*72.5*	*3.4*	*7.4*	*1.4*	*98.5*
COUT-H	200.6	29.8	56.2	114.3	0.3	30.0	35.5	135.1	5.2	25.5	169.9	90.4	4.6	0.0	7.7	97.9
Colorado	*25.0*	*0.0*	*0.0*	*25.0*	*0.0*	*0.0*	*0.0*	*25.0*	*0.0*	*0.0*	*25.0*	*18.1*	*0.0*	*0.0*	*0.0*	*6.9*
Utah	*175.6*	*29.8*	*56.2*	*89.3*	*0.3*	*30.0*	*35.5*	*110.1*	*5.2*	*25.5*	*144.9*	*72.3*	*4.6*	*0.0*	*7.7*	*91.0*
COUT-I	240.2	16.4	67.5	156.1	0.2	37.4	44.8	158.0	2.6	20.1	217.5	117.4	4.5	6.3	10.0	102.0
Colorado	*25.0*	*0.0*	*0.0*	*25.0*	*0.0*	*0.0*	*0.0*	*25.0*	*0.0*	*0.0*	*25.0*	*18.1*	*0.0*	*0.0*	*0.0*	*6.9*
Utah	*215.2*	*16.4*	*67.5*	*131.1*	*0.2*	*37.4*	*44.8*	*133.0*	*2.6*	*20.1*	*192.5*	*99.3*	*4.5*	*6.3*	*10.0*	*95.1*

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-A crosses 24.3 miles in a Class C landscape in the BLM White River Field Office. The following SQRUs were inventoried in the visual study area for this alternative route:

Class B SQRUs
- Bull Canyon/Willow Creek WSA
- Coal Ridge
- Coal Rim
- Skull Creek
- Spring Creek

Class C SQRUs
- Dripping Rock Spring
- M.F. Mountain1

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-A in Colorado cross 24.3 miles of moderate sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

Moderate SLRUs
- Coal Oil Rim
- Skull Creek
- White River West

Distance Zones

Alternative COUT-A in Colorado would be completely located in the foreground-middleground distance zone.

Visual Resource Inventory Classes

Alternative COUT-A crosses 24.3 miles in VRI Class IV in the BLM White River Field Office.

Environmental Consequences (Colorado)

Scenery

Alternative COUT-A in Colorado would result in modifications to all landscapes crossed based on the introduction of transmission line structures (including tower pads), construction and maintenance of access roads, and right-of-way vegetation clearing. These modifications would contrast with existing landscape characteristics common to the region. Particularly in areas that exhibit a rural character, the Project would introduce formal hard edge geometry into a rolling landscape. Due to the existing transmission lines paralleling the majority of this alternative route, low impacts on scenery are anticipated.

Viewing Locations

Travel Routes

Moderate impacts would occur where the Project crosses the Dinosaur Diamond Scenic Byway in context with an adjacent lower voltage transmission line and approximately 1 mile from another existing transmission line. To reduce contrast on views from the scenic road, selective mitigation measures would

be applied to maximize the span length between transmission towers at the road crossing to reduce the dominance of the Project.

Recreation Areas

Dispersed recreation occurs throughout public-administered lands adjacent to the Project. The level of impact on these dispersed recreationists would be dependent on the level of contrast produced by the Project when compared to the existing condition, as well as the distance from which the Project would be viewed. The highest level of impacts would occur where the dispersed recreationist is located within 0.5 mile of the Project in a landscape with few cultural modifications, while the lowest level of impacts would occur on views from beyond the 6-mile-wide study corridor where the Project is colocated with existing transmission lines.

Special Designations

Moderate impacts are anticipated on views from the Dinosaur National Monument Canyon Visitor Center, more than 1 mile away from where the Project would parallel an existing lower voltage transmission line. Several transmission line structures would be skylined on a ridge as viewed from the visitor center. For additional analysis, refer to the contrast rating worksheet for KOP #211 and the associated visual simulation in Appendix N.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

The Colorado portion of Alternative COUT-A in Colorado would be compliant with VRM Class III lands crossed.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-A would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-255). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape. Scenery associated with this alternative route consists of slightly rolling terrain with cultural modifications typical of rural development with multiple transmission lines adjacent to U.S. Highway 40. SQRU units crossed by this alternative route are Class C and are crossed adjacent to existing transmission lines; however, there are Class B SQRUs that would be influenced by the Project.

TABLE 3-255
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) (COLORADO)

	COUT-A	COUT-B	COUT-C (Agency and Applicant Preferred Alternative)	COUT-H	COUT-I
Class A					
Total Area (acres)	0	0	0	0	0
Area Influenced by the Project (acres)	0	0	0	0	0
Percentage influenced by the Project	0.0	0.0	0.0	0.0	0.0
Class B					
Total Area (acres)	220,536	220,536	225,225	225,225	225,225
Area Influenced by the Project (acres)	34,759	34,759	29,223	29,223	29,223
Percentage influenced by the Project	15.8	15.8	13.0	13.0	13.0
Class C					
Total Area (acres)	167,653	167,653	247,758	247,758	247,759
Area Influenced by the Project (acres)	76,513	76,513	84,900	84,900	84,900
Percentage influenced by the Project	45.6	45.6	34.3	34.3	34.3

Affected Environment (Utah)

Scenery

Alternative COUT-A in Utah crosses scenery typical of the Middle Rocky Mountains, Basin and Range, and Colorado Plateau (Uinta Basin and High Plateaus of Utah sections) physiographic provinces. From the Colorado/Utah border to Fruitland, across the Uinta Basin, agricultural landscapes located adjacent to watercourses transition to sagebrush-dominated basins separated by rocky escarpments. West of Fruitland to Nephi, the Project would traverse mostly Class B landscapes associated with mountainous landscapes in the Uinta-Wasatch-Cache and Manti-La Sal National Forests. These landscapes range from high altitude, aspen covered plateaus to steeply dissected slopes containing a range of vegetation types that transition into adjacent canyons such as Spanish Fork, Thistle Creek, and Salt Creek. On Link U424, the Strawberry River (Class A) would be crossed by the Project below the Soldier Creek Dam on Strawberry Reservoir. A deep canyon with an intact riparian corridor has been carved by the Strawberry River in this area. Dense conifers and aspen are located on the south side of the canyon while sagebrush and pinyon-juniper vegetation communities dominate the north side. From Nephi to the Mona Substation, the Project crosses Juab Valley (Class C), a typical basin landscape, on Link U650. As described for the Colorado portion of this alternative route, a rural landscape character is a key feature of many of the landscapes crossed. Alternative COUT-A in Utah crosses 1.3 miles of Class A scenery, 117.6 miles of Class B scenery, 64.0 miles of Class C scenery, and 0.6 mile of developed land would be crossed by Alternative COUT-A.

Viewing Locations

Residences

The community of Fruitland, located near Link U426, contains several clusters of high-concern residential viewing locations. Across the Uinta Basin from Vernal to Fruitland, there are groups of dispersed residences located adjacent to highways, county roads, and water courses, including residences in the Uintah and Ouray Indian Reservation. These residences would have views of the Project from less than 0.25 mile away on Links U410, U420, U421, and U426. In addition to the dispersed residences located in the Uinta Basin, there are dispersed rural residences concentrated in four areas along

Alternative COUT-A: (1) adjacent to Strawberry Reservoir, (2) U.S. Highway 89 corridor, (3) Sanpete Valley, and (4) Juab Valley.

Travel Routes

The Dinosaur Diamond Scenic Byway, associated with high concern viewers, would have views of the Project on Link U410 as the Project crosses the scenic road 5 miles southwest of Roosevelt. Motorists on the White River/Strawberry Road Scenic Backway, which is associated with high concern viewers and located on the Uinta-Wasatch-Cache National Forest approximately 20 miles southwest of Fruitland, would have views of the Project on Link U429 where the scenic road would be crossed. U.S. Highway 6, associated with moderate concern viewers, would have views of the Project where Link U424 crosses the highway and be located parallel to the highway for 7 miles along Link U460 at a distance of approximately 1 mile.

Recreation Areas

The Aspen Grove Campground in the Uinta-Wasatch-Cache National Forest (associated with high concern viewers) would have views of the Project within 0.5 mile on Link U424. The Great Western Trail (associated with high concern viewers) would be crossed by Link U424 on the Uinta-Wasatch-Cache National Forest. Link U390 crosses the Green River, associated with high concern viewers, north of the Ouray National Wildlife Refuge (NWR). The Project crosses the Strawberry River (associated with high concern viewers) approximately 0.75 mile south of the Soldier Creek Dam on Link U424. Several recreation sites are located adjacent to the Strawberry Reservoir, including boat launches, picnic areas, overlooks, and campgrounds. These recreation sites would have views of Link U424 from 0.5 to 2.0 miles away as the Project nears the Uinta-Wasatch-Cache National Forest. Dispersed recreation opportunities are located across BLM-, USFS-, and state-administered lands, including big game hunting, camping, fishing, geocaching, hiking, and many others.

KOPs specific to Alternative COUT-A in Utah include:

- #36: Birdseye residential
- #100: Dispersed residences along Utah State Route 88
- #108: Dinosaur Diamond Scenic Byway (U.S. Highway 40 southwest of Roosevelt)
- #109: Dispersed residences south of Roosevelt [simulation]
- #110: Roosevelt residential
- #111: Bottle Hollow Reservoir
- #113: Utah State Route 88 (north of Leota)
- #131: Mount Nebo Loop Scenic Byway
- #204: Nephi residential
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #265: I-15 (Nephi) [simulation]
- #266: U.S. Highway 6 (Spanish Fork Canyon) [simulation]
- #267: Battle Flats Recreation Area (Strawberry Reservoir)
- #268: U.S. Highway 40 Pullout (west of Fruitland)
- #269: Fruitland residential [simulation]
- #270: Starvation Reservoir
- #285: Aspen Grove Campground [simulation]
- #304: Sheep Creek Road (Forest Road 042) [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-A in Utah crosses 38.9 miles of BLM-administered land with 11.0 miles in VRM Class III and 27.9 miles in VRM Class IV in the BLM Vernal, Salt Lake, Richfield, and Fillmore Field Offices. The VRM Class III lands associated with this alternative route are located adjacent to U.S. Highway 40, Fountain Green, Utah State Route 132, and Mona.

U.S. Forest Service Visual Quality Objectives

Alternative COUT-A in Utah crosses 19.5 miles of USFS-administered lands in the Uinta-Wasatch-Cache and Manti-La Sal National Forests. On the Uinta-Wasatch Cache National Forest, this alternative route crosses 0.1 mile of retention VQO, 14.7 miles of partial retention VQO and 3.7 miles of modification VQO. The Project crosses 1.0 miles in a partial retention VQO on the Manti-La Sal National Forest.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-A in Utah crosses 18.9 miles of Class A, 39.7 miles of Class B, and 38.9 miles of Class C landscapes in the BLM Vernal, Salt Lake, Richfield, and Fillmore Field Offices.

The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- South Green River
- Spanish Fork Canyon[1]

Class B SQRUs
- Blue Mountain Valley[1]
- Dog Valley[1]
- Horseshoe Bend – Green River[1]
- Pelican Lake[1]
- Red Wash/Kennedy Wash/Devil's Playground[1]
- San Pitch Mountains[1]
- Sanpete Valley
- Squaw Ridge[1]
- Walker Plateau East

Class C SQRUs
- Apple Spring[1]
- Deadman's Bench[1]
- McCoy Flats[1]
- Ouray Valley[1]
- Sand Spring Wash
- Walker Plateau West[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-A in Utah crosses 33.8 miles of moderate sensitivity and 58.6 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for Alternative COUT-A:

Moderate SLRUs
- I-15
- Spanish Fork Canyon

Low SLRUs
- Full-Field Development Area
- San Pitch Mountains
- Sanpete Valley

Distance Zones

Alternative COUT-A in Utah crosses 107.3 miles in the foreground-middleground distance zone, 38.9 miles in the background distance zone, and 37.4 miles in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT-A in Utah crosses 9.8 miles in VRI Class II, 12.0 miles in VRI Class III, and 58.3 miles in VRI Class IV in the BLM Vernal, Salt Lake, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with Spanish Fork Canyon.

Environmental Consequences (Utah)

Scenery

Effects of the Project on the rural character of landscapes crossed by the Utah portion of Alternative COUT-A would be similar to those discussed for the Colorado portion.

Across this alternative route, the majority of impacts on scenery are anticipated to be moderate to low with an isolated occurrence of high impacts. Generally, moderate impacts would occur in the more distinctive Class B landscapes where the construction of access roads and tower pads, as well as right-of-way vegetation clearing, would contrast with the existing landscape character. High impacts on the Strawberry River landscape are anticipated due to construction of access roads and tower pads in steep terrain, geometric vegetation forms from right-of-way clearing, and the introduction of additional transmission line structures. To reduce contrast with the landscape's existing character, selective mitigation measures would be applied, including minimizing ground disturbance associated with construction of access roads and tower pads, limiting vegetation clearing in the right-of-way, and minimizing the number of transmission line structures in the landscape by spanning the Strawberry River canyon to the extent practicable.

Viewing Locations

Residences

Low impacts are anticipated on views from the majority of residences in Fruitland because the Project would be located 250 feet away from an existing transmission line of similar design. There is an area of moderate impacts associated with views from residences south of U.S. Highway 40 where the Project crosses steep terrain within 0.5 mile of residences. To reduce contrast produced by the Project in this area, access roads would be constructed to minimize ground disturbance to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #269 and the associated visual simulation in Appendix N.

High impacts would occur on views from dispersed residences in the Uinta Basin where residences are located within 0.5 mile of the Project in a typical Uinta Basin landscape characterized by level irrigated agricultural lands separated by rocky escarpments. The Project would parallel an existing transmission line, but due to the separation between the two transmission lines, typically 0.5 mile, many residences would have views dominated by the Project. To most effectively reduce contrast on views from these residences, the Project should be located closer to the existing transmission line so that they would be viewed in context with each other. For additional analysis, refer to the contrast rating worksheet for KOP #109 and the associated visual simulation in Appendix N.

High impacts would occur on views from summer cabins located south of the Aspen Grove Campground located within 0.5 mile of the Project traversing steep slopes primarily vegetated with mixed conifer stands. An existing transmission line is adjacent to the Project, but due to topographic screening it would not be visible from these residences. To decrease visual contrast, selective mitigation measures would be applied, including reducing the construction of new access roads to the extent practicable, minimizing ground disturbance where access roads would need to be constructed, and limiting vegetation clearing in the right-of-way. Views from residences along U.S. Highway 89, south of Thistle, would have a high

level of impact where the Project would be located closer to the residences than to the existing transmission line traversing steep forested terrain. Selective mitigation measures would be applied to reduce contrast, including minimizing ground disturbance associated with the construction of access roads, limiting vegetation clearing in the right-of-way to the extent practicable, and matching tower spans of the existing transmission line to reduce the visual space occupied by transmission towers.

Views from residences at the north end of Sanpete Valley, at the mouth of Salt Creek Canyon, would have a moderate level of impact where the Project would be located within 0.5 mile of these residences. The Project would traverse steep terrain in proximity to multiple existing transmission lines. To decrease visual contrast on views from these residences, selective mitigation measures would be applied, including minimizing ground disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable.

Views from residences in Juab Valley, including the community of Nephi, would have mostly moderate impacts; however, high impacts would occur where the Project traverses steep slopes vegetated with dense pinyon-juniper vegetation. Multiple transmission lines are located approximately 0.5 mile north of the Project, but views from these residences would be dominated by the Project since it would be located closer to these viewers than the existing lines. To reduce visual contrast, selective mitigation measures would be applied, including reducing ground disturbance associated with the construction of access roads and minimizing vegetation clearing in the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #204 in Appendix N.

Travel Routes

High impacts would occur where the Project crosses the Dinosaur Diamond Scenic Byway (U.S. Highway 40) on North Myton Bench, approximately 1 mile from an existing transmission line. Selective mitigation measures would be applied to decrease contrast, including minimizing ground disturbance from the construction of access roads and maximizing the span length between transmission line structures at the highway crossing to reduce the dominance of the structures in the viewshed.

Views from the White River/Strawberry Road Scenic Backway would have a high level of impact where the Project would be located within 0.5 mile of the scenic road. The Project would be viewed traversing steeply rolling terrain on the Uinta-Wasatch-Cache National Forest through stands of aspen trees adjacent to an existing transmission line. The application of selective mitigation measures would reduce visual contrast, including limiting ground disturbance from the construction of access roads, minimizing vegetation clearing in the right-of-way, and maximizing the span length at the road crossing.

Moderate impacts are anticipated on views from U.S. Highway 6 in Spanish Fork Canyon where the Project crosses the highway in context with existing transmission lines. Selective mitigation measures would be applied to reduce contrast produced by the Project, including minimizing ground disturbance associated with construction of access roads and limiting vegetation clearing in the right-of-way.

Recreation Areas

Impacts on views from the Aspen Grove Campground would be similar to impacts previously described for summer cabins south of the campground. For additional analysis, refer to the contrast rating worksheet for KOP #285 and the associated visual simulation in Appendix N.

High impacts would occur on views from the Great Western Trail where the Project crosses the trail in a steep forested landscape. To reduce contrast on views from the trail, selective mitigation measures would be applied, including avoiding the construction of new access roads across the trail, minimizing ground

disturbance associated with access roads required for construction, limiting vegetation clearing in the right-of-way, and maximizing the span length between transmission towers at the trail crossing.

High impacts are anticipated on views from the Green River where the Project crosses the river in the Uinta Basin, 0.7 mile south of an existing transmission line. Selective mitigation measures would be applied to reduce contrast, including limiting disturbance associated with the construction of access roads on the steep terrain on either side of the Green River and maximizing the span length between transmission structures at the river crossing to reduce their dominance on views.

Recreation sites located adjacent to Strawberry Reservoir, including the Strawberry River, would have high impacts where the Project would be located within 0.5 mile of these sites in steep, densely vegetated terrain. Mitigation measures would be applied to decrease contrast on views from these sites, including limiting the construction of access roads adjacent to recreation sites to the extent practicable, minimizing ground disturbance associated with the construction of access roads, reducing vegetation clearing in the right-of-way, and maximizing the span length between transmission towers across the Strawberry River to reduce visual dominance of these structures in the landscape. To further reduce contrast on views from the Strawberry River, the Project could be located closer to the existing transmission line that would diminish the area visually influenced by development along the river. During final engineering of the selected route, additional site-specific mitigation measures would be evaluated.

As described in the Colorado portion of Alternative COUT-A, impacts on views from dispersed recreation vary based on the level of contrast produced by the Project as compared to the existing landscape features, as well as the distance from which the Project would be viewed.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-A in Utah would be compliant with BLM VRM Class III and IV lands crossed.

U.S. Forest Service Visual Quality Objectives

Uinta-Wasatch-Cache National Forest

The Project would meet the definition of a modification VQO where this objective would be crossed in the Uinta-Wasatch-Cache National Forest. Since the Project parallels an existing transmission line with similar design characteristics, after the application of selective mitigation measures, the Project would borrow from the landscape's established form, line, color, and texture. In most locations, the Project would not meet the definition of a partial retention VQO except for the area adjacent to U.S. Highway 6 (Link U433 between Mileposts 6.9 and 8.3) where several existing transmission lines have modified the landscape character. In other areas, the influence of existing transmission lines would not be enough for the Project to be subordinate to the existing landscape character. The Project would not meet the definition of a retention VQO (Link U460 between Mileposts 1.1 and 1.2) where the Project parallels an existing transmission line south of U.S. Highway 6 in an area also visually influenced by other existing transmission lines north of the highway.

Manti-La Sal National Forest

The Project would not meet the definition of a partial retention VQO where this objective would be crossed in the Manti-La Sal National Forest, as the influence of the existing transmission line would not be enough for the Project to be subordinate to the existing landscape character.

U.S. Forest Service Land and Resource Management Plan Conformance

Uinta-Wasatch-Cache National Forest

The 2003 Uinta National Forest LRMP includes the following standard and guideline in reference to scenery management:

- Standard: Safety concerns will supersede objectives for scenery when vegetative manipulation, signing, etc. is needed to ensure public safety.
- Guideline: Forest resource uses or activities should meet the assigned objectives for scenery management as display on the map for each management area.

The Project would not conform to the guideline since the Project would not meet the definition of a retention VQO in a small area and a partial retention VQO in several locations. Alternative COUT-A in Utah would be completely located in a designated corridor across the Uinta-Wasatch-Cache National Forest. The noncompliance with partial retention VQOs stems from the Project not being located directly adjacent to the existing transmission line, as well as the geometric forms produced by right-of-way vegetation clearing. Since the reason for this noncompliance with retention and partial retention VQOs is based on safety requirements, including WECC reliability standards for separation between transmission lines and the NERC transmission vegetation management program, the Project would conform to the scenery management standard.

Manti-La Sal National Forest

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. For the GWR Management Unit, direction is given for activities that meet the VQO except where habitat improvement activities occur. The Project traverses the GWR Management Unit in a partial retention VQO where the Project would not be consistent with the definition of this objective (Link U621, between Mileposts 3.4 and 4.3). As such, a potential amendment to the Manti-La Sal National Forest LRMP was identified and is discussed further in Chapter 5.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-A in Utah would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-256). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

TABLE 3-256
EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL UTAH TO CLOVER (COUT) (UTAH)

	COUT-A	COUT-B	COUT-C (Agency and Applicant Preferred Alternative)	COUT-H	COUT-I
Class A					
Total Area (acres)	257,262	591,026	732,579	527,727	483,836
Area Influenced by the Project (acres)	57,738	159,661	231,191	94,026	91,925
Percentage influenced by the Project	22.4	27.0	31.6	17.8	19.0
Class B					
Total Area (acres)	1,190,237	1,356,333	1,308,468	1,755,723	1,799,788
Area Influenced by the Project (acres)	180,234	220,233	187,106	292,304	301,433
Percentage influenced by the Project	15.1	16.2	14.3	16.6	16.7
Class C					
Total Area (acres)	562,275	724,291	1,016,734	1,414,869	1,414,869
Area Influenced by the Project (acres)	129,098	132,781	229,030	248,417	348,097
Percentage influenced by the Project	23.0	18.3	22.5	17.6	24.6

Scenery associated with Alternative COUT-A in Utah consists of agricultural landscapes, riparian/river corridors, large basins/valleys, mountainous landscapes, dissected steep slopes, and canyons. Cultural modifications are typical of rural agricultural and urban development generally concentrated along river and valley corridors with intermittent oil and gas development, as well as transmission lines occurring throughout. The South Green River SQRU (Class A) would be influenced, but not crossed, by the Project near the SQRU's northern edge where the Project crosses the Green River adjacent to an existing transmission line, oil and gas development, and rural/agricultural development (included on the scenic quality rating worksheet). The Spanish Fork Canyon SQRU (Class A) would be crossed by this alternative route in varying steep and rugged mountainous terrain and canyons adjacent to existing transmission lines. Squaw Ridge SQRU (Class B) is a narrow unit associated with a small ridge that would be crossed along its northern boundary by this alternative route; the Project would be adjacent to a lower voltage transmission line as it crosses this unit. The Blue Mountain Valley SQRU (Class B) surrounds the Squaw Ridge SQRU and also would be crossed by the Project. A portion of the unit would be crossed with the Project adjacent to a lower voltage transmission line with the other area crossed in a largely intact natural desert valley landscape. The Horseshoe Bend-Green River SQRU (Class B) would be bisected by the Project; however the Project would occur adjacent to existing transmission lines.

Alternative COUT-B

Affected Environment (Colorado)

Scenery

Alternative COUT-B in Colorado cross the same scenery as Alternative COUT-A.

Viewing Locations

Viewing locations along Alternative COUT-B in Colorado are the same as Alternative COUT-A.

Federal Agency Visual Management Objectives

Federal agency visual management objectives for Alternative COUT-B in Colorado are the same as Alternative COUT-A.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes for Alternative COUT-B in Colorado are the same as Alternative COUT-A.

Environmental Consequences (Colorado)

Scenery

Alternative COUT-B in Colorado would have the same impacts on scenery as Alternative COUT-A.

Viewing Locations

Alternative COUT-B in Colorado would have the same impacts on viewing locations as Alternative COUT-A.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative COUT-B in Colorado is the same as Alternative COUT-A.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-B in Colorado would have the same effects on BLM SQRUs as those discussed for Alternative COUT-A (Table 3-255).

Affected Environment (Utah)

Scenery

Alternative COUT-B in Utah crosses similar scenery as Alternative COUT-A, except for the area between Roosevelt and Thistle, which is located at the intersection of U.S. Highways 6 and 89 in Spanish Fork Canyon. From Roosevelt to Bridgeland, the Project would continue to traverse typical Uinta Basin landscapes defined by the juxtaposition of irrigated agricultural lands and sparsely vegetated natural areas. South of Bridgeland on Links U431 and U432, the Project would begin to climb the West Tavaputs Plateau that is characterized, in this area, by a series of northeast to southwest trending canyons vegetated with pinyon-juniper, subalpine, and aspen vegetation communities. Argyle Canyon, a Class A landscape located in the West Tavaputs Plateau, would be crossed by Links U431 and U432 adjacent to an existing lower voltage transmission line. The Project crosses Argyle Canyon at the top of the canyon through an area of summer homes with dense subalpine vegetation on moderate-to-steep slopes. Descending the West Tavaputs Plateau, the Project crosses the Roan Cliffs into Emma Park and parallels the edge of the Roan Cliffs to Soldier Summit. West of Soldier Summit, the Project would parallel U.S. Highway 6 adjacent to existing transmission lines through Spanish Fork Canyon to Thistle.

As described for the Colorado portion of Alternative COUT-B, a rural landscape character is a key feature of many of the landscapes crossed. Alternative COUT-B crosses 1.8 miles of Class A scenery, 120.3 miles of Class B scenery, 70.7 miles of Class C scenery, and 1.1 mile of developed land.

Viewing Locations

Residences

A group of summer homes located at the top of Argyle Canyon along Link U432 would have views of the Project within 0.25 mile. Dispersed rural residences are located in clusters across the Uinta Basin from Vernal to Bridgeland adjacent to highways, county roads, and water courses, including residences on the Uintah and Ouray Indian Reservation. These residences would have views of the Project from less than 0.25 mile on Links U410 and U430. There also are five areas of concentrated dispersed residences outside of the Uinta Basin that would have views of the Project: (1) Emma Park, (2) Spanish Fork Canyon, (3) U.S. Highway 89 corridor, (4) Sanpete Valley, and (5) Juab Valley.

Travel Routes

The Dinosaur Diamond Scenic Byway, associated with high concern viewers, would be crossed by the Project on Link U410 southwest of Roosevelt and south of Bridgeland on Link U430, where the scenic road shares its alignment with U.S. Highway 40. U.S. Highway 191, from Duchesne to Castle Gate, is designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways and would be crossed by Link U524 at the base of the Roan Cliffs. A portion of the Energy Loop Scenic Byway (associated with high concern viewers) shares its alignment with Utah State Route 96 and would be crossed by Link U530, 23 miles northwest of Price. U.S. Highway 6, associated with moderate concern viewers, would have views of the Project on Links U524, U530, U539, and U460 where the highway would be paralleled for more than 30 miles.

Recreation Areas

The Green River, associated with high concern viewers, would be crossed by Link U390 north of the Ouray NWR. Camp Timberlane associated with the high concern viewers would be crossed by Links U432 and U434. Opportunities for dispersed recreation occur on BLM-, USFS-, and state-administered lands, including big game hunting, camping, fishing, geocaching, hiking, and many other informal activities.

KOPs specific to Alternative COUT-B in Utah include:

- #22: Soldier Summit
- #36: Birdseye residential
- #100: Dispersed residences along Utah State Route 88
- #103: Dinosaur Diamond Scenic Byway (U.S. Highway 40 south of Bridgeland)
- #105: Dispersed residences south of Duchesne
- #107: Ioka residential
- #108: Dinosaur Diamond Scenic Byway (U.S. Highway 40 southwest of Roosevelt)
- #109: Dispersed residences south of Roosevelt [simulation]
- #110: Roosevelt residential
- #111: Bottle Hollow Reservoir
- #113: Utah State Route 88 (north of Leota)
- #131: Mount Nebo Loop Scenic Byway
- #204: Nephi residential
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #216: U.S. Highway 6 (west of Soldier Summit)
- #265: I-15 (Nephi) [simulation]
- #266: U.S. Highway 6 (Spanish Fork Canyon) [simulation]
- #271: Bridgeland residential

- #315: Sowers Canyon Road
- #325: Argyle Canyon residences [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-B in Utah crosses 39.4 miles of BLM-administered land with 11.5 miles in VRM Class III and 27.9 miles in VRM Class IV in the BLM Vernal, Price, Salt Lake, Richfield, and Fillmore Field Offices. The VRM Class III lands associated with this alternative route are similar to Alternative COUT-A, except this alternative route includes lands adjacent to Argyle Canyon and U.S. Highway 191.

U.S. Forest Service Visual Quality Objectives

Alternative COUT-B in Utah crosses 20.8 miles of USFS-administered lands in the Ashley, Uinta-Wasatch-Cache, and Manti-La Sal National Forests. On the Ashley National Forest, this alternative route crosses 12.0 miles of a modification VQO. On the Uinta-Wasatch-Cache National Forest, this alternative route crosses 0.1 mile of retention VQO, 6.0 miles of a partial retention VQO, and 1.7 miles of a modification VQO. The Project crosses 1.0 mile in a partial retention VQO on the Manti-La Sal National Forest.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-B in Utah crosses 37.1 miles of Class A, 58.3 miles of Class B, and 38.9 miles of Class C landscapes in the BLM Vernal, Price, Salt Lake, Richfield, and Fillmore Field Offices.

The following SQRUs were inventoried in the visual study area for Alternative COUT-B in Utah:

Class A SQRUs	Class B SQRUs	Class C SQRUs
■ Argyle Creek[1]	■ Beaver Ridge[1]	■ Apple Spring[1]
■ Ford Ridge	■ Blue Mountain Valley[1]	■ Deadman's Bench[1]
■ Green River/Book Cliffs[1]	■ Dog Valley[1]	■ Little Desert
■ South Green River	■ Emma Park[1]	■ McCoy Flats[1]
■ Spanish Fork Canyon[1]	■ Horseshoe Bend-Green River[1]	■ Ouray Valley[1]
	■ Kyune[1]	■ Sand Spring Wash
	■ Pelican Lake[1]	■ Walker Plateau West[1]
	■ Red Wash/Kennedy Wash/Devil's Playground[1]	
	■ San Pitch Mountains[1]	
	■ Sanpete Valley	
	■ Squaw Ridge[1]	
	■ The Book Cliffs	
	■ Walker Plateau East	

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-B in Utah crosses 15.4 miles of high sensitivity, 55.24.7 miles of moderate sensitivity, and 58.6 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs	Moderate SLRUs	Low SLRUs
■ Nine Mile Canyon	■ I-15	■ Full-Field Development Area
■ West Book Cliffs	■ Spanish Fork Canyon	■ San Pitch Mountains
		■ Sanpete Valley

Distance Zones

Alternative COUT-B in Utah crosses 159.4 miles in the foreground-middleground distance zone and 34.4 miles in the background distance zone.

Visual Resource Inventory Classes

Alternative COUT-B crosses 33.4 miles of VRI Class II, 26.9 miles in VRI Class III, and 58.3 miles in VRI Class IV in the BLM Vernal, Price, Salt Lake, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with Argyle Canyon, the Roan Cliffs, and Spanish Fork Canyon.

Environmental Consequences (Utah)

Scenery

Alternative COUT-B in Utah would have similar impacts on scenery as Alternative COUT-A, except for the crossing of the Argyle Canyon landscape. High impacts would occur where the Project crosses the Argyle Canyon landscape and would modify the existing landscape character through the construction of access roads and tower pads in steep terrain, right-of-way vegetation clearing, and the addition of transmission line structures into a landscape with limited cultural modifications. To reduce contrast with the landscape's character, selective mitigation measures would be applied, including minimizing ground disturbance from the construction of access roads and tower pads, blending the color of the lighter exposed soils resulting from earthwork with the surface soil color, and limiting vegetation clearing in the right-of-way.

Viewing Locations

Residences

High impacts are anticipated on views from summer homes in Argyle Canyon (and the adjacent Argyle Canyon Road) where the Project traverses a steep forested landscape adjacent to an existing lower voltage transmission line. The existing transmission line towers are wooden H-frame structures that are mostly screened from view by adjacent vegetation. The taller transmission structures proposed for the Project would be skylined over the trees and would dominate views from these summer homes. To reduce contrast produced by these taller structures, the application of selective mitigation measures would modify the structure type in this area to use the shorter, H-frame alternative structure type. Additional selective mitigation measures would be applied to further reduce contrast, including minimizing ground disturbance associated with construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #325 and the associated visual simulation in Appendix N.

High impacts would occur on views from dispersed residences in the Uinta Basin where the residences are located within 0.5 mile of the Project in a typical Uinta Basin landscape characterized by level irrigated agricultural lands separated by rocky escarpments. The Project would parallel an existing transmission line, but due to the separation between the two transmission lines (typically 0.5 mile), many residences would have views dominated by the Project. To most effectively reduce contrast on views from these residences, the Project should be located closer to the existing transmission line so they would

be viewed in context with each other. For additional analysis, refer to the contrast rating worksheet for KOP #109 and the associated visual simulation in Appendix N.

Alternative COUT-B in Utah would have similar impacts on views from dispersed residences in Sanpete and Juab valleys and along the U.S. Highway 89 corridor. High impacts are anticipated on views from a pair of residences east of U.S. Highway 191 in Emma Park where the Project would be viewed from less than 0.5 mile at the edge of the Roan Cliffs. To most effectively reduce visual contrast on these views, the Project would need to be relocated farther south, which would decrease the dominance of the Project in the residences' viewshed. High impacts also would occur on views from clusters of residences located in Spanish Fork Canyon, including Soldier Summit, where the Project would be located less than 0.5 mile from an existing lower voltage transmission line. In locations where the residences would view the existing transmission line from a closer distance than the Project, impacts were assessed to be at a moderate level. To reduce contrast on views from these residences, selective mitigation measures would be applied, including minimizing ground disturbance from the construction of access roads in steeply rolling terrain and limiting vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #22 in Appendix N.

Travel Routes

High impacts would occur at both locations where the Project crosses the Dinosaur Diamond Scenic Byway (U.S. Highway 40) across the North Myton Bench and Duchesne River Valley. Both highway crossings are in locations where the Project is in proximity to existing lines, but either due to distance from the existing line (North Myton Bench) or paralleling a lower voltage transmission line (Duchesne River), the Project would dominate views from the scenic road. Selective mitigation measures would be applied to decrease visual contrast, including minimizing ground disturbance from the construction of access roads and maximizing the span length between transmission line structures at the highway crossing to reduce the dominance of the structures in the viewshed. For additional analysis, refer to the contrast rating worksheet for KOP #103 in Appendix N.

Views from U.S. Highway 191, designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways, would have a high level of visual impacts where the Project crosses the scenic road at the base of the Roan Cliffs. To reduce contrast on views from the scenic road, selective mitigation measures would be applied to limit ground disturbance generated by access road construction and to maximize the span length at the road crossing. High impacts would occur where the Project crosses the Energy Loop Scenic Byway adjacent to an information kiosk associated with the scenic byway in a rolling, sagebrush-dominated landscape. To reduce contrast on views from the scenic road and information kiosk, selective mitigation measures would be applied to maximize the distance between transmission structures at the road crossing to diminish visual dominance of the structures.

Moderate impacts are anticipated on long-duration views of the Project from U.S. Highway 6 where the Project would be located adjacent to an existing lower voltage transmission line less than 0.5 mile from the highway. West of Tucker, two additional existing transmission lines also would be paralleled and have already modified the existing landscape character; therefore, impacts on views from the highway were assessed to be at a low level. Selective mitigation measures would be applied in the areas of moderate impact to reduce contrast, including limiting ground disturbance associated with the construction of access roads in rolling terrain and minimizing vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #216 in Appendix N.

Recreation Areas

Alternative COUT-B in Utah would have similar impacts associated with the Green River and dispersed recreation as Alternative COUT-A, except for impacts on Camp Timberlane. High impacts are associated on views from Camp Timberlane where the Project crosses and is in proximity to this camp. To reduce contrast produced by the Project, selective mitigation would be applied to limit ground disturbance associated with construction access roads in steep terrain and minimize vegetation clearing in the right-of-way to the Project practicable.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

The Utah portion of Alternative COUT-B in Utah would be compliant with VRM Class III and IV objectives for BLM-administered lands.

U.S. Forest Service Visual Quality Objectives

Ashley National Forest

The Project would meet the definition of a modification VQO where this objective would be crossed in the Ashley National Forest. An existing lower voltage transmission line that has modified the existing landscape character is located adjacent to the Project. The Project would borrow form, line, color, and texture from the existing transmission line, but the Project would visually dominate the character of these landscapes.

Uinta-Wasatch-Cache National Forest

The Project would meet the definition of a modification VQO where this objective would be crossed in the Uinta-Wasatch-Cache National Forest. Since the Project parallels several existing transmission lines with similar design characters, after application of selective mitigation measures, the Project would borrow from the landscape's established form, line, color, and texture. In most locations, due to the presence of multiple existing transmission lines, the Project also would meet the definition of a partial retention VQO, except for the area adjacent to the Tie Fork Rest Area on U.S. Highway 6 (Link U530 between Mileposts 7.6 and 7.9 and Link U533 between Mileposts 0.0 and 0.1)). In this area, the Project would be located adjacent to the rest area with views of the existing transmission lines screened by topography. Therefore, the Project would dominate the characteristic landscape. The Project would not meet the definition of a retention VQO (Link U460 between Mileposts 1.1 and 1.2) where the Project parallels an existing transmission line south of U.S. Highway 6 in an area also visually influenced by other existing transmission lines north of the highway.

Manti-La Sal National Forest

The Project would not meet the definition of a partial retention VQO where this objective would be crossed in the Manti-La Sal National Forest, as the influence of the existing transmission line would not be enough for the Project to be subordinate to the existing landscape character.

U.S. Forest Service Land and Resource Management Plan Conformance

Ashley National Forest

In the 1986 Ashley National Forest LRMP, a forest-wide standard states that the forest will manage visual resources according to the adopted VQOs. Since the Project would be in compliance with the modification VQOs crossed in the Ashley National Forest, the Project would conform to the LRMP.

Uinta National Forest

The 2003 Uinta National Forest LRMP includes the following standard and guideline in reference to scenery management:

- Standard: Safety concerns will supersede objectives for scenery when vegetative manipulation, signing, etc. is needed to ensure public safety.
- Guideline: Forest resource uses or activities should meet the assigned objectives for scenery management as displayed on the map for each management area.

The Project would not conform with the guideline since the Project would not meet the definition of a retention VQO in a small area and a partial retention VQO adjacent to the Tie Fork Rest Area. Alternative COUT-B in Utah would be completely located in a designated utility corridor across the Uinta-Wasatch-Cache, including the area adjacent to the Tie Fork Rest Area. The noncompliance with partial retention VQOs stems from the Project not being located directly adjacent to the existing transmission line, as well as the geometric forms produced by right-of-way vegetation clearing. Since the reason for this noncompliance with retention and partial retention VQOs is based on safety requirements that include WECC reliability standards for separation between transmission lines and the NERC transmission vegetation management program, the Project would conform to the scenery management standard.

Manti-La Sal National Forest

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. For the GWR Management Unit, direction is given for activities that meet the VQO except where habitat improvement activities occur. The Project traverses the GWR Management Unit in a partial retention VQO where the Project would not be consistent with the definition of this objective (Link U621, between Mileposts 3.4 and 4.3). As such, a potential amendment to the Manti-La Sal National Forest LRMP was identified and is discussed further in Chapter 5.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Scenery

Alternative COUT-C in Colorado cross similar scenery as Alternative COUT-A for 1.0 miles of Class B scenery and 24.0 miles of Class C scenery.

Viewing Locations

Viewing locations along Alternative COUT-C in Colorado are similar to Alternative COUT-A, except that the Dinosaur Diamond Scenic Byway would be crossed by Link C188 and views from the Dinosaur National Monument Canyon Visitor Center would be of Links C186 and C188.

KOPs specific to Alternative COUT-C in Colorado include:

- #210: Dinosaur residential
- #211: Dinosaur Visitor Center [simulation]
- #239: Dinosaur Diamond Scenic Byway (Colorado State Highway 64)

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-C in Colorado crosses 18.1 miles of BLM-administered land with 0.1 mile in VRM Class II and 18.0 miles in VRM Class III in the BLM White River Field Office. The VRM Class III lands associated with this alternative route are similar to Alternative COUT-A.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-C in Colorado crosses 25.0 miles in a Class C landscape in the BLM White River Field Office. The following SQRUs were inventoried in the visual study area for this alternative route:

Class B SQRUs
- Bull Canyon/Willow Creek WSA
- Coal Ridge
- Coal Rim
- Raven Ridge
- Skull Creek

Class C SQRUs
- Dripping Rock Creek[1]
- M.F. Mountain[1]
- Mormon Gap

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-C in Colorado crosses 25.0 miles of moderate sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

Moderate SLRUs
- Coal Oil Rim
- Skull Creek
- White River West

Distance Zones

Alternative COUT-C in Colorado would be completely located in the foreground-middleground distance zone.

Visual Resource Inventory Classes

Alternative COUT-C in Colorado crosses 25.0 miles in VRI Class IV in the BLM White River Field Office.

Environmental Consequences (Colorado)

Scenery

Alternative COUT-C in Colorado would have similar impacts on scenery as Alternative COUT-A.

Viewing Locations

Alternative COUT-C in Colorado would have similar impacts on viewing locations as Alternative COUT-A, except for impacts associated with views from the Dinosaur National Monument Canyon Visitor Center. Low impacts are anticipated on views from the visitor center since the Project would be mostly screened from view by a ridge south of U.S. Highway 40.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-C in Colorado would be compliant with VRM Class III lands.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-C in Colorado would have similar effects on BLM SQRUs as those discussed for Alternative COUT-A (Table 3-255).

Affected Environment (Utah)

Scenery

Alternative COUT-C in Utah crosses similar scenery as Alternative COUT-A from Thistle, located at the intersection of U.S. Highways 6 and 89 in Spanish Fork Canyon, to the terminus of the Project at the Clover Substation. From the Colorado/Utah border to the West Tavaputs Plateau, the Project crosses landscapes typical of the Uinta Basin physiographic section characterized by level to rolling benches separated by small rocky escarpments. The landscapes along Links U242, U280, U285, U300, and U400 have been modified through extensive oil and gas development that begin to dominate the landscape character. A key landscape crossed by the Project along Link U400 is the Green River (Class A), which has been given a tentative classification of scenic as an eligible WSR section and is located in the Lower Green River Corridor ACEC that was established to protect sensitive scenic resources. Except for a series of pipelines that have modified the form, line, color, and texture of the existing vegetation, scenery adjacent to the Green River has an intact landscape character. This character is defined by the effect of water on an otherwise arid landscape that has produced a dense band of riparian vegetation and a canyon with layers of exposed rock strata.

As the Project ascends the West Tavaputs Plateau, Links U400 and U401 are located at the top of the Bad Land Cliffs. The Bad Land Cliffs (Class B) are characterized by a steep, dissected escarpment that descends from the West Tavaputs Plateau into Argyle Canyon. Links U401 and U404 cross the Bad Land Cliffs through very steep slopes with predominately pinyon-juniper vegetation. Link U404, at the base of the Bad Land Cliffs, would enter Argyle Canyon (Class A) on Link U404 via Lears Canyon, a side canyon of Argyle Canyon. The character of Argyle Canyon, especially in this area, is defined by the riparian corridor containing cottonwood trees and canyon walls with stands of Douglas-fir. Flood irrigation fields located adjacent to Argyle Creek have modified the existing character of the landscape but have also developed a rural character due to the juxtaposition of the irrigated agricultural lands, natural lands, and a single ranch residence. On Link U411, the Project ascends the south side of Argyle Canyon onto Argyle Ridge, contained in the West Tavaputs Plateau landscape (Class B). This portion of the West Tavaputs Plateau contains a variety of vegetation communities, including pinyon-juniper, aspen, mixed conifer, and sagebrush across very steep slopes. Descending from the West Tavaputs Plateau, the Project parallels the edge of the Roan Cliffs until Soldier Summit. West of Soldier Summit, the Project would parallel U.S. Highway 6 adjacent to existing transmission lines through Spanish Fork Canyon to Thistle. As described for the Colorado portion of this alternative route, a rural landscape character is a key feature of many of the landscapes crossed. Alternative COUT-C crosses 1.8 miles of Class A scenery, 115.1 miles of Class B scenery, 73.8 miles of Class C scenery, and 0.7 mile of developed land.

Viewing Locations

Residences

An individual residence in Argyle Canyon (high concern viewer) is located approximately 0.1 mile from the Project and would have views of Link U413. Dispersed rural residences are concentrated in six areas

along Alternative COUT-C in Utah: (1) Minnie Maud Creek/Ridge, (2) U.S. Highway 191 corridor, (3) Spanish Fork Canyon, (4) U.S. Highway 89 corridor, (5) Sanpete Valley, and (6) Juab Valley.

Travel Routes

Designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways (associated with high concern viewers), U.S. Highway 191 would be crossed by Link U514 in the Roan Cliffs. The Energy Loop Scenic Byway (associated with high concern viewers) would have views of the Project near the intersection of U.S. Highway 6 and Utah State Route 96 where Link U530 crosses the scenic road. Link U401 crosses the Nine Mile Canyon Scenic Backway 25 miles south of Myton at the top of the Bad Land Cliffs. U.S. Highway 6 (moderate concern travel route) would have views of the Project on Links U560, U530, U539, and U460 where the highway would be paralleled for approximately 25 miles. Sand Wash Road, which provides access to Sand Wash Ranger Station and Green River Desolation Canyon Put In (associated with high concern viewers), would be crossed by Link U400 approximately 25 miles south of Myton.

Recreation Areas

The Green River (and associated Lower Green River Eligible WSR and Lower Green River Corridor ACEC) would have views of the Project where Link U400 crosses the river north of Fourmile Bottom. Link U300 crosses the White River in an area south of the Enron Recreation Site at the south end of the Chapita Wells Gas Field. Two recreation camps, Camp Timberlane and Crescent Regional Recreation Camp, would have views of the Project on Links U445 and U516, respectively. Dispersed recreation opportunities located across BLM-, USFS-, and state-administered lands include big game hunting, camping, fishing, geocaching, hiking, and many others.

Special Designations

The Nine Mile Canyon ACEC would have mostly screened views of the Project on Links U400, U401, and U404 from approximately 0.5 mile away.

KOPs specific to Alternative COUT-C in Utah include:

- #22: Soldier Summit
- #36: Birdseye residential
- #86: Utah State Route 45 (north of Bonanza)
- #87: Enron Recreation Area (on White River) [simulation]
- #88: Fantasy Canyon
- #131: Mount Nebo Loop Scenic Byway
- #200: Argyle Canyon Road [simulation]
- #203: Fourmile Bottom [simulation]
- #204: Nephi residential
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #216: U.S. Highway 6 (west of Soldier Summit)
- #265: I-15 (Nephi) [simulation]
- #266: U.S. Highway 6 (Spanish Fork Canyon) [simulation]
- #272: Sand Wash North Destination Route [simulation]
- #273: Nine Mile Canyon Scenic Backway

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-C in Utah crosses 75.9 miles of BLM-administered land with 3.0 miles in VRM Class II, 23.4 miles in VRM Class III, and 49.5 miles in VRM Class IV in the BLM Vernal, Price, Salt Lake, Richfield, and Fillmore Field Offices. The VRM Class II lands associated with this alternative route are located adjacent to Raven Ridge and the Green River. Landscapes associated with VRM Class III include lands adjacent to Raven Ridge, Willow Creek, Nine Mile Canyon Backcountry Byway, Argyle Canyon, U.S. Highway 191, Fountain Green, Utah State Route 132, and Mona.

U.S. Forest Service Visual Quality Objectives

Alternative COUT-C in Utah crosses 8.8 miles of USFS-administered lands in the Uinta-Wasatch-Cache and Manti-La Sal National Forests. On the Uinta-Wasatch-Cache National Forest, 0.1 mile crosses a retention VQO, 6.0 miles crosses a partial retention VQO, and 1.7 miles crosses a modification VQO. The Project crosses 1.0 mile in a partial retention VQO on the Manti-La Sal National Forest.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-C in Utah crosses 71.3 miles of Class A, 42.7 miles of Class B, and 58.1 miles of Class C landscapes in the BLM Vernal, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Argyle Creek[1]
- Green River/Book Cliffs[1]
- Jack Canyon WSA[1]
- South Green River[1]
- Spanish Fork Canyon[1]
- White River[1]

Class B SQRUs
- Beaver Ridge
- Bitter Creek Canyon
- Blue Mountain Valley
- Dog Valley[1]
- Emma Park
- Gilsonite Draw[1]
- Kyune
- Red Wash/Kennedy Wash/Devil's Playground[1]
- San Pitch Mountains[1]
- Sanpete Valley[1]
- Squaw Ridge[1]
- The Book Cliffs
- Wrinkles Road[1]

Class C SQRUs
- Apple Spring[1]
- Bonanza[1]
- Cottonwood Wash[1]
- Deadman's Bench[1]
- East Bench[1]
- Little Desert[1]
- Pariette Bench
- Sand Spring Wash[1]
- Sand Wash[1]
- Tabaygo Canyon[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-C in Utah crosses 57.6 miles of high sensitivity, 72.9 miles of moderate sensitivity, and 41.6 miles of low sensitivity lands.

The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs	Moderate SLRUs	Low SLRUs
■ Green River Lower Segment	■ Book Cliffs	■ Eightmile Flat
■ Nine Mile Backway	■ I-15	■ Full-Field Development Area
■ West Book Cliffs	■ Spanish Fork Canyon	■ San Pitch Mountains
	■ White River	■ Sanpete Valley

Distance Zones

Alternative COUT-C in Utah route crosses 169.3 miles in the foreground-middleground distance zone and 13.8 miles in the background distance zone.

Visual Resource Inventory Classes

Alternative COUT-C in Utah crosses 72.3 miles of VRI Class II, 27.5 miles in VRI Class III, and 62.8 miles in VRI Class IV in the Vernal, Price, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with the White River, Green River, Nine Mile Canyon, Argyle Canyon, the Roan Cliffs, and Spanish Fork Canyon.

Environmental Consequences (Utah)

Scenery

Effects of the Project on the rural character of landscapes associated with Alternative COUT-C in Utah would be similar to those discussed for the Colorado portion of this route.

Across this alternative route, most impacts on scenery are anticipated to be moderate to low with two areas of high impacts. Generally, moderate impacts would occur in the more distinctive Class B landscapes where the construction of access roads and tower pads, right-of-way vegetation clearing, and the addition of transmission structures would modify the existing landscape character. High impacts on the Green River landscape, which also is designated as an ACEC to protect scenic resources, would occur in a localized area where the Project crosses this largely intact landscape, primarily as a result of the introduction of transmission line structures and the sweeping line produced by the conductors that would modify the existing landscape character. To reduce modifications to the landscape character, selective mitigation measures would be applied, including minimizing ground disturbance associated with access road and tower pad construction and maximizing the span length between transmission line structures at the river crossing to reduce their dominance in the Green River landscape.

High impacts also would occur where the Project traverses steep areas in the Bad Land Cliffs, Argyle Canyon, and Tavaputs Plateau landscapes. The existing landscape character would be modified from the construction of access roads and tower pads, right-of-way vegetation clearing, and the introduction of transmission line structures in rugged landscapes with limited cultural modifications. To reduce contrast with the existing landscape character, selective mitigation measures would be applied, including minimizing ground disturbance from access road and tower pad construction, decreasing color contrast from earthwork by blending underlying soil color with the surface soil color, and limiting vegetation clearing in the right-of-way to the extent practicable.

Viewing Locations

Residences

Views from a single residence in Argyle Canyon (and adjacent Argyle Canyon Road) would have a high level of impact where the Project would be located 0.25 mile away at the base of the canyon wall. Due to the proximity of the Project to this viewing location, the Project would dominate views in a landscape with few visible cultural modifications. There are limited opportunities to mitigate these impacts as the Project would be located to avoid crossing the Lears Canyon ACEC; any adjustments out of the canyon floor would move the Project into extremely steep terrain, further increasing visual contrast. Selective mitigation was applied to span the canyon, to the extent practicable, to reduce visibility from this residence. For additional analysis, refer to the contrast rating worksheet for KOP #200 and the associated visual simulation in Appendix N.

High impacts are anticipated on views from dispersed residences along Minnie Maud Creek and adjacent to U.S. Highway 191 where the Project would be located within 0.5 mile of these residences in a steep forested landscape with few cultural modifications. To reduce contrast produced by the Project, selective mitigation measures would be applied to limit ground disturbance associated with construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable.

Impacts associated with dispersed residences in Spanish Fork Canyon, the U.S. Highway 89 corridor, Sanpete Valley, and Juab Valley are the same as Alternative COUT-B.

Travel Routes

Alternative COUT-C in Utah would have similar impacts associated with U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways), Energy Loop Scenic Byway, and U.S. Highway 6 as Alternative COUT-B. U.S. Highway 191 would be crossed farther to the north in steeper terrain than Alternative COUT-B. To reduce contrast produced by the Project in steeper forested terrain, selective mitigation measures would be applied to limit ground disturbance associated with construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. Views from U.S. Highway 6 would be shorter in duration than Alternative COUT-B since the Project would begin to parallel the highway at Soldier Summit instead of near Kyune.

High impacts would occur on views from the Nine Mile Canyon Scenic Backway where the Project crosses the scenic road at the top of the Bad Land Cliffs, introducing several skylined transmission structures that would dominate views. To reduce visual contrast, selective mitigation measures would be applied to limit vegetation clearing in the right-of-way and maximize the span length at the road crossing to the extent practicable to decrease dominance of the Project on these views. To more effectively reduce contrast, the Project should be located farther north off of the ridge to provide backdropping for transmission line structures, which would decrease the dominance of the Project in this viewshed. For additional analysis, refer to the contrast rating worksheet for KOP #273 in Appendix N.

High impacts are anticipated on views from Sand Wash Road (access to Sand Wash Ranger Station and Green River Desolation Canyon Put In) where the Project crosses the road in a rolling sagebrush-dominated landscape. To decrease contrast on these views, selective mitigation measures would be applied to maximize the distance between transmission line structures at the crossing to reduce their visual dominance. For additional analysis, refer to the contrast rating worksheet for KOP #272 and the associated visual simulation in Appendix N.

Recreation Areas

High impacts would occur on views from the Green River (and associated Lower Green River Eligible WSR and Lower Green River Corridor ACEC) where the Project crosses the river over steep canyon walls. To reduce contrast on these views, selective mitigation measures would be applied, including limiting the construction of new access roads in view of the river, minimizing ground disturbance associated with construction of access roads, and positioning transmission line structures where they would be backdropped as viewed from the river. For additional analysis, refer to the contrast rating worksheet for KOP #203 and the associated visual simulation in Appendix N.

Impacts associated with the White River, including the Enron Recreation Site, are anticipated to be at a high level where the Project crosses the river over steep canyon walls. Selective mitigation measures would be applied to reduce contrast, including limiting the construction of new access roads adjacent to the river to the extent practicable, minimizing ground disturbance from access road construction, and maximizing the span length between transmission towers at the river crossing to diminish their dominance on these views. For additional analysis, refer to the contrast rating worksheet for KOP #87 and the associated visual simulation in Appendix N.

Impacts on views from Camp Timberlane are anticipated to be at a low level since the Project would be screened from view due to the steep terrain, and approximate 3 mile distance, between the camp and the Project. Effects on views resulting from other route variations are described in Appendix F. High impacts are anticipated on views from Crescent Regional Recreation Camp where the Project would be visible from approximately 0.75 mile away, south of the camp and ridgeline, crossing through steep forested terrain. To reduce contrast produced by the Project, selective mitigation measures would be applied to limit ground disturbance associated with construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable.

As described in the Colorado portion of Alternative COUT-C, impacts on views from dispersed recreation vary based on the level of contrast produced by the Project as compared to the existing landscape features, as well as the distance from which the Project would be viewed.

Special Designations

Low impacts are anticipated on views from the majority of the Nine Mile Canyon ACEC where views of the Project would be screened by topography, including the Bad Land Cliffs. An area of high impact was identified where the Project would be located within 0.5 mile of the ACEC as views from a side canyon may include skylined transmission structures. To minimize the visibility and increase screening of the structures in this landscape, selective mitigation measures would be applied to limit vegetation clearing in the right-of-way to the extent practicable.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 75.9 miles of BLM-administered land crossed by Alternative COUT-C in the BLM Vernal, Price, Richfield, and Fillmore Field Offices, 3.4 miles not in compliance with VRM Class II and III objectives, including:

- Enron Recreation Area (Vernal Field Office) – Noncompliance with VRM Class III objectives would occur where the Project would be viewed crossing the river in a natural landscape setting. Oil and gas development has modified the character of the landscapes on either side of the river; however, since views from the river occur in an enclosed landscape setting, these modifications are for the most part not visible from the river. Views from the recreation site would be

dominated by the Project, including the introduction of skylined transmission line structures and earthwork associated with access road and tower pad construction in steeply dissected terrain. For more information refer to Contrast Rating Worksheet #87.

- Fourmile Bottom-Green River (Vernal Field Office) – Noncompliance with VRM Class II objectives would occur where the Project would be viewed crossing the Green River in an intact natural canyon landscape setting. Views from the river would be dominated by the Project, including the introduction of skylined transmission line structures and conductors, and earthwork associated with access road and tower pad construction in rugged terrain. For more information refer to Contrast Rating Worksheet #203.
- Nine Mile Canyon Scenic Backway (Vernal Field Office) – Noncompliance with VRM Class III objectives would occur where the Project crosses the backway in a natural landscape setting. Views from the road would be dominated by the Project, including the introduction of skylined transmission line structures and conductors, and earthwork associated with access road and tower pad construction in steep terrain for 1 mile (approximately 2 minutes at 30 mph). For more information refer to Contrast Rating Worksheet #273.
- Argyle Canyon Road (Vernal Field Office) – Noncompliance with VRM Class III objectives would occur where the Project parallels the road and traverses rugged canyon walls in a natural landscape setting. Views from the road would be dominated by the Project, including the introduction of skylined transmission line structures, earthwork associated with access road and tower pad construction, and right-of-way vegetation clearing for 3 miles (approximately 6 minutes at 30 mph). For more information refer to Contrast Rating Worksheet #200.

U.S. Forest Service Visual Quality Objectives

Uinta-Wasatch-Cache National Forest

The Project would meet the definition of a modification VQO where this objective would be crossed in the Uinta-Wasatch-Cache National Forest. Since the Project parallels several existing transmission lines with similar design characters, after application of selective mitigation measures, the Project would borrow from the landscape's established form, line, color, and texture. In most locations, due to the presence of multiple existing transmission lines, the Project also would meet the definition of a partial retention VQO, except for the area adjacent to the Tie Fork Rest Area on U.S. Highway 6 (Link U530 between Mileposts 7.6 and 7.9 and Link U533 between Mileposts 0.0 and 0.1). In this area, the Project would be located adjacent to the rest area with views of the existing transmission lines screened by topography. Therefore, the Project would dominate the characteristic landscape. The Project would not meet the definition of a retention VQO (Link U460 between Mileposts 1.1 and 1.2) where the Project parallels an existing transmission line south of U.S. Highway 6 in an area also visually influenced by other existing transmission lines north of the highway.

Manti-La Sal National Forest

The Project would not meet the definition of a partial retention VQO where this objective would be crossed in the Manti-La Sal National Forest, as the influence of the existing transmission line would not be enough for the Project to be subordinate to the existing landscape character.

U.S. Forest Service Land and Resource Management Plan Conformance

Uinta National Forest

The 2003 Uinta National Forest LRMP includes the following standard and guideline in reference to scenery management:

- Standard: Safety concerns will supersede objectives for scenery when vegetative manipulation, signing, etc. is needed to ensure public safety.
- Guideline: Forest resource uses or activities should meet the assigned objectives for scenery management as displayed on the map for each management area.

The Project would not conform with the guideline since the Project would not meet the definition of a retention VQO in a small area and a partial retention VQO adjacent to the Tie Fork Rest Area. The noncompliance with retention and partial retention VQOs stems from the Project not being located directly adjacent to the existing transmission line, and from geometric forms produced by right-of-way vegetation clearing. Since the reason for this noncompliance with partial retention VQOs is based on safety requirements, including WECC reliability standards for separation between transmission lines and the NERC transmission vegetation management program, the Project would conform to the scenery management standard.

Manti-La Sal National Forest

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. For the GWR Management Unit, direction is given for activities that meet the VQO except where habitat improvement activities occur. The Project traverses the GWR Management Unit in a partial retention VQO where the Project would not be consistent with the definition of this objective (Link U621, between Mileposts 3.4 and 4.3). As such, a potential amendment to the Manti-La Sal National Forest LRMP was identified and is discussed further in Chapter 5.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-C in Utah would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs (Table 3-256). These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape.

Scenery associated with Alternative COUT-C consists of desert flats, riparian/river corridors, large basins/valleys, mountainous landscapes, dissected steep slopes, and canyons. Cultural modifications consist of oil and gas development and pipelines, some rural/agricultural development generally concentrated in basins/valley, and transmission lines. The White River SQRU (Class A) would be crossed by the Project in an area adjacent to oil and gas development (included on the scenic quality rating worksheet). The South Green River SQRU (Class A) would be crossed by the Project in a remote area adjacent to an existing pipeline corridor and oil and gas development (not included on the scenic quality rating worksheet). The Argyle Creek SQRU (Class A) would be crossed and/or influenced by this alternative route, which crosses the SQRU near U.S. Highway 191 in mountainous terrain adjacent to cabin development. The Jack Canyon WSA and Green River/Book Cliffs SQRUs (Class A) would be crossed and/or influenced by this alternative route in steep, dissected mountainous terrain adjacent to areas of cabin development. The Spanish Fork Canyon (Class A) would be crossed by this alternative route in varying steep and rugged mountainous terrain and canyons adjacent to existing transmission lines (included on the scenic quality rating worksheet).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The landscapes traversed by the relocation of the Bears Ears to Bonanza 345kV transmission line would be similar to those described for Alternative COUT-C and those currently crossed by this existing transmission line. Scenery is typical of the Uinta Basin section of the Colorado Plateaus physiographic province with Raven Ridge being the prominent landscape feature crossed. The existing location of the Bears Ears to Bonanza 345kV transmission line currently influences these landscapes and as such, low impacts on scenery are anticipated since the relocation would not substantially change this level of influence. There are few viewing locations in proximity to the proposed 345kV transmission line relocation, and those viewers within 2 miles of this portion of the Project would have their view mostly screened. Due to this limited visibility and the weak level of contrast from the existing conditions, low impacts on views are anticipated. The relocation of the Bears Ears to Bonanza 345kV transmission line would occur in VRM Class II and III lands; but due to the limited level of visual contrast compared to the existing condition, this relocation would be in compliance with VRM class objectives.

As inventoried by the BLM, these facilities would be located in the following components of the White River and Vernal field office VRIs:

- Scenic Quality: Squaw Ridge (Class B), Deadman's Bench (Class C), Sand Spring Wash (Class C), and Dripping Rock Creek SQRU (Class C)
- Sensitivity Level Rating Units: Coal Oil Rim (moderate sensitivity) and Full-Field Development Area (low sensitivity)
- Distance Zones: Foreground/middleground
- VRI Classes: VRI Class IV

Alternative COUT-H

Affected Environment (Colorado)

Scenery

Alternative COUT-H in Colorado crosses the same scenery as Alternative COUT-C.

Viewing Locations

Viewing locations along Alternative COUT-H in Colorado are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Federal agency visual management objectives for Alternative COUT-H in Colorado are the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes for Alternative COUT-H in Colorado are the same as Alternative COUT-C (Table 3-255).

Environmental Consequences (Colorado)

Scenery

Alternative COUT-H in Colorado would have similar impacts on scenery as Alternative COUT-A.

Viewing Locations

Alternative COUT-H in Colorado would have the same impacts on viewing locations as Alternative COUT-C.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative COUT-H in Colorado is the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-H in Colorado would have the same effects on BLM SQRUs as Alternative COUT-C.

Affected Environment (Utah)

Scenery

Alternative COUT-H in Utah crosses similar scenery as Alternative COUT-C from the Utah/Colorado border to Emma Park. From Emma Park, this alternative route would turn southwest and enter Willow Creek Canyon, then cross Price Canyon approximately 1 mile from the Carbon Power Plant. West of Helper, the Project would ascend the Wasatch Plateau into the Manti-La Sal National Forest. The Wasatch Plateau (Class B), characterized by mountainous subalpine forests, would be crossed by the Project for approximately 20 miles on Link U600 to the community of Fairview. In the Wasatch Plateau, there are high altitude parks (Class A) characterized by dense groves of aspen trees surrounded by sagebrush-dominated plains containing several small lakes. From Fairview to Nephi, the Project crosses low, rolling hills with scattered pinyon-juniper vegetation until it enters Salt Creek Canyon (Class B) north of Fountain Green, adjacent to several transmission lines. From Nephi to the Mona Substation, the Project crosses sagebrush-dominated basin landscapes (Class C) in Juab Valley along Link U650. As described for the Colorado portion of this alternative route, a rural landscape character is a key feature of many of the landscapes crossed. Alternative COUT-H in Utah crosses 5.6 miles of Class A scenery, 85.7 miles of Class B scenery, 84.0 miles of Class C scenery, and 0.3 mile of developed land.

Viewing Locations

Viewing locations along Alternative COUT-H in Utah are similar to Alternative COUT-C from the Utah/Colorado border to Emma Park.

Residences

High concern residential viewers in the communities of Helper (Links U545 and U546), Clear Creek (Link U600), and Fairview (Links U600 and U636) would have views of the Project. Dispersed rural residences are generally located in four areas along Alternative COUT-H in Utah: (1) Minnie Maud Creek, (2) summer homes on the Wasatch Plateau, (3) Sanpete Valley, and (4) Juab Valley.

Travel Routes

U.S. Highway 191, between Duchesne and Castle Gate, is designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways and would be paralleled for 5 miles by Link U435. The Project also crosses another portion of the Dinosaur Diamond Scenic Byway, on U.S. Highway 6 north of Helper on Link U545. The Energy Loop Scenic Byway would be crossed by the Project five times (Link 600) as the scenic route traverses the Wasatch Plateau from Huntington to Fairview. The northern portion of Skyline Drive Scenic Backway starts at the intersection of Utah State Routes 31 and 264 and would have views of the Project from 0.3 mile away on Link U600.

Recreation Areas

A portion of the Carbon County Multi-Use Trail System, the Western Loop (associated with moderate concern viewers) would be crossed and paralleled by Links U546, U548, and U600 between Helper and the Manti-La Sal National Forest boundary. Dispersed recreationists on the Wasatch Plateau, mostly in the Manti-La Sal National Forest, would have views of the Project along Link U600. Dispersed recreation opportunities are located across BLM-, USFS-, and state-administered lands, including big game hunting, camping, fishing, geocaching, hiking, and many others.

KOPs specific to Alternative COUT-H in Utah include:

- #28: Fairview Lakes Overlook-The Energy Loop Scenic Byway
- #30: Electric Lake
- #86: Utah State Route 45 (north of Bonanza)
- #87: Enron Recreation Area (on White River) [simulation]
- #88: Fantasy Canyon
- #131: Mount Nebo Loop Scenic Byway
- #196: Fairview Lakes residential
- #200: Argyle Canyon Road [simulation]
- #203: Fourmile Bottom [simulation]
- #204: Nephi residential
- #208: West Helper residential [simulation]
- #212: Fairview residential
- #213: Clear Creek residences
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #258: Martin residential
- #259: Energy Loop Scenic Byway (Utah State Route 96)
- #260: Energy Loop Scenic Byway (Utah State Route 31) [simulation]
- #261: Fairview residential [simulation]
- #265: I-15 (Nephi) [simulation]
- #272: Sand Wash North Destination Route [simulation]
- #273: Nine Mile Canyon Scenic Backway
- #274: Indian Canyon Scenic Byway (U.S. Highway191) [simulation]
- #283: Energy Loop Scenic Byway (Utah State Route 31)
- #284: Energy Loop Scenic Byway (Utah State Route 264) [simulation]
- #307: Energy Loop Scenic Byway (Utah State Route 264)

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-H in Utah crosses 76.9 miles of BLM-administered land with 3.0 miles in VRM Class II, 24.3 miles in VRM Class III, and 49.6 miles in VRM Class IV in the BLM Vernal, Price, Richfield, and Fillmore Field Offices. The VRM Class II and III lands associated with this alternative route are similar to Alternative COUT-C.

U.S. Forest Service Visual Quality Objectives

Alternative COUT-H in Utah crosses 7.7 miles of USFS-administered lands in the Manti-La Sal National Forest, all in a partial retention VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-H in Utah crosses 26.9 miles of Class A, 72.7 miles of Class B, and 65.2 miles of Class C landscapes in the BLM Vernal, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Argyle Creek[1]
- Ford Ridge
- Green River/Book Cliffs[1]
- Jack Canyon WSA[1]
- South Green River[1]
- White River[1]

Class B SQRUs
- Blue Mountain Valley
- Dog Valley[1]
- Emma Park[1]
- Gilsonite Draw[1]
- Manti-La Sal[1]
- Red Wash/Kennedy Wash/ Devil's Playground[1]
- San Pitch Mountains[1]
- Sanpete Valley[1]
- Squaw Ridge[1]
- The Book Cliffs[1]
- The Book Cliffs Bench
- The Western Bench[1]
- Wrinkles Road[1]

Class C SQRUs
- Apple Spring[1]
- Bonanza[1]
- Clark Valley and the Price River Valley[1]
- Cottonwood Wash[1]
- Deadman's Bench[1]
- East Bench[1]
- Little Desert[1]
- Pariette Bench
- Sand Spring Wash[1]
- Sand Wash[1]
- Tabaygo Canyon[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-H in Utah crosses 70.1 miles of high sensitivity, 40.6 miles of moderate sensitivity, and 60.1 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Green River Lower Segment
- Manti-LaSal
- Nine Mile Backway
- Nine Mile Canyon
- West Book Cliffs

Moderate SLRUs
- Book Cliffs
- I-15
- Indian Canyon
- Price, Helper, Wellington
- White River

Low SLRUs
- Eightmile Flat
- Full-Field Development Area
- Price Valley
- San Pitch Mountains
- Sanpete Valley

Distance Zones

Alternative COUT-H in Utah crosses 138.1 miles in the foreground-middleground distance zone, 26.8 miles in the background distance zone, and 10.4 miles in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT-H in Utah crosses 43.5 miles of VRI Class II, 44.0 miles in VRI Class III, and 72.4 miles in VRI Class IV in the BLM Vernal, Price, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with the White River, Green River, Nine Mile Canyon, Argyle Canyon, the Roan Cliffs, and Emma Park.

Environmental Consequences (Utah)

Scenery

Alternative COUT-H in Utah would have similar impacts as those discussed for Alternative COUT-C, except for the area between Helper and Fairview. Moderate impacts on the Book Cliffs landscape would occur where contrast produced by the construction of access roads and tower pads in rugged terrain, as well as the introduction of the transmission line structures, would modify the existing landscape character. Selective mitigation measures would be applied to reduce contrast, including minimizing ground disturbance associated with the construction of access roads and tower pads and limiting vegetation clearing in the right-of-way to the extent practicable.

High impacts on the Wasatch Plateau and Wasatch Plateau Parks landscapes are anticipated as a result of contrast produced through the modification of the existing landscape character, including the construction of access roads and tower pads in steep terrain, geometric vegetation forms from right-of-way clearing, and the introduction of transmission line structures into an area with limited cultural modifications. To reduce contrast resulting from the Project in these landscapes, selective mitigation measures would be applied, including minimizing ground disturbance associated with the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable.

Viewing Locations

Alternative COUT-H in Utah would have similar impacts on viewing locations as Alternative COUT-C from the Utah/Colorado border to Emma Park.

Residences

Impacts on views from residences in the community of Helper are anticipated to be at a high level where the Project would be located within 0.5 mile of residences traversing steep terrain. The Project would be viewed in context with an existing lower voltage transmission line that is located on the level terrain adjacent to Helper. To reduce contrast produced by the Project, selective mitigation measures would be applied, including minimizing ground disturbance associated with construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #208 and the associated visual simulation in Appendix N.

High impacts would occur on views from the community of Clear Creek as the Project traverses the steep, densely vegetated Wasatch Plateau where views of the Project would be partially screened from 0.5 mile away to the extent that only skylined transmission structures would be visible. To reduce contrast, selective mitigation measures would be applied to maximize distance between transmission line structures at the canyon crossing to limit the number of transmission line structures visible from Clear Creek. For additional analysis, refer to the contrast rating worksheet for KOP #213 in Appendix N.

Moderate impacts are anticipated on views from residences in Fairview where the Project would be located approximately 2 miles away, descending off of the Wasatch Plateau through primarily oak/maple vegetation. Selective mitigation measures would be applied to reduce contrast, including minimizing ground disturbance from the construction of access roads on steep terrain and limiting vegetation clearing in the right-of-way to the extent practicable to avoid producing geometric vegetation forms inconsistent with the existing landscape character. For additional analysis, refer to the contrast rating worksheet for KOP #261 and the associated visual simulation in Appendix N.

Views from summer homes on the Wasatch Plateau would have a high level of impact where the Project would be located less than 0.5 mile away traversing steep terrain vegetated with a variety of sub-alpine vegetation communities. Selective mitigation measures would be applied to reduce contrast, including

limiting ground disturbance associated with construction of access roads and minimizing right-of-way vegetation clearing to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #196 in Appendix N.

High impacts are anticipated on views from dispersed residences in Sanpete Valley north of Fairview where the Project would be located within 1.0 mile of residences in an agricultural landscape. Since the Project crosses through an area of dispersed residences, there are limited opportunities to relocate the Project without transferring impacts from one group of residences to another. In areas where the Project crosses steep terrain transitioning off of the Wasatch Plateau, selective mitigation measures would be applied to minimize disturbance associated with construction of access roads. Impacts on views from dispersed residences in Juab Valley would be similar to Alternative COUT-A.

Travel Routes

High impacts are anticipated on views from U.S. Highway 191, designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways, where the Project would parallel the highway traversing steep terrain in proximity to an existing lower voltage transmission line. To reduce contrast associated with constructing the Project in a steep forested landscape, selective mitigation measures would be applied to minimize ground disturbance associated with the construction of access roads and limit vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #274 and the associated visual simulation in Appendix N.

The Project crosses the Dinosaur Diamond Scenic Byway north of Helper in an area visually influenced by the Carbon Power Plant, a railroad corridor, and an existing lower voltage transmission line. Due to the existing cultural modifications viewed at this crossing, moderate impacts are anticipated. To further reduce contrast on these views, selective mitigation measures would be applied to minimize disturbance associated with access road construction and maximize the span length at the crossing to reduce visual dominance of the transmission structures in the viewshed.

High impacts would occur at each of the five locations where the Project crosses the Energy Loop Scenic Byway through steep terrain vegetated with a variety of sub-alpine vegetation types. To reduce contrast associated with each of these scenic road crossings, selective mitigation measures would be applied to minimize ground disturbance from the construction of access roads, limit vegetation clearing in the right-of-way, and maximize the span between transmission line structures; therefore reducing the dominance of the Project. For additional analysis, refer to the contrast rating worksheets for KOP #220 and #284 and the associated visual simulations in Appendix N.

Moderate impacts are anticipated on intermittently screened views of the Project from the Skyline Drive Scenic Backway, where the Project would be located within 1 mile of the scenic road traversing rolling terrain in the park-like landscape atop the Wasatch Plateau. Selective mitigation measures would be applied to reduce contrast, including limiting ground disturbance associated with the construction of access roads and minimizing vegetation clearing in the right-of-way to the extent practicable.

Recreation Areas

High impacts would occur on views from the Western Loop portion of the Carbon County Multi-Use Trail System where the Project would closely parallel and then cross the trail. To reduce contrast produced by the Project traversing steep terrain vegetated with pinyon-juniper, selective mitigation measures would be applied, including minimizing ground disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable.

As described in the Colorado portion of this alternative route, impacts on views from dispersed recreation vary based on the level of contrast produced by the Project as compared to the existing landscape features, as well as the distance from which the Project would be viewed.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 76.9 miles of BLM-administered land crossed by Alternative COUT-H in Utah in the BLM Vernal, Price, Richfield, and Fillmore Field Offices, 4.6 miles would not be in compliance with VRM Class II and III objectives, including:

- Enron Recreation Area (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.
- Fourmile Bottom-Green River (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.
- Nine Mile Canyon Scenic Backway (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.
- Argyle Canyon Road (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.

U.S. Forest Service Visual Quality Objectives

Since the Project traverses landscapes with few modifications and in proximity to several high concern viewers, the Project would not be visually subordinate to the existing landscape character. Therefore, the Project would not meet the definition of a partial retention VQO on the Manti-La Sal National Forest.

U.S. Forest Service Land and Resource Management Plan Conformance

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. As described above, the Project would not meet the definition of a partial retention VQO as it traverses the forest. Since the plan does not require that activities meet the adopted VQO, the Project would conform to the plan and the GWR Management Unit along Alternative COUT-H in Utah.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-H in Utah would locally affect scenic quality through the introduction of either new or additional cultural modifications in the SQRUs. These effects on scenic quality would include the modification of the existing landscape character through geometric right-of-way and structure pad vegetation clearing (more apparent in overstory vegetation, including pinyon-juniper and riparian communities), construction of access roads that would modify existing landforms through curvilinear lines and geometric forms associated with earthwork required for their construction, and a series of tall transmission structures creating a repeating rhythmic pattern across the landscape. Scenery associated with this alternative route is similar to that discussed for Alternative COUT-C. Effects on the White River, South Green River, Jack Canyon WSA, and Green River/Book Cliffs SQRUs (Class A) would be the same as those discussed for Alternative COUT-C. Effects on the Argyle Creek SQRU (Class A) would be the same as those discussed for the area east of U.S. Highway 191 for Alternative COUT-C (Table 3-256).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The affected environment and environmental consequences for the relocation of the Bears Ears to Bonanza 345kV transmission line on Alternative COUT-H would be the same as Alternative COUT-C.

Alternative COUT-I

Affected Environment (Colorado)

Scenery

Alternative COUT-I in Colorado crosses the same scenery as Alternative COUT-C.

Viewing Locations

Viewing locations along Alternative COUT-I in Colorado are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Federal agency visual management objectives for Alternative COUT-I in Colorado are the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes for Alternative COUT-I in Colorado are the same as Alternative COUT-C.

Environmental Consequences (Colorado)

Scenery

Alternative COUT-I would have the same impacts on scenery as Alternative COUT-C.

Viewing Locations

Alternative COUT-I would have the same impacts on viewing locations as Alternative COUT-C.

Federal Agency Visual Management Objectives

Compliance with federal agency visual management objectives for Alternative COUT-I in Colorado is the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-I would have the same effects on BLM SQRUs as Alternative COUT-C (Table 3-255).

Affected Environment (Utah)

Scenery

Alternative COUT-I in Utah crosses similar scenery as Alternative COUT-C from the Utah/Colorado border to Emma Park. The Project would then turn southeast across Emma Park and descend through the Book Cliffs along Coal Creek into Castle Valley, east of Price. The Book Cliffs (Class B scenery) is a distinctive landscape characterized by a rocky, continuous cliff face that stretches from Palisade, Colorado, to Price, Utah. By following Coal Creek, the steepest terrain in the Book Cliffs would be avoided on Link U523. On Links U492, U494, U493, U496, and U586, the Project crosses Castle Valley,

which is characterized by agricultural lands abutting arid, natural lands typical of the Canyon Lands physiographic section. The Project then ascends the Wasatch Plateau west of Huntington into the Manti-La Sal National Forest. The Wasatch Plateau (Class B scenery) is characterized by mountainous subalpine forests with high elevation parks and would be crossed by the Project for approximately 25 miles. In the Wasatch Plateau, the western ridgeline was delineated as the Wasatch Plateau Alpine landscape unit (Class A) due to the exposed rocky slopes not common in other portions of the Wasatch Plateau. The Project crosses this landscape on Link U630 parallel to an existing transmission line through steeply sloping terrain vegetated with dense conifer stands. From Mount Pleasant to Nephi, the Project crosses low, rolling hills with scattered pinyon-juniper vegetation until the Project enters Salt Creek Canyon (Class B), north of Fountain Green, adjacent to several transmission lines. From Nephi to the Clover Substation, the Project crosses sagebrush-dominated basin landscapes (Class C) in Juab Valley along Link U650. As described for the Colorado portion of this alternative route, a rural landscape character is a key feature of many of the landscapes crossed. Alternative COUT-I in Utah crosses 12.2 miles of Class A scenery, 84.5 miles of Class B scenery, 118.3 miles of Class C scenery, and 0.2 mile of developed land.

Viewing Locations

Viewing locations along Alternative COUT-I in Utah are similar to Alternative COUT-C from the Utah/Colorado border to Emma Park.

Residences

High concern residential viewers in the communities of Huntington (Link U498) and Mount Pleasant (Link U630) would have views of the Project. Dispersed rural residences are generally located in five areas along Alternative COUT-I in Utah: (1) Minnie Maud Creek, (2) Castle Valley, (3) summer homes on the Wasatch Plateau, (4) Sanpete Valley, and (5) Juab Valley.

Travel Routes

The Project crosses the Dinosaur Diamond Scenic Byway, east of Wellington on Link U494. The Energy Loop Scenic Byway would be crossed by Link U498 approximately 4 miles northwest of Huntington. Link U630 crosses the Skyline Drive Scenic Backway (associated with high concern viewers) along the western edge of the Wasatch Plateau.

Recreation Areas

The Arapeen Trail Network, a system of OHV routes located on the Wasatch Plateau, would be crossed by Links U629 and U630. Potters Pond and Indian Creek Campground, both associated with high concern viewers, would have views of the Project on Link U630 from less than 0.5 mile away. On the Wasatch Plateau, in lands mostly managed by the Manti-La Sal National Forest, increased dispersed recreation opportunities occur along Links U629 and U630. Dispersed recreation opportunities also are located across BLM- and state-administered lands, including big game hunting, camping, fishing, geocaching, hiking, and many others.

KOPs specific to Alternative COUT-I in Utah include:

- #26: Huntington State Park
- #27: Huntington residential
- #40: Dispersed residences northeast of Wellington
- #86: Utah State Route 45 (north of Bonanza)
- #87: Enron Recreation Area (on White River) [simulation]
- #88: Fantasy Canyon

- #131: Mount Nebo Loop Scenic Byway
- #194: Potters Ponds
- #195: Indian Creek Campground [simulation]
- #200: Argyle Canyon Road [simulation]
- #203: Fourmile Bottom [simulation]
- #204: Nephi residential
- #205: Fountain Green residential
- #206: Dispersed residences north of Mount Pleasant
- #214: Utah State Route 132 (north of Fountain Green)
- #215: Mona residential
- #217: Skyline Drive Scenic Backway [simulation]
- #256: Dinosaur Diamond Scenic Byway (U.S. Highway 6 east of Wellington) [simulation]
- #257: Dispersed residences east of Wellington
- #262: Mount Pleasant dispersed residences [simulation]
- #263: Mount Pleasant residential
- #264: Big Hollow WMA Destination Route (Fountain Green)
- #265: I-15 (Nephi) [simulation]
- #272: Sand Wash North Destination Route [simulation]
- #273: Nine Mile Canyon Scenic Backway
- #308: Millers Flat Road
- #309: Bear Creek Campground [simulation]

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Alternative COUT-I in Utah crosses 103.8 miles of BLM-administered land with 3.0 miles in VRM Class II, 33.1 miles in VRM Class III, and 67.7 miles in VRM Class IV in the BLM Vernal, Price, Richfield, and Fillmore Field Offices. The VRM Class II and III lands associated with this alternative route are similar to Alternative COUT-C.

U.S. Forest Service Visual Quality Objectives

Alternative COUT-I in Utah route crosses 16.3 miles of USFS-administered lands in the Manti-La Sal National Forest. The Project crosses 11.2 miles in a partial retention VQO and 5.1 miles in a modification VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-I in Utah crosses 26.9 miles of Class A, 73.8 miles of Class B, and 93.4 miles of Class C landscapes in the BLM Vernal, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried in the visual study area for this alternative route:

Class A SQRUs
- Argyle Creek[1]
- Green River/Book Cliffs[1]
- Jack Canyon WSA[1]
- South Green River[1]
- White River[1]

Class B SQRUs
- Blue Mountain Valley
- Cleveland Lloyd Dinosaur Quarry
- Dog Valley[1]
- Emma Park[1]
- Gilsonite Draw[1]
- Manti-La Sal[1]
- Price River
- Red Wash/Kennedy Wash/ Devil's Playground[1]
- San Pitch Mountains[1]
- Sanpete Valley[1]
- Squaw Ridge[1]
- The Book Cliffs[1]
- The Book Cliffs Bench[1]
- The Western Bench[1]
- Wrinkles Road[1]

Class C SQRUs
- Apple Spring[1]
- Bonanza[1]
- Clark Valley and the Price River Valley[1]
- Cottonwood Wash[1]
- Deadman's Bench[1]
- East Bench[1]
- Little Desert[1]
- Pariette Bench
- Sand Spring Wash[1]
- Sand Wash[1]
- Tabaygo Canyon[1]

Note: [1]SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-I in Utah crosses 83.6 miles of high sensitivity, 32.8 miles of moderate sensitivity, and 96.7 miles of low sensitivity lands. The following SLRUs were inventoried in the visual study area for this alternative route:

High SLRUs
- Green River Lower Segment
- Manti-LaSal
- Nine Mile Backway
- Nine Mile Canyon
- West Book Cliffs

Moderate SLRUs
- Book Cliffs
- Dinosaur Diamond
- I-15
- White River

Low SLRUs
- Cedar/CLDQ
- Eightmile Flat
- Full-Field Development Area
- Price Valley
- San Pitch Mountains
- Sanpete Valley

Distance Zones

Alternative COUT-I in Utah crosses 179.0 miles in the foreground-middleground distance zone, 35.7 miles in the background distance zone, and 0.7 mile in the seldom seen distance zone.

Visual Resource Inventory Classes

Alternative COUT-I in Utah crosses 55.8 miles of VRI Class II, 23.8 miles in VRI Class III, and 110.0 miles in VRI Class IV in the Vernal, Price, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with the BLM White River, Green River, Nine Mile Canyon, Argyle Canyon, the Roan Cliffs, Emma Park, the Book Cliffs, and east side of the Wasatch Plateau adjacent to Huntington.

Environmental Consequences (Utah)

Scenery

Alternative COUT-I in Utah would have similar impacts as those discussed for Alternative COUT-C, except for the area between Helper and Fountain Green. Moderate impacts on the Book Cliffs landscape

would occur where contrast produced by the construction of access roads and tower pads in rugged terrain, as well as the introduction of transmission line structures, would modify the existing landscape character. Selective mitigation measures would be applied to reduce contrast, including minimizing ground disturbance associated with the construction of access roads and tower pads, and limiting vegetation clearing in the right-of-way to the extent practicable.

Moderate impacts are anticipated on the Wasatch Plateau Parks landscape where the Project would be located adjacent to an existing transmission line through a patchwork of aspen groves and sagebrush plains. To reduce modifications to the existing landscape character, selective mitigation measures would be applied to minimize ground disturbance associated with construction of access roads and to limit vegetation clearing in the right-of-way to the extent practicable. To further reduce contrast with the landscape's existing character, the Project's H-frame alternative structure type would be used to minimize skylining of transmission line structures over the aspen groves as well as to match the form of the existing transmission line.

High impacts on the Wasatch Plateau Alpine landscape would occur where visual contrast produced by the construction of access roads and tower pads in steep rocky terrain, geometric forms associated right-of-way clearing, and the addition of transmission line structures would modify the existing landscape character. Selective mitigation measures would be applied to decrease contrast, including reducing the construction of new access roads to the extent practicable, minimizing ground disturbance from the access road construction, and limiting vegetation clearing in the right-of-way.

Viewing Locations

Alternative COUT-I in Utah would have similar impacts on viewing locations as Alternative COUT-C from the Utah/Colorado border to Emma Park.

Residences

Moderate impacts would occur on views from dispersed residences northwest of Huntington along Utah State Route 31 where the Project would be located within 0.5 mile of residences in a landscape setting that has been modified by the Carbon Power Plant and multiple existing transmission lines. To reduce visual contrast, selective mitigation measures would be applied to minimize ground disturbance associated with the construction of access roads.

Low impacts are anticipated on views from residences located in Mount Pleasant because the Project would be located more than 2 miles away with an existing transmission line between the residential viewers and the Project. As such, visual contrast produced by the Project would be weak. For additional analysis, refer to the contrast rating worksheet for KOP #263 in Appendix N.

Dispersed residences located north of Mount Pleasant in Sanpete Valley within 0.5 mile of the Project would have a high impact on their views. Many of these residences are located between the existing transmission line and the Project, while other residences located north of the Project would have views dominated by the Project. Selective mitigation measures would not be effective at reducing contrast since the Project is located in a level agricultural valley with widespread dispersed residences that would have unobstructed views of the Project. For additional analysis, refer to the contrast rating worksheet for KOP #262 and the associated visual simulation in Appendix N.

Alternative COUT-I in Utah would have similar impacts on views from dispersed residences in Juab Valley as Alternative COUT-A.

High impacts would occur on views from dispersed residences in Castle Valley, where the Project would be located within 0.5 mile of a residence in a landscape characterized by agricultural development separated by linear plateaus. To reduce contrast produced by the Project, selective mitigation measures would be applied to minimize ground disturbance associated with the construction of access roads on the steep side of the plateaus. For additional analysis, refer to the contrast rating worksheet for KOP #40 in Appendix N.

High impacts are anticipated on views from a group of summer homes on the Wasatch Plateau where the Project would traverse steep, densely vegetated slopes within 0.5 mile of these residences. The Project would parallel an existing transmission line, but would be located closer to the summer homes than the existing line. Selective mitigation measures to reduce visual contrast would include minimizing ground disturbance from the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable.

Travel Routes

High impacts are anticipated on views from the Dinosaur Diamond Scenic Byway, U.S. Highway 6 east of Wellington, where the Project crosses the highway in Cat Canyon between two plateau landforms. To reduce contrast on these views, selective mitigation measures would be applied to maximize the span length at the crossing to reduce visual dominance of structures being located between the plateaus and, therefore, adjacent to the highway. For additional analysis, refer to the contrast rating worksheet for KOP #256 and the associated visual simulation in Appendix N.

Moderate impacts would occur on views from the Energy Loop Scenic Byway west of Huntington, where the Project crosses the scenic road in context with the Carbon Power Plant and multiple existing transmission lines. Selective mitigation measures would be applied to reduce contrast, include limiting ground disturbance from the construction of access roads and maximizing the span length at the crossing to reduce visual dominance of the structures on the viewshed.

Views from the Skyline Drive Scenic Backway would have a high level of impact where the Project traverses steep slopes primarily vegetated with sub-alpine vegetation communities. To decrease visual contrast produced by the Project, selective mitigation measures would be applied, including minimizing the construction of new access roads, thereby limiting ground disturbance associated with these access roads, and reducing right-of-way vegetation clearing to the extent practicable. Due to the separation between the existing transmission line and the Project through steep terrain, recreationists traveling along this scenic road would, in most locations, only view one of the transmission lines at a time. As such, to most effectively reduce impacts associated with the Project on views from the Skyline Drive Scenic Backway, the Project should be located closer to the existing transmission line. For additional analysis, refer to the contrast rating worksheet for KOP #217 and the associated visual simulation in Appendix N.

Recreation

High impacts are anticipated on views from developed recreation sites on the Wasatch Plateau, including the Arapeen Trail Network, Potters Pond, and Indian Creek Campground, where the Project would be located within 0.5 mile of these viewing locations traversing steep slopes with dense sub-alpine vegetation. The Project would parallel an existing transmission line with wooden H-frame structures that have already modified the adjacent landscape character. The taller transmission structures proposed for the Project would be visible from farther away than the existing transmission line because they would be skylined over the trees in the flat, park-like landscape typical of the Wasatch Plateau. To reduce contrast produced by the taller structures, the application of selective mitigation measures would modify the structure type in this area to use the shorter, H-frame alternative structure type. In addition to reducing contrast associated with the transmission structures, selective mitigation measures would include limiting

ground disturbance from the construction of access roads and minimizing vegetation clearing in the right-of-way to the extent practicable to avoid producing geometric vegetation forms inconsistent with the existing landscape character. For additional analysis, refer to the contrast rating worksheet for KOP #195 and the associated visual simulation in Appendix N.

As described in the Colorado portion of Alternative COUT-I, impacts on views from dispersed recreation vary based on the level of contrast produced by the Project as compared to the existing landscape features, as well as the distance from which the Project would be viewed. The Project would parallel an existing transmission line through the area of increased dispersed recreation (Wasatch Plateau) along this alternative route. Impacts on dispersed recreationists would be reduced through the application of selective mitigation measures on views from adjacent developed recreation sites.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 103.8 miles of BLM-administered land crossed by Alternative COUT-I in Utah in the BLM Vernal, Price, Richfield, and Fillmore Field Offices, 4.5 miles would not be in compliance with VRM Class II and III objectives, including:

- Enron Recreation Area (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.
- Fourmile Bottom-Green River (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.
- Nine Mile Canyon Scenic Backway (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.
- Argyle Canyon Road (Vernal Field Office) – Noncompliance is the same as Alternative COUT-C.

U.S. Forest Service Visual Quality Objectives

The Project would meet the definition of a modification VQO where this objective would be crossed in the Manti-La Sal National Forest. Since the Project parallels an existing transmission line with similar design characteristics, after application of selective mitigation measures, the Project would borrow from the landscape's established form, line, color, and texture. In most locations, the Project would not meet the definition of a partial retention VQO, except for the area adjacent to the Huntington Power Plant (Link U629 between Milepost 1.5 and 2.7) that has considerably modified the existing landscape character. In other areas, the influence of the existing transmission line would not be enough for the Project to be subordinate to the existing landscape character.

U.S. Forest Service Land and Resource Management Plan Conformance

The 1986 Manti-La Sal National Forest LRMP provides forest-wide direction for visual resource management for activities that should meet the adopted VQO. For the GWR Management Unit, direction is provided for activities that meet the VQO, except where habitat improvement activities occur. The Project traverses the GWR Management Unit in a partial retention VQO (Link U629 between Mileposts 1.5 and 2.1) that occurs in an area visually dominated by the Huntington Power Plant and existing transmission lines. Therefore, the Project would meet the definition of this objective and conform to the plan. Since the remaining portions of the Manti-La Sal National Forest do not require that activities meet the adopted VQO, the Project would conform to the plan in these areas.

Bureau of Land Management Visual Resource Inventory Components

Alternative COUT-I in Utah would have similar effects on BLM SQRUs as those discussed for Alternative COUT-H (Table 3-256).

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The affected environment and environmental consequences for the relocation of the Bears Ears to Bonanza 345kV transmission line on Alternative COUT-H would be the same as Alternative COUT-C.

3.2.18.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Scenery

Scenery in Siting Area A is primarily Class C associated with the rolling steppe landscapes typical of the Wyoming Basin physiographic province. The northern portion of the siting area is located in Class B scenery associated with ridges descending from Powder Rim north of Cherokee Creek. The character of landscapes in the central portion of the area have been modified through the presence of oil and gas development adjacent to the Wyoming/Colorado border.

Viewing Locations

The Cherokee Historic Trail (KOP #276) traverses the northern portion of Siting Area A adjacent to Cherokee Creek on the east side of Powder Rim. A single residence is located in the southern portion of the siting area north of Moffat County Road 4.

Federal Agency Visual Management Objectives

The majority of lands in Siting Area A are administered by the BLM and have been designated as VRM Class III by both the BLM Rawlins and Little Snake Field Offices, except for a small portion in the southwest corner of the siting area which was designated as VRM Class IV.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area A: Powder Rim (Class B), Seven Mile (Class B), Cedar Breaks (Class C), Sage Flats (Class C), Fonce Flats (Class C), Hiawatha/Powder Wash (Class C), and Great Divide (Class C).

The following SLRUs are located in the siting area: Greater Adobe Town Area (high sensitivity), Powder Rim (high sensitivity), Godiva/Greystone (moderate sensitivity), and Great Divide (low sensitivity).

The entire siting area is located in the foreground-middleground distance zone except for a small portion of a background distance zone south of the Wyoming/Colorado border.

VRI Classes in Siting Area A include Class II, Class III, and Class IV lands. The VRI Class II lands are associated with Powder Rim.

Environmental Consequences

Scenery

Impacts on scenery would be most intense if the facility were to be sited on the ridge landscapes descending from Powder Rim, where there are few existing structures, since this facility would modify the landscape character through the introduction of vertical structures and earthwork required for a level site. To minimize impacts on scenery, this facility should be located in proximity to the existing oil and gas development adjacent to the Wyoming/Colorado border where the landscape character has already been modified. To further reduce these effects, selective mitigation measures would be applied to minimize earthwork associated with this facility and to match the color of rock in the yard with the adjacent soil color.

Viewing Locations

Views from the Cherokee Historic Trail would be dominated by this facility if located in the northern portion of the Siting Area A where the trail's viewshed is mostly intact except for modifications to vegetation patterns from right-of-way vegetation clearing associated with the existing pipeline corridor. Similarly if the facility were sited adjacent to the existing residence north of Moffat County Road 4, views would be dominated through the introduction of vertical structures and earthwork associated with grading a level site. To minimize these impacts on views, the facility should be sited where views from these viewing locations could be screened by existing topography as well as through the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color.

Federal Agency Visual Management Objectives

When the location of this facility is identified in Siting Area A, a contrast analysis from KOP #276 (Cherokee Historic Trail) will be completed to determine compliance with VRM Class objectives and identify any additional mitigation measures.

Siting Area B – Nine Mile Basin

Affected Environment

Scenery

The scenery in Siting Area B is primarily Class B associated with the Little Snake River and the ridges east of Sevenmile Ridge including Godiva Rim. There are limited modifications present in this siting area, except for agricultural areas that develop a strong rural character adjacent to the Little Snake River.

Viewing Locations

Dispersed residences adjacent to the Little Snake River are located in the central portion of the siting area. The Godiva Rim Proposed Backcountry Byway (KOP #289) crosses the southern edge of the siting area along the edge of Godiva Rim. Motorists on the Sevenmile Ridge Destination Route (Moffat County Road 75) would have views of the siting area at an unofficial overlook (KOP #290), which has views of the Little Snake River Valley between Sevenmile Ridge and Godiva Rim.

Federal Agency Visual Management Objectives

Similar to Siting Area A, the majority of lands in Siting Area B are administered by the BLM with all lands designated as VRM Class III by the Little Snake Field Office.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area B: Seven Mile (Class B), Douglas Draw/Peck Mesa (Class B), and Great Divide (Class C).

The following SLRUs are located in the siting area: Godiva Rim (high sensitivity) and Godiva/Greystone (moderate sensitivity).

The western portion of the siting area is located in the foreground-middleground distance zone; whereas, the eastern portion is in the background distance zone.

VRI Classes in the siting area include Class II, Class III, and Class IV lands. The VRI Class II lands are associated with Godiva Rim.

Environmental Consequences

Scenery

Since there are limited existing modifications in landscapes in Siting Area B, the introduction of this facility into these landscapes would modify the existing character through the presence of vertical structures and disturbance associated with earthwork to prepare a level site. These impacts would be most intense if the facility were located adjacent to the Little Snake River where the rural character, generated by the juxtaposition of agricultural lands and the riparian corridor, would be modified. Additionally if sited along Godiva Rim, this facility would dominate the character of this intact landscape setting. To minimize effects on scenery, this facility should be located where existing topography would diminish the presence of the vertical structures and associated earthwork would be minimized through the application of selective mitigation measures.

Viewing Locations

Views from residences along the Little Snake River would be dominated by this facility, if located in the central portion of Siting Area B, through the introduction of vertical structures and earthwork associated with constructing a level site for this facility where the existing viewshed is mostly intact. Similarly if located adjacent to Godiva Rim or Sevenmile Ridge, in the southern portion of the siting area, views would be dominated by this facility from the Godiva Rim Proposed Backcountry Byway and Sevenmile Ridge Destination Route. To reduce these effects, the facility should be sited where views could be screened by existing topography from these viewing locations. Additionally the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color would further reduce these effects.

Federal Agency Visual Management Objectives

When the location of this facility is identified in Siting Area B, a contrast analysis from KOP #289 (Godiva Rim Proposed Backcountry Byway) and #290 (Sevenmile Ridge Destination Route) will be completed to determine compliance with VRM Class objectives and identify any additional mitigation measures.

Siting Area C – Maybell

Affected Environment

Scenery

Scenery in Siting Area C is primarily Class C associated with the rolling steppe landscapes typical of the Wyoming Basin physiographic province. The northern portion of the siting area is located in Class B

scenery associated with the Yampa River, which through the introduction of agricultural development in this area, has a rural landscape character. The southern portion of the siting area includes U.S. Highway 40 and two existing transmission lines that dominate the local landscape character.

Viewing Locations

Dispersed residences adjacent to the Yampa River are located in the northern portion of the Siting Area C. Recreationists on the Yampa River and the Yampa Valley Trail, as well as viewers at the East Cross Mountain River Access Area (KOP #299), would have potential views of this facility in the central and northern portions of the siting area. In the southern portion of the siting area, viewing locations include Dinosaur National Monument (Deerlodge Road Access) and U.S. Highway 40.

Federal Agency Visual Management Objectives

Similar to Siting Area A, the majority of lands in Siting Area C are administered by the BLM with all lands designated as VRM Class III by the Little Snake Field Office.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area C: Douglas Draw/Peck Mesa (Class B), Maybell (Class B), Windy Gulch (Class B), Cross Mountain (Class B), Twelvemile Mesa (Class B), Elk Springs South (Class C) and Cedar Springs (Class C).

The following SLRUs are located in the siting area: Godiva Rim (high sensitivity), Dinosaur North (high sensitivity), Godiva/Greystone (moderate sensitivity), and Danforth Hills (low sensitivity).

The entire siting area is located in the foreground-middleground distance zone except for a small portion of a background distance zone west of the Yampa River.

VRI Classes in Siting Area C include Class I, Class II, Class III, and Class IV lands. The VRI Class I lands are associated with Cross Mountain WSA, and Class II lands are associated with Godiva Rim and Dinosaur National Monument.

Environmental Consequences

Scenery

Similar to potential effects described for Siting Area B for the areas adjacent to the Little Snake River, the rural character and intact landscape setting adjacent to the Yampa River would be modified through the introduction of vertical structures and earthwork associated with this facility. To minimize effects on scenery, this facility should be located adjacent to the existing transmission lines in the southern portion of the siting area where the local landscape character is dominated by those features. To further reduce these effects, selective mitigation measures would be applied to minimize earthwork associated with this facility and to match the color of rock in the yard with the adjacent soil color.

Viewing Locations

Views from the Yampa River (including the East Cross Mountain River Access Area), adjacent residences, and recreationists on the Yampa Valley Trail would be dominated by the Project if this facility were located in the northern portion of Siting Area C where there are limited existing modifications. Similarly if located north of U.S. Highway 40, views from the Dinosaur National Monument and U.S. Highway 40 would be dominated by the Project, especially in areas where the existing transmission lines would not be visible. To reduce these effects, the facility should be sited adjacent to existing

modifications that are most apparent in the area south of U.S. Highway 40 where two transmission lines traverse rolling terrain. If located north of the highway, the facility should be sited where views from these viewing locations could be screened by existing topography. Additionally these effects would be further reduced through the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color.

Federal Agency Visual Management Objectives

When the location of this facility is identified in Siting Area C, a contrast analysis from KOP #150 (Dinosaur National Monument), #287 (Moffat County Road 10), and #299 (East Cross Mountain River Access Area) will be completed to determine compliance with VRM Class objectives and identify any additional mitigation measures.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

Scenery

Scenery in Siting Area D is defined by the juxtaposition of agricultural fields and natural lands west of Craig, Colorado, delineated as a Class B landscape. Farther to the west, where agricultural development is not present, are Class C landscapes associated with the rolling sagebrush steep landscapes typical of the Wyoming Basin physiographic province. The character of landscapes in the siting area become more modified farther to the east where development associated with Craig becomes more dense, including residential and industrial land uses in addition to the existing transmission lines that bisect the siting area.

Viewing Locations

Widespread dispersed residences (KOP #52) are located in the eastern and northern portions of Siting Area D that have varying level of existing modifications in their viewsheds. Motorists on U.S. Highway 40 have views of the northern portion of the siting area.

Federal Agency Visual Management Objectives

There are limited BLM-administered lands in Siting Area D with most of these lands designated as VRM Class III and a small portion of Class II in the southwest corner of the area.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area D: Duffy Valley (Class A), Williams Fork (Class B), and Great Divide (Class C).

The following SLRUs are located in the siting area: Little Yampa Canyon (high sensitivity), Duffy Mountain (moderate sensitivity), Yampa Canyon (moderate sensitivity), and Great Divide (low sensitivity).

The entire siting area is located in the foreground-middleground distance zone except for a small portion of a background distance zone in Sand Spring Gulch.

VRI Classes in Siting Area D include Class II, Class III, and Class IV lands. The VRI Class II lands are associated with Little Yampa Canyon.

Environmental Consequences

Scenery

Impacts on scenery would become more intense if this facility were to be sited in the agricultural landscapes in the eastern portion of Siting Area D unless located adjacent to the existing transmission lines bisecting the siting area where the introduction of vertical structures would be less intrusive than where there are limited existing structures. To further reduce these effects, selective mitigation measures would be applied to minimize earthwork associated with this facility and to match the color of rock in the yard with the adjacent soil color.

Viewing Locations

Views from dispersed residences west of Craig would be dominated by this facility if sited adjacent to residences where there is limited visual influence from existing modifications including the two existing transmission lines. Similarly if located adjacent to U.S. Highway 40, where there are limited major modifications in view, motorists would have views potentially dominated by this facility. To minimize impacts on these views, the facility should be located adjacent to the existing transmission line corridor and where views from these viewing locations could be screened to the extent practicable. In addition, the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color would further reduce these effects.

Federal Agency Visual Management Objectives

When the location of this facility is identified in Siting Area D, a contrast analysis from KOP #52 (Dispersed residences southwest of Craig) will be completed to determine compliance with VRM Class objectives and identify any additional mitigation measures.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

Scenery

Scenery in Siting Area G is primarily Class C associated with desert flat landscapes typical of the Canyon Lands section of the Colorado Plateaus physiographic province. The riparian corridor associated with Saleratus Wash, a Class B landscape, is located in the eastern portion of the siting area. The character of landscapes in the siting area are influenced by the Green River Municipal Airport, I-70, two existing transmission lines, and the corridor shared by U.S. Highway 6 and the D&RGW Railroad Line.

Viewing Locations

The Old Spanish NHT traverses the northern portion of Siting Area G along Saleratus Wash between I-70 and the Dinosaur Diamond Scenic Byway (U.S. Highway 6). Motorists on both of these highways have views of the central and northern portion of the siting area where two existing transmission lines influence existing views.

Federal Agency Visual Management Objectives

The majority of lands in Siting Area G are administered by the BLM with all of these lands designated as VRM Class III by the Price Field Office.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area G: U.S. Highway 6/Gunnison Valley (Class C) and Uranium Hills (Class C).

The following SLRUs are located in the siting area: Deso (high sensitivity), I-70 ACEC (high sensitivity), Humbug Flats (moderate sensitivity), Dinosaur Diamond (moderate sensitivity), and San Rafael Desert (low sensitivity).

The entire siting area is located in the foreground-middleground distance zone.

VRI Classes in Siting Area G include Class III and Class IV lands.

Environmental Consequences

Scenery

Impacts on scenery from the introduction of this facility would be minimal due to the common landscapes that comprise the siting area and the presence of several large-scale landscape modifications. These effects would be more intense if the facility were to be sited adjacent to Saleratus Wash where riparian vegetation could be cleared to accommodate earthwork activities even if the facility were sited outside of this landscape. To further reduce these effects, the facility should be sited adjacent to existing landscape modifications and through the application of selective mitigation measures, including minimizing earthwork to the extent practicable.

Viewing Locations

Views from the Old Spanish NHT may become dominated by this facility if sited adjacent to the trail corridor along Saleratus Wash where there are limited existing modifications. An existing 345kV transmission line is located adjacent to the trail in the northern portion of the siting area that if sited adjacent to would decrease impacts from this facility on views from the Old Spanish NHT but due to scale of this feature, would still dominate views. Views from the Dinosaur Diamond Scenic Byway (U.S. Highway 6) would be influenced but not dominated by this facility since an existing transmission line and railroad line currently parallel the highway and influence these views. Similarly views along I-70 have been influenced by an existing transmission line that would diminish the relative effect of introducing the vertical structures associated with this facility. To diminish potential effects on these views, this facility should be located adjacent to existing modifications and where views could be screened by existing topography to the extent practicable. To further minimize these effects, selective mitigation measures would be applied to minimize earthwork activities associated with generating a level site and match the color of the rock in the yard with the adjacent soil color.

Federal Agency Visual Management Objectives

When the location of this facility is identified in Siting Area G, a contrast analysis from KOP #41 (Dinosaur Diamond Scenic Byway) will be completed to determine compliance with VRM Class objectives and identify any additional mitigation measures.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

Scenery

Scenery in Siting Area F is primarily Class B associated with agricultural lands adjacent to the Uinta River and other smaller creeks, which introduce intense green colors into a common landscape setting. The character of landscapes in the siting area have been modified by the presence of dispersed residences and development south of Roosevelt in addition to an existing 345kV transmission line.

Viewing Locations

Dispersed residences are widespread in Siting Area F and are located in the greatest density along the northern and western portions of the area (KOPs #109 and 110). These residences have varying levels of

visual influence from the existing 345kV transmission line that bisects the siting area. In addition, recreationists at Bottle Hollow Reservoir (KOP #111) would have views of the eastern portion of the siting area. Motorists on the Dinosaur Diamond Scenic Byway (U.S. Highway 40) (KOP #108) would have views of the northwest corner of the siting area.

Federal Agency Visual Management Objectives

No BLM-administered lands are located in Siting Area F.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area F: Pelican Lake (Class B) and Ouray Valley (Class C).

The following SLRU is located in the siting area: Full-Field Development Area (low sensitivity).

The entire siting area is located in the foreground-middleground distance zone.

VRI Classes in the Siting Area F only include a small portion of Class IV in the northeast corner.

Environmental Consequences

Scenery

Impacts on scenery associated with this facility would be most intense if the facility were located adjacent to riparian and agricultural lands, where the landscape character is not influenced by existing development, including the existing transmission line. This facility would modify landscape character through the introduction of vertical structures and earthwork required for a level site. To minimize impacts on scenery, this facility should be located in proximity to the existing transmission line or adjacent to existing industrial development southwest of Roosevelt where the landscape character has been modified. To further reduce these effects, selective mitigation measures would be applied to minimize earthwork associated with this facility and to match the color of rock in the yard with the adjacent soil color.

Viewing Locations

Views from dispersed residences south and southeast of Roosevelt would be dominated by this facility if sited adjacent to residences where there is limited visual influence from existing modifications, including the existing transmission line. Similarly if this facility were located north of the existing transmission line, views may become dominated by this feature from Bottle Hollow Reservoir, in the eastern portion of Siting Area F, and from the Dinosaur Diamond Scenic Byway (U.S. Highway 40) in the western portion of the siting area. To minimize impacts on these views, the facility should be located adjacent to the existing transmission line and where views from these viewing locations could be screened to the extent practicable. In addition, the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color would further reduce these effects.

Federal Agency Visual Management Objectives

Since there are no BLM-administered lands in Siting Area F, compliance with VRM Class objectives is not applicable for the facility in this area.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B would have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

Scenery

Scenery in Siting Area E is primarily Class C associated with the sagebrush valley landscapes typical of the Uinta Basin physiographic section of the Colorado Plateaus physiographic province. North of the Bonanza Power Station, Class B scenery associated with Badlands landscapes is in the siting area. The character of landscapes in this siting area have been modified through the presence of the Bonanza Power Station, oil and gas development, and two existing transmission lines.

Viewing Locations

There are few identified viewing locations in Siting Area E due to the remoteness of the area. A single residence would have views of the southwestern portion of the siting area in an area dominated by industrial development in Little Bonanza. Motorists on Utah State Route 45 (KOP #86) would have views of the central portion of the siting area in an area influenced by two existing transmission lines, oil and gas development, and the Bonanza Power Station.

Federal Agency Visual Management Objectives

The majority of lands in Siting Area E are administered by the BLM with primarily VRM Class III lands east of Utah State Route 45 and VRM Class IV west of this highway.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in Siting Area F: Red Wash/Kennedy Wash/Devil's Playground (Class B), Deadman's Bench (Class C), and Bonanza (Class C).

The following SLRUs are located in the siting area: Fantasy Canyon (high sensitivity) and Full-Field Development Area (low sensitivity).

The entire siting area is located in the foreground-middleground distance zone.

VRI Classes in Siting Area E include Class II and Class IV lands. The VRI Class II lands are associated with Fantasy Canyon.

Environmental Consequences

Scenery

Due to the presence of landscape modifications including oil and gas development, the Bonanza Power Station, and existing transmission lines, the introduction of this facility would have minimal impacts on scenery in Siting Area E. To further reduce these effects, the facility should be located adjacent to existing modifications to consolidate development where the character has already been compromised. In

addition, selective mitigation measures would be applied to minimize earthwork associated with this facility and to match the color of rock in the yard with the adjacent soil color.

Viewing Locations

Views from Utah State Route 45 would be influenced, but not dominated, by the presence of this facility if sited where views are currently influenced by oil and gas development, two existing transmission lines, and the Bonanza Power Station. To minimize these impacts, the facility should be located adjacent to these existing industrial land uses and where views from the viewing locations could be screened by existing topography to the extent practicable. Additionally, the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color, would further reduce these effects.

Federal Agency Visual Management Objectives

When the location of this facility is identified in Siting Area E, a contrast analysis from KOP #86 (Utah State Route 45) will be completed to determine compliance with VRM Class objectives and identify any additional mitigation measures.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.19 National Trails System

The National Trails System Act (NTSA) of 1968 established a national network of scenic, historic, and recreation trails to provide for outdoor recreation needs; promote the enjoyment, appreciation, and preservation of open-air, outdoor areas, and historic resources; and encourage public access and citizen involvement. Of particular interest for the Project are NSTs and NHTs. NSTs and NHTs are authorized and designated only by an Act of Congress. NSTs are continuous trails more than 100 miles long that provide non-motorized routes with outstanding recreational opportunities. NHTs commemorate historic routes of exploration, migration, trade, communication, and military action (NPS 2014b). Additionally, NHTs must meet three criteria: (1) follow as closely as possible the actual route of historic use; (2) be of national significance; and (3) have significant potential for public recreation and/or interpretation opportunities (16 U.S.C. 1242). NSTs and NHTs are formally administered by various federal agencies; however, land ownership may be in public or private hands.

3.2.19.1 Introduction and Regulatory Framework

Federal agencies must consider the effects of proposed actions on NSTs and NHTs under NEPA and the NTSA of 1968 (16 U.S.C. 1246). The law states that other uses along an NST or NHT, which will not substantially interfere with the nature and purposes of the trail, may be permitted by the Secretary charged with the administration of the trail. Reasonable efforts should be made to provide sufficient access opportunities to such trails and, to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established (16 U.S.C. 1246). More specifically, the Secretary of the Interior or the Secretary of Agriculture may grant easements and rights-of-way on, over, under, across, or along any component of the national trails system in accordance with the laws applicable to the national park system and the national forest system, respectively, provided that

any conditions contained in such easements and rights-of-way shall be related to the policy and purposes of the NTSA (16 U.S.C. 1248).

A designation as either an NST or NHT requires a two-step process: (1) Congressional authorization of a feasibility study and (2) Congressional designation. While a trail is undergoing a national trail feasibility study or when a trail has been recommended as suitable for designation and Congress has not yet acted to designate the trail, the appropriate federal agency manages the values, characteristics, and settings of the trail in accordance with FLPMA. Following a Congressional designation, the development of a comprehensive management plan for the trail is required; the comprehensive management plan is then used by various agencies in the development of land-use planning documents (e.g., BLM field office RMPs and USFS LRMPs), which may introduce additional management prescriptions to protect trail resources.

In 2006 the National Trails System MOU (06-SU-11132424-196) was signed by the BLM, NPS, FWS, USFS, USACE, and FHWA to encourage long-term interagency coordination under the authority of the NTSA. As part of this memorandum, these federal agencies would coordinate trailwide administration and site-specific management, protect resources, promote cultural values, foster cooperative relationships, share technical expertise, and fund lands and resources associated with the national trails. Subsequent to this memorandum, the BLM has implemented requirements as part of the BLM's National Trails System manual series; BLM manuals 6250, 6280, and 8353 (BLM 2012l, m, n). The manuals provide administrative and management guidance.

- BLM Manual 6250 – National Scenic and Historic Trails Administration (Public) addresses specific functions delegated to the BLM from the Secretary of the Interior pursuant to the NTSA. Specifically, this manual describes how to conduct national scenic or historic trail feasibility studies, how to administer a national scenic or Historic Trail upon designation by Congress, and the responsibilities of national scenic or Historic Trail Administrators. This manual also identifies data and records management requirements.
- BLM Manual 6280 – Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation (Public) provides policies for the management of national scenic and historic trails. Specifically, this manual identifies requirements for the management of trails undergoing national trail feasibility study; trails that are recommended as suitable for National Trail designation through the national trail feasibility study; inventory, planning, management, and monitoring of designated national scenic and historic Trails; and data and records management requirements for national scenic and historic trails.
- BLM Manual 8353 – Trail Management Areas – Secretarially Designated National Recreation, Water, and Connecting and Side Trails (Public) addresses secretarially designated national recreation trails (including the national water trails) and connecting and side trails, including requirements for cooperative relationships; trail marking; identifying, evaluating, and recommending trails; nominating trails through the submission of application packages; and data and records management.

For the purposes of NEPA and the Project-level analysis (implementation-level) addressed in this EIS, BLM Manual 6280 serves as the primary regulatory guidance (BLM 2012m). This manual details the steps required to identify and manage NST and NHT resources in the broader regulatory framework governing BLM-administered land. More specifically, the manual provides policy direction regarding the BLM's management approach and the NEPA analysis requirements for designated trails (i.e., NSTs and NHTs) and trails undergoing Congressionally authorized feasibility studies (trails under study).

As part of the NEPA analysis for any implementation-level activities proposed along NSTs and NHTs the BLM shall:

(i) For each alternative, describe and analyze the potential impacts on the nature and purposes of the National Trail, and the National Trail resources, qualities, values, and associated settings and the primary use or uses of the trail.

(ii) Describe the impacts on the national significance of National Trails, based on the NHPA National Historic Landmark (NHL) criteria and other NTSA criteria, as well as impacts on the significance of properties that are eligible or listed on the National Register of Historic Places (NRHP), as applicable.

(iii) Ensure adequate public involvement in the BLM's management activities through the NEPA, land use planning, and/or other applicable processes.

(iv) Coordinate with the National Trail administering agency during the environmental review and land use planning processes, regarding the establishment of the National Trail Management Corridor.

(v) To the greatest extent possible, consider opportunities for mitigation to a level commensurate with the adverse impact to the nature and purposes; resources, qualities, values, and associated settings; and the primary use or uses of the National Trail.

(vi) Include the following in the Decision Record or Record of Decision:

(a) Whether the proposed action will substantially interfere or will be incompatible with the nature and purposes of the National Trail, including the resources, qualities, values or associated settings or the primary use or uses.

(b) A description of the action taken to authorize or deny an activity or the application of any best management practices or mitigation measures (BLM 2012m).

The NEPA analysis for the proposed action will consider existing data, including data from the completed national trail feasibility study (if available), data provided to the BLM by the agency conducting the national trail feasibility study, or additional data collected as needed for alternative formulation and analysis. In evaluating whether to approve the proposed action, the NEPA analysis will:

(i) Describe the values, characteristics, and settings of trails under study and trails recommended as suitable in the affected environment section of the NEPA document.

(ii) Analyze and describe any impacts of the proposed action on the values, characteristics, and settings of trails under study or trails recommended as suitable.

(iii) Consider an alternative that would avoid adverse impacts on the values, characteristics, and settings of the trail under study or recommended as suitable and/or incorporate and consider applying design features to avoid adverse impacts.

(iv) When the proposed action is anticipated to have a significant adverse impact, there must be coordination between the BLM State Office and the assigned National Trail Feasibility Study agency office. If the anticipated significant adverse impact cannot be avoided, the BLM State Office must contact the BLM Washington Office so that coordination with the study agency headquarters office can be initiated (BLM 2012m).

The management of national trails occurs at two levels: (1) national trail administering agency, which is the federal agency assigned to develop the trail's comprehensive management, including the nature and purpose as well as providing the framework for the management of trail resources; and (2) the federal agency that administers the land traversed by the trail, which includes the BLM, NPS, USFS, and other federal land-management agencies.

There is one NST located in the Project study area, the Continental Divide NST, which is administered by the USFS. A comprehensive management plan was developed by the USFS in 1985 and amended in 2009. In addition to the direction provided in the comprehensive management plan, the BLM Rawlins Field Office has provided further management direction in their 2008 RMP.

One designated NHT and two historic trails under feasibility study are located in the Project study area. The Old Spanish Trail was designated as an NHT in 2002 to be co-administered by the BLM and NPS; but to date, this trail does not have a comprehensive management plan. Both the BLM Moab and Price Field Offices have included direction for trail management in their 2008 RMPs. The Overland and Cherokee Historic Trails are currently under a feasibility study to be amended to the California NHT. A comprehensive management plan was developed by the NPS for the California NHT in 1999, which would likely be modified after the completion of the feasibility study for the Overland and Cherokee Historic Trails. The BLM Rawlins Field Office has provided management direction in their 2008 RMP to protect resources associated with these historic trails.

The following management direction on national trails was identified from applicable BLM RMPs as they relate to the analysis of the Project:

- 2008 Rawlins Field Office RMP Continental Divide NST SRMA Management Goals and Actions:
  - Management Goals
    - Manage to emphasize interpretive and education opportunities
    - Ensure the continued availability of outdoor recreation opportunities associated with the Continental Divide NST.
  - Management Actions
    - The Continental Divide NST will be managed to provide opportunities for trail users to view the diverse topographic, geographic, vegetation, wildlife, and scenic phenomena that characterize the Continental Divide and to observe examples of human use of the natural resources.
    - The SRMA will be managed to protect the corridor. Land exchanges and easement acquisitions will be pursued to improve the continuity of the trail where opportunities arise. Kiosks will be erected at each end of the BLM Rawlins RMP planning area portion of the trail to provide information on access to the trail.
    - Implementation of the Continental Divide NST Comprehensive Plan will potentially result in a significant rerouting of the trail and/or trail corridor. Pursue agreements with private landowners to facilitate routing of the trail and to improve the quality of recreational experiences.
    - Reclaim unnecessary or undesirable vehicle routes.
    - Manage the Continental Divide NST to meet the Wyoming Standards for Healthy Rangelands.
    - Public lands are open to the operation of the public land laws.

- 2008 Rawlins Field Office RMP Historic Trails Management Goals and Actions (Overland and Cherokee Historic Trails):
  - Management Goals
    - Preserve and protect the historic trails to ensure that they are available for appropriate uses by present and future generations.
    - Reduce imminent threats from natural or human-caused deterioration or potential conflict with other resource uses.
    - Promote stewardship, conservation, and appreciation of historic trails.
  - Management Actions
    - The historic trails will be managed for the preservation of historic values.
    - Sections of the historic trails with intact trail traces will be preserved in their present condition. Historic trail use that would result in adverse effects on the trail trace will be evaluated on a case-by-case basis.
    - Actions resulting in linear crossings of the trails will occur in previously disturbed areas and will be managed in accordance with best management practices.
    - Where the integrity of historic trails setting contributes to NRHP eligibility, management actions resulting in visual elements that diminish the integrity of the property's setting will be managed in accordance with the Wyoming State Protocol and best management practices.
    - Ground-disturbing and disruptive activities will not be allowed within 0.25 mile or the visual horizon, whichever is closer, of the historic trails.
    - Public lands within 0.25 mile or the visual horizon of the trails, whichever is closer, are closed to operation of the public land laws within contributing portions of the trails. Public lands within 0.25 mile or the visual horizon of the trails, whichever is closer, are open to operation of the public land laws within noncontributing segments of the trails. Unevaluated portions of the trails will be managed as contributing until cultural resource inventories are conducted and an evaluation is made as to their contributing/noncontributing status.
- 2008 Moab Field Office RMP Old Spanish NHT Management Decisions:
  - Segments of the Old Spanish Trail will be identified and classified for historic integrity and condition. These segments will then be designated for appropriate types of management and travel.
  - Landmarks along the Old Spanish Trail will be identified for historic integrity and interpreted only if the action will not affect the values at the site. All interpretation projects will be done in consultation with Native Americans and other interested parties including the Old Spanish Trail Association and NPS.
  - Support protective management, interpretation, and public enjoyment and understanding of the Old Spanish Trail, consistent with the Old Spanish Trail Comprehensive Management Plan.
- 2008 Price Field Office RMP Old Spanish NHT Management Goals and Decisions:
  - Management Goals
    - Manage the Old Spanish NHT for long-term heritage, recreational, and educational values.

  - Manage National Landmarks to maintain or enhance the values for which they were designated.
- Management Decisions
  - Lost Springs Wash/Trail Springs Wash Segment: Avoid right-of-ways except where the designated corridor crosses the trail.
  - Green River Crossing (via Cottonwood Wash) to Big Flat Segment and Big Flat to Walker Flat (Emery/Sevier County Line) Segment: Right-of-ways allowed within the designated corridor.

Other federal legislation or regulation applicable to NSTs and NHTs in the Project area includes:

- Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1701; P. L.94-579) consolidates and articulates BLM and USFS management responsibilities and governs most uses of the federal lands, including authorization to grant or renew rights-of-way. In accordance with FLPMA, BLM and USFS must make land-use decisions based on principles of multiple use and sustained yield. As such, a grant of right-of-way must be limited to its necessary use and must contain terms and conditions that reflect the agencies' management responsibilities under FLPMA, including minimizing impacts on fish and wildlife habitat.
- NLCS (16 U.S. C 7201-7203) was established in 2000 by a Department of Interior Secretarial Order "in order to conserve, protect, and restore nationally significant landscapes that have outstanding cultural, ecological, and scientific values for the benefit of current and future generations." The NLCS was made permanent and codified in the OPLMA-PRP (P.L. 111-11, Title II). The system includes these areas administered by the BLM: national monuments, NCAs, wilderness, WSAs, WSRs, national scenic and historic trails, cooperative management and protection areas, outstanding natural areas, and forest reserves.
- The National Historic Preservation Act of 1966, as amended (54 U.S.C. 300101 et seq.; 36 CFR 800) directs federal agencies to take into account the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment.
- BLM Manual 8400 – Visual Resource Management outlines the system used by the BLM to manage visual resources on BLM-administered lands and includes an inventory of existing scenic values as well as management objectives that define the allowable levels of disturbance or visual contrast.

3.2.19.2 Issues Identified for Analysis

3.2.19.2.1 Continental Divide National Scenic Trail

The Continental Divide NST was established by Congress in 1978 as an NST under the NTSA and is administered by the USFS. A comprehensive plan was developed in 1985 (amended in 2009) and includes the trail's nature and purpose, which has been refined from the original 1976 *Continental Divide Trail Study Report* through decades of management. As stated in the amended 2009 comprehensive management plan, the trail's nature and purpose is "to provide for high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the Continental Divide NST corridor" (USFS 2009b). The portion of the Continental Divide NST line that potentially would be crossed by the Project is located approximately 1 mile west of Wyoming Highway 71 south of Rawlins on Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F.

3.2.19.2.2 Old Spanish National Historic Trail

The Old Spanish NHT was designated as an NHT by Congress in 2002 after approval of the 2001 feasibility study and environmental assessment (EA). The Old Spanish NHT is co-administered by the BLM and NPS and to date, a comprehensive management plan has not yet been developed for this historic trail. As such, the trail's nature and purpose has not yet been defined. The Project potentially would be located in proximity to the Old Spanish NHT from the Colorado/Utah border adjacent to the Book Cliffs and through the San Rafael Swell along Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E.

3.2.19.2.3 Overland Historic Trail (under feasibility study)

The Overland Historic Trail is currently under feasibility study by the NPS as part of the *Four Trails Feasibility Study Revisions/Environmental Assessment Project: Revisions to Feasibility Studies for Oregon, Mormon Pioneer, California, and Pony Express National Historic Trails* to be added to the currently designated California NHT. The Overland Historic Trail would be potentially crossed by Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F as the trail parallels I-80, approximately 15 miles south of the present-day interstate highway.

3.2.19.2.4 Cherokee Historic Trail (under feasibility study)

Similar to the Overland Historic Trail, the Cherokee Historic trail is also currently under feasibility study to be amended to the California NHT. The Cherokee Historic Trail parallels the Overland Historic Trail (located approximately 15 miles to the north) except the Cherokee Historic Trail traverses the northern portion of Flat Top Mountain west of Baggs and then follows the Wyoming/Colorado border. Potentially, this historic trail also would be crossed by Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F.

Map 3-14 indicates the locations of the NHTs, NSTs, and trails under feasibility study in the Project area.

3.2.19.3 Regional Setting

3.2.19.3.1 Continental Divide National Scenic Trail

The Continental Divide NST stretches from the U.S. border with Canada to the Mexican border and roughly follows the Continental Divide of the Americas. As stated in the 1976 Continental Divide NST Study Report, this scenic trail was envisioned to provide a continuous trail route designed for the hiker and horseman to access lands where the environment remains relatively unaltered. In 1997 the Deputy Chief of the USFS clarified this vision to maintain the scenic trail for non-motorized recreation. There are a multitude of recreation opportunities along the Continental Divide NST, including but not limited to hiking, cycling, camping, snowshoeing, and wildlife viewing. The portion of the scenic trail located in the Project study area is located west of Wyoming Highway 71 between Rawlins and Teton Reservoir. There are limited additional adjacent recreation opportunities along this section of the trail until the trail enters Eightmile Basin where there are several developed recreation sites, including Teton Reservoir and Rim Lake. Scenery in this section of the trail is typical of the Wyoming Basin physiographic province and is characterized by rolling steppe and plains landscapes separated by distinctive ridges including Coal Mine Ridge and Atlantic Rim. Cultural modifications in this area include dispersed residential development, an existing transmission line, and a variety of industrial facilities south of Rawlins.

3.2.19.3.2 Old Spanish National Historic Trail

The Old Spanish NHT is a 1,200-mile-long trail that once was a major caravan trade route between Santa Fe, New Mexico, and Los Angeles, California. The route was used primarily between 1829 and 1848. The earliest known exploration of this trail system by non-Native Americans was the 1776 Dominguez-

Escalante expedition (Black and Metcalf 1986; Warner 1976). The Spanish friars were led by indigenous guides along the pathways that had already been in use for hundreds of years. Between 1776 and the 1820s, the trail network was used extensively by fur trappers, traders, and explorers. In 1829 commercial pack-mule caravans began making the trek to Los Angeles to trade goods. Highly valued commercial goods (e.g., raw wool and woven textiles) were transported from the New Mexico province to California where they were exchanged for horses and mules, which were equally highly valued in the deserts of the Southwest (Bradley 1999a). In the late 1840s, portions of the trail corridor in southwestern Utah began to see wagon traffic associated with Mormon pioneers (members of the Church of Jesus Christ of Latter-day Saints) expanding settlements and by emigrants traveling west from Utah to California. These portions of the trail are referred to commonly as The Mormon Trail and/or The Salt Lake Trail to Southern California (Crampton 1979). In December of 2002, Congress designated the Old Spanish Trail as the fifteenth NHT.

In the Project area, the Old Spanish NHT traverses the area between the Book Cliffs and Arches National Park from the Colorado/Utah border to the community of Green River, Utah. This area is characterized by nearly level plains with desert shrub vegetation and few water sources. Existing cultural modifications adjacent to the trail corridor include I-70, a raised railroad line, and dispersed oil and gas development that have modified the local landscape character. West of Green River, the Old Spanish NHT enters a portion of the San Rafael Swell known as Buckhorn Flat, which is located between Cedar Mountain and the more rugged portions of the San Rafael Swell containing narrow slot canyons. Buckhorn Flat also is characterized by a nearly level plain with desert shrub vegetation; but other than an existing transmission line, the landscape character has been modified minimally. There are several recreation opportunities that allow recreationists to interpret the landscape associated with the Old Spanish NHT, including the Cedar Mountain Overlook and Wedge Overlook/Buckhorn Draw Road Scenic Backway.

3.2.19.3.3 Overland Historic Trail (under feasibility study)

The historic Overland Trail was a principal overland stage and emigrant trail route between Kansas and Utah used intensively between 1862 and 1869 (Junge 1975; Johnson et al. 2005). The trail originated at Atchison, Kansas, and closely followed the Oregon Trail until Julesburg, Colorado. From this location the trail shifted south and then at Latham, Colorado (present day Greeley), shifted back north into Wyoming. The trail traversed roughly east-west across southern Wyoming to Fort Bridger in the southwest corner of the state. From there the trail continued southwest along the Mormon Trail into Salt Lake City, Utah (Johnson et al. 2005). The trail was likely blazed along a series of existing trails, which crisscrossed the northern Plains and Rocky Mountains, and were used originally by Indians, then fur trappers and explorers, and later emigrants (Junge 1975). The first documented use of a trail that would become the Overland Trail is in 1825, when an expedition party of William H. Ashley followed portions of the trail in Wyoming (Junge 1975). In the early 1860s the trail became more intensively used when the Overland Stage Company shifted its mail transport and passenger service operations from the Oregon Trail to the Overland Trail for safety, as well as cost-savings (Junge 1975; Johnson et al. 2005; Leicht 1984).

With the completion of the Transcontinental Railroad in 1869, the need for mail service by stagecoach companies dwindled and the Overland Stage Company ceased operations along the trail (Junge 1975). It is estimated that between 1862 and 1868 more than 20,000 emigrants traveled the trail each year (Larson 2000). As previously discussed, the NPS is conducting a feasibility study to evaluate the addition of the Overland Trail to the California NHT (NPS 2014c).

The Overland Historic Trail traverses the Project area through landscapes characterized by rolling steppe and plains typical of the Wyoming Basin physiographic province, which are primarily vegetated with low-growing shrub and grassland species. Present-day oil and gas development has modified the existing landscape character along this portion of the Overland Historic Trail. There are limited recreation opportunities along this portion of the trail except for an overlook along Wyoming Highway 789.

Map 3-14

National Trails System

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

National Scenic and Historic Trails

- Continental Divide National Scenic Trail
- Old Spanish National Historic Trail
- Overland Historic Trail (under feasibility study)
- Cherokee Historic Trail (under feasibility study)

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Alternative Route
- Link Node
- Series Compensation Station Siting Area

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- State Land
- Private Land

General Reference

- City or Town
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Continental Divide National Scenic Trail, BLM 2013;
Old Spanish National Historic Trail, BLM 2002;
Overland Trail, NPS 2014; Cherokee Trail, NPS 2014;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2010, 2011; City or Town, ESRI 2013;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Miles

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3.2.19.3.4 Cherokee Historic Trail (under feasibility study)

The historic Cherokee Trail is a 900-mile overland trail that passed through present-day Oklahoma, Kansas, Colorado, and Wyoming (Fletcher et al. 1999; Leicht 1984). The trail originated in Tahlequah, Oklahoma, and proceeded north-northwest through Kansas, Colorado and then west across southern Wyoming where it connected with other westward trails at Fort Bridger, Wyoming (Fletcher et al. 1999; Leicht 1984; NPS 2012c). The trail traces its development to the California Gold Rush of the late 1840s when the route was blazed by Cherokee parties leaving Oklahoma in search of work in the gold fields (Leicht 1984). The first party to use the route did so in 1849 and within a year at least five more Cherokee parties travelled the route to reach California. During the next four decades the trail was a primary transportation corridor through the Central Plains into the Rockies. Similar to the Overland Historic Trail, the NPS is conducting a feasibility study to evaluate the addition of the Cherokee Trail to the California NHT (NPS 2014c). Many sections of the Cherokee Historic Trail are no longer visible and any remnants have been destroyed or obscured significantly from a combination of natural and cultural agents.

The Cherokee Historic Trail crosses Wyoming Highway 789 in an area characterized by rolling steppe and plains landscapes vegetated with shrubland and grassland species. West of Wyoming Highway 789, the Cherokee Historic Trail turns southward and traverses the west side of Flat Top Mountain, which rises above the adjacent rolling terrain and is a distinctive regional landscape. The historic trail crosses Hangout Wash and follows Hartt Cabin Draw, then briefly parallels Sand Creek, typically a dry creek bed, to Powder Rim where the trail turns westward through an area known as Cherokee Basin. The landscape character adjacent to Wyoming Highway 789 has been modified by oil and gas development, while the landscapes from Flat Top Mountain to Powder Rim have minimal existing cultural modifications. There are limited recreation opportunities along this portion of the Cherokee Historic Trail.

3.2.19.4 Study Methodology

For the Project, a detailed Methodology to Conduct Project Analysis for National Scenic and Historic Trails (April 2013) was developed in coordination with BLM national trails staff (BLM Trail Administrators and BLM Washington Office National Trails System Managers) and reviewed by both NPS and USFS Trail Administrators as well as appropriate public trail organizations, including Continental Divide Trail Coalition, Continental Divide Trail Society, Old Spanish Trail Association, and Oregon-California Trails Association. Inventory data was used to characterize the affected environment for all national scenic and historic trails, as well as trails under study or trails recommended as suitable, for all alternative routes regardless of jurisdiction.

Based on the guidance provided in BLM Manual 6250 and 6280 and through consultation with applicable National Trail System managers, the following items were considered in the analysis of national scenic and historic trails:

- Identified trail components (e.g., high potential route segments)
- Viewshed analyses
- Scenic resources
- Historic and cultural resources
- Recreation resources
- Natural resources
- Other landscape elements as applicable

Data representing these items were reviewed by BLM national trails staff as well as local BLM field office resource specialists and includes planning-level data as well as data gathered specifically for analysis of the Project where planning-level data were not available. For the Old Spanish NHT, the inventory conducted by the BLM as part of the NHT Inventory Project also was used. These data were

identified as part of the affected environment where located within 3 miles of the Project's alternative routes, which is consistent with other resources documented in this Draft EIS. Unique landscape features associated with the trail or trail interpretive recreation areas beyond this area were identified when necessary by the BLM national trails staff.

3.2.19.4.1 Affected Environment (Inventory)

Trail Components

For each national trail and alternative route being evaluated in this NEPA analysis, the affected environment identifies and describes the following:

- Nature and purpose of the national trail, if available
- Trail's resources, qualities, values, and associated setting(s)
- Primary use(s)
- National trail right-of-way and management corridor
- For NHT, federal protection components
- National trail-related NRHP (eligible and listed) properties.

The Federal Protection Components were limited to the high potential route segments, high potential historic sites, and auto tour routes as directed by BLM Manual 6280.

- **Nature and Purposes of the National Trail**. The trail's nature and purposes are defined by the character, characteristics, and congressional intent for a designated national trail, including the resources, qualities, values, and associated settings of the areas through which such trails may pass; the primary use or uses of a national trail; and activities promoting the preservation of, public access to, travel in, and enjoyment and appreciation of such trails. Only those national trails that have been through the comprehensive management planning process have a formal nature and purpose statement. It is important to note that trails undergoing a feasibility study also do not have a nature and purpose statement but based on BLM Manual 6280, this is not a data gap as these trails should only be analyzed according to the trail's resources, qualities, values, and associated settings.
- **National Trail Resources, Qualities, Values, and Associated Settings**. The resources, qualities, and values are defined as the significant scenic, historic, cultural, recreation, natural (including biological, geological, and scientific), and other landscape areas through which such trails may pass, as identified in the NTSA. Associated settings are defined as the geographic extent of the resources, qualities, and values or landscape elements in the surrounding environment that influence the trail experience and contribute to resource protection. In the context of an implementation action NEPA assessment, only those resources, qualities, values, and associated settings potentially affected by the Project would be inventoried. Based on consultation with the BLM, USFS, NPS, and public trail organizations, a Trail Study Corridor for the Project was defined as a 6-mile-wide corridor centered on the trail and clipped to lands within 3 miles of the Project alternative reference centerlines.
- **Primary Use or Uses**. The primary use or uses are defined as the authorized mode or modes of travel, and/or activities identified in the NTSA, enabling legislation, or legislative history, through the trailwide Comprehensive Management Plan or approved RMP.
- **National Trail Right-of-way and Management Corridor**. The national trail right-of-way is described as the corridor selected by the national trail administering agency in the trailwide Comprehensive Management Plan, which includes the area of land that is of sufficient width to encompass national trail resources, qualities, values, and associated settings. The national trail management corridor is described as the allocation established through the land-use planning

process for a public land area of sufficient width in which to encompass national trail resources, qualities, values, and associated settings and the primary use or uses that are present or that are to be restored.

- **National Historic Trails, Federal Protection Components (including high potential historic sites and high potential historic route segments) and Auto Tour Routes.** Federal protection components are those selected high potential historic sites and high potential route segments and other land- and water-based components of a designated NHT located on federally owned land that meet the NHT criteria listed in the NTSA and that are identified in trailwide Comprehensive Management Plans, RMPs, and implementation plans. Auto tour routes are defined as those roads that parallel the NHT and provide opportunities to commemorate and/or interpret the historic route as an alternate experience. These opportunities may occur inside or outside the national trail management corridor. Auto tour route opportunities may include access to NHT high potential historic sites and high potential historic route segments, although it is not required. Auto tour routes are normally restricted to existing all-weather roads or paved highways and may be limited to specific use conditions per BLM Manual 6280.
- **National Trail-related National Register of Historic Places**. Includes properties formally determined as eligible for inclusion on the NRHP; properties listed on the NRHP by the Secretary of the Interior and all other significant properties that meet NRHP listing criteria. This includes any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior.

Viewshed Analysis

A viewshed analysis was conducted for each NST and NHT (including trails under feasibility study) to refine the Project-level study area associated with each trail based on potential visibility and effects of the Project. This viewshed analysis was used to identify landscape features that would be seen or not seen from the national trail as well as to determine the areas where the most intense impacts would occur based on the construction, operation, and maintenance of the Project. As described in Section 3.2.18, the area of most intense impacts on visual resources would occur within 3 miles of the Project and as such, the viewshed was conducted out to 3 miles from the trail features described below, which differ between an NST and NHT. For NSTs, the viewshed was conducted from the latest congressionally designated continuous trail alignment and from adjacent existing recreation sites. For NHTs, a viewshed analysis was conducted out to 3 miles from the congressionally designated trail alignment, national trail-related NRHP-eligible and listed properties noted in the comprehensive management plan; other significant historic trail-related features such as river crossings, springs, and stage stations (where applicable); high potential historic sites and high potential route segments; auto tour routes; and recreation sites (where applicable) that facilitate public access and opportunities for vicarious experiences. To focus the inventory on resources that may be affected by the Project, the initial viewsheds were clipped to lands within 3 miles of Project reference centerlines to produce a Project-specific study area to describe the affected environment.

Scenic Resources

The inventory of scenic resources associated with national trails is consistent with the process described in Section 3.2.18.4 and includes the following items: (1) BLM VRI (SQRU, SLRU, distance zones, VRI Classes), (2) BLM VRM Classes, (3) Project-level scenery units, and (4) Project-level viewing locations identified as part of the inventory of recreation resources. BLM Manual 6280 requires the use of BLM VRI data (SQRUs, SLRUs, and distance zones) to characterize the affected environment for all national trails. The addition of the project-level inventory elements (scenery and viewing locations) provide additional detail to analyze potential effects on the national trails that may not be captured by the broader-scale BLM planning-level inventory data.

Historic and Cultural Resources

The process for the complete inventory and assessment of historic and cultural resources is described in Section 3.2.20.4, which includes a discussion on the requirements for analysis associated with NEPA and Section 106 of NHPA. For the purposes of analyzing potential effects on national trail historic and cultural resources resulting from the construction, operation, and maintenance of the Project, the inventory of historic and cultural resources focused on stage stations, springs, and other sites associated with the historic use of each NHT. These sites were then reviewed by the BLM, USFS, and NPS as appropriate to confirm their association with each NHT. Cultural resource sites were not identified for the Continental Divide NST through review of existing historic and cultural resource data.

Recreation Resources

As described in Section 3.2.12.4, a complete inventory of recreation resources was collected across the entire Project. This inventory was refined to determine the recreation areas associated with each national trail, including recreation sites (trails, overlooks, and interpretive sites), travel routes (scenic byways/backways and national trail access routes), and special designations (ACECs and SRMAs). These locations were reviewed by the BLM, USFS, and NPS as appropriate to determine their association with each national trail. As stated under scenic resources, these recreation areas also were part of the inventory and assessment of effects on views from specific trail-related viewing locations. In addition and as available, the BLM's ROS was included as part of the inventory of recreation resources.

Natural Resources

Through consultation with BLM, USFS, and NPS trail administrators, as well as local BLM field office resource specialists, the inventory of natural resources associated with each national trail included: (1) characteristic vegetation communities, (2) springs, (3) rivers and streams, and (4) wetlands. By focusing the inventory of natural resources on those most associated with the use of the trail, the resulting impacts provide an understanding of what may be affected by the Project. In addition to these elements, landscape-defining characteristics, including prominent or distinctive aspects, qualities, and characteristics, were identified as part of the inventory of scenic resources, specifically the BLM SQRU and project-level scenery units.

Other Landscape Elements

Existing conditions (i.e., cultural modifications such as developments, facilities, etc.) were inventoried for each NST and NHT that may be paralleled or located adjacent to the proposed Project. In the NST and NHT study areas, existing conditions range from natural appearing to highly modified based on the presence of existing transmission lines (both high and low voltage), substations, pipelines (water and high pressure natural gas), travel routes (i.e., road rights-of-way), residential and commercial development, and other man-made features that are incongruent with the natural or historic character of these landscapes. Existing conditions were evaluated through review of aerial photography as well as field reconnaissance to determine the location where modifications have affected natural settings and the relative degree that these conditions have altered the trail's setting.

Setting Description

The setting is defined as the geographic extent of the resources, qualities, and values or landscape elements in the surrounding environment that influence the trail experience and contribute to resource protection in context with the proposed Project alternative reference centerlines. For NSTs, the setting description identifies significant scenic or high visual qualities in the trail study areas. For NHTs, the

setting description identifies areas associated with high scenic quality that support the nature and purpose and/or relative freedom from intrusion in and adjacent to high potential sites and segments.

3.2.19.4.2 Impact Assessment and Mitigation Planning

This section focuses on the identification and characterization of impacts on national scenic and historic trails (including trails undergoing feasibility study) resulting from the construction, operation, and maintenance of the Project. The following types of potential environmental effects, criteria for assessing level of impacts, and effects analysis methodology were developed in consultation with the BLM and are consistent with and adhere to BLM guidance pertaining to NSTs and NHTs (BLM Manuals 6250 and 6280).

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project would result in effects on national trails where:

- The Project would substantially interfere with or be incompatible with the nature and purposes of a national trail.
- The Project would adversely modify the trail's resources, qualities, values, associated settings, or primary use or uses.

Criteria for Assessing Level of Impacts

Criteria were developed in coordination with BLM national trail staff to assess the intensity of potential effects associated with the implementation of the Project (Table 3-257). These criteria form the baseline for determining whether an impact on the different trail resources would occur at a high, moderate, or low level.

TABLE 3-257
CRITERIA FOR ASSESSING LEVEL OF IMPACTS
ON NATIONAL SCENIC AND HISTORIC TRAILS

Level of Impacts	Description
High	▪ Overall • The intended experience of the trail, gleaned from the nature and purpose, is no longer possible or is substantially compromised based on the construction and operation of the Project. Impacts cannot be effectively mitigated.
	▪ Scenic Resources • Contrast produced by the Project would demand attention and dominate views from the trail centerline where form, line, color, and texture of Project components would be incongruent with existing landscape or historic features. • High-quality, diverse, and rare or unique scenery (Class A or B) would be modified where the setting is a defining factor for the high potential route segments or as seen from historic properties and/or interpretive areas, or scenic trail centerlines.
High	▪ Historic and Cultural Resources • Characteristics of historic properties located in the trail corridor and seen from the trail centerline would be modified to the extent that the National Register of Historic Places (NRHP) eligibility of the trail segments and related historic properties affected would be compromised.
	▪ Recreation, including Travel Management • Intact resource values, including recreation and national trail-related travel management opportunities and values would be substantially compromised by the Project. These values would no longer contribute to the character of the trail.

TABLE 3-257
CRITERIA FOR ASSESSING LEVEL OF IMPACTS
ON NATIONAL SCENIC AND HISTORIC TRAILS

Level of Impacts	Description
High	▪ Natural Resources • Natural values, including any key contributing values and characteristics would be substantially compromised by the Project (i.e., a riparian area adjacent to a route segment follows what would be cleared for access roads). These values would no longer contribute to the character of the trail.
	▪ Other Landscape Elements • Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, sub-surface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may affect the trail experience. • Areas where Project facilities would not be located in proximity or parallel with (but not immediately adjacent to) landscape modifications that exhibit similar form, line, color, and texture.
Moderate	▪ Overall • The intended experience of the trail is affected but would not be substantially compromised. Mitigation may or may not be necessary.
	▪ Scenic Resources • Contrast produced by the Project would attract attention from viewers using the trail centerline, and Project components would be co-dominant with existing landscape features. • The inherent quality of interesting, but not outstanding, landscapes (Class B or C) would be modified as seen from historic properties and/or interpretive areas, or scenic trail centerlines.
	▪ Historic and Cultural Resources • Characteristics of historic properties located in the trail corridor and seen from the trail centerline would be modified to the extent that the NRHP eligibility of the trail segments affected may be compromised, but the effect could be minimized.
	▪ Recreation, including Travel Management • Intact resource values, including recreation and national trail-related travel management opportunities and values, would be modified by the Project but would remain suitably intact and continue to contribute to the character of the trail.
	▪ Natural Resources • Natural values, including any key contributing values and characteristics, would be modified by the Project but would remain suitably intact and continue to contribute to the character of the trail.
	▪ Other Landscape Elements • Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, sub-surface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may affect the trail experience. • Areas where Project facilities would be located in proximity to, or parallel with (but not immediately adjacent to), landscape modifications that exhibit similar form, line, color, and texture.
Low	▪ Overall • The intended experience of the trail would be affected negligibly. Mitigation would probably not be necessary.
	▪ Scenic Resources • Contrast produced by the Project would not be readily apparent from trail centerlines and would be subordinate in the context of existing conditions. • Minimal change would occur to the existing character of interesting and common landscapes (Class B or C) as seen from historic properties/interpretive areas, or scenic trail centerlines.

TABLE 3-257 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON NATIONAL SCENIC AND HISTORIC TRAILS	
Level of Impacts	**Description**
Low	▪ Historic and Cultural Resources • Characteristics of historic properties located in the trail corridor and seen from the trail centerline and the trail segments affected would be modified, but their eligibility for listing on the NRHP would likely not be affected.
	▪ Recreation, including Travel Management • Intact resource values, including recreation and national trail-related travel management opportunities and values, would be modified negligibly by the Project. Contributing values would continue to define the character of the trail.
	▪ Natural Resources • Natural values, including any key contributing values and characteristics would be modified negligibly by the Project. Contributing values would continue to define the character of the trail.
	▪ Other Landscape Elements • Presence of developments; facilities; landscape modifications; existing land uses; valid existing rights; surface, sub-surface, or other interests in land ownership; and other variables such as sights, smells, and other experiences that may affect the trail experience. • Areas where the Project would be located in proximity or parallel to an existing transmission line facility with similar landscape modifications and structural elements in regard to form, line, color, and texture, or screened from viewing locations associated with the trail such that the landscape is perceived to be unaltered.

Effects Analysis

Assessment of Initial Impacts

The intensity of a potential impact on the trail's nature and purpose and resources, qualities, values, associated settings, and primary use or uses would be used as the basis for determining initial impacts. The detailed methods to assess initial impacts are consistent with agency-approved analysis methods for the national trails, as well as visual resources, land use and recreation, cultural resources, and biological resources described in Chapter 3. Each national trail has resources, qualities, values, associated settings, and primary use or uses that are unique to the trail; therefore, the resources, qualities, values, associated settings, and primary use or uses may differ between trails and may differ along different segments of the same trail. The assessment of initial impacts takes into consideration the design features of the Proposed Action (Table 2-8), including but not limited to using non-specular conductors, constructing the towers with dull grey galvanized steel, and employing overland construction techniques where vegetation and topographic conditions allow.

Mitigation Planning

As described above, the first level of mitigation was applied project-wide as part of the design features of the Proposed Action and to the extent practicable, *Appendix 1 – Design Features and Best Management Practices for National Trails and Associated Resources* (BLM Manual 6280) as part of the assessment of initial impacts. Selective mitigation measures (Table 2-13) were considered on a case-by-case basis based on the level of initial impacts on mitigate site-specific resource impacts. For national trails, 13 selective mitigation measures were proposed for the Project (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, and 16). These measures were applied to reduce impacts in locations where potential high and moderate initial impacts on trail resources were identified through analysis by an interdisciplinary team (including landscape architects, planners, archaeologists, outdoor recreation planners, and other key resource staff as

appropriate for each trail segment). Avoidance and minimization measures to mitigate impacts on National Trails System components, including the Continental Divide NST and Old Spanish NHT, would be applied for the life of the impacts from the Project. For residual (i.e., unavoidable) effects on the values and settings of the Continental Divide NST and Old Spanish NHT, which would remain after applying avoidance and minimization measures, compensatory mitigation would be required at a degree that is commensurate with the impacts. Compensatory mitigation may include projects, such as securing trail land acquisition or perpetual easements, along the impacted National Trails Systems components. As described in Section 2.4, the POD will further refine the application of mitigation for the development and implementation of the Project based on final design of the Project, including off-site mitigation measures (in addition to selective mitigation measures) as appropriate. Selective mitigation measures identified for national trails include:

- **Selective Mitigation Measure 1 (disturbance to sensitive soils and vegetation)** was applied where existing access potentially would need to be widened or upgraded for construction and maintenance. It would reduce visual contrast, particularly modifications to the existing landscape's line and color elements by reducing the widening and additional clearing of adjacent vegetation for access as well as minimizing the area of disturbance in characteristic vegetation communities.
- **Selective Mitigation Measure 2 (sensitive resources avoidance)** was applied where flat terrain and vegetation would allow for cross-country access. It would reduce visual contrast by limiting the amount of soil color exposed during the construction process, which reduces contrast between the color of the soil and vegetation and allows for accelerated vegetation recovery. Similar to Selective Mitigation Measure 1, this mitigation measure also would minimize the area of disturbance in characteristic vegetation communities.
- **Selective Mitigation Measure 3 (minimize slope cut and fill)** was applied in areas of access level 2, 4, 5, and 6 on Table 2-10 (i.e., areas where switchbacks would likely be required for construction and maintenance). The mitigation measure would reduce visual contrast created by new access roads through the reduction of earthwork in sloped areas where grading could expose underlying soils, which could increase color, form, and texture contrast.
- **Selective Mitigation Measure 4 (minimize tree clearing)** was applied where the transmission line crosses overstory vegetation (deciduous forest, mixed conifer forest, pinyon-juniper, or oak stand). It would reduce impacts by decreasing visual contrast created by the removal of overstory vegetation (trees) and the hard visual line created by the cleared right-of-way/forest interface. In addition to reducing visual contrast, this selective mitigation measure would minimize disturbance in characteristic vegetation communities.
- **Selective Mitigation Measure 5 (minimize new or improved accessibility)** was applied where access and tower pads needed for construction, but not for maintenance, would be rehabilitated. It would reduce the modification of the line and color elements of visual contrast by rehabilitating access roads and tower pads not required beyond construction.
- **Selective Mitigation Measure 6 (tower design modification)** was applied where certain tower types (or finish materials) would match existing towers of parallel transmission lines, or where certain tower types (or finish materials) would have greater absorption into the surrounding landscape. It would reduce visual contrast by limiting the number of different transmission tower types that would be viewed as well as using the varied texture of background landforms to backdrop the structures so they begin to blend into the landscape.
- **Selective Mitigation Measure 7 (span and/or avoid sensitive features)** was applied where sensitive visual, natural, recreation, or cultural resources could be avoided with adjustments to the reference centerline and access routes.

- **Selective Mitigation Measure 8 (match transmission line spans)** was applied where an existing line is paralleled to reduce impacts. It would modify the standard tower spacing, where feasible, to better match that of the adjacent existing structures, therefore reducing the line and form elements of visual contrast.
- **Selective Mitigation Measure 9 (maximize span at crossing)** was applied where the line crosses a sensitive feature at a perpendicular or near perpendicular angle to offset the proposed structure from a trail segment, trail-associated travel route, or other sensitive viewpoint to the greatest extent practicable, thereby reducing dominance of the transmission line structures in a viewer's viewshed and/or a particular landscape setting.
- **Selective Mitigation Measure 10 (helicopter construction)** was applied in limited locations where access is difficult due to steep terrain. Helicopter construction would reduce visual contrast, particularly on form, line, and color elements by limiting the amount of landform disturbance and vegetation removal created by the construction of new access roads.
- **Selective Mitigation Measure 11 (minimize right-of-way clearing)** was applied where clearing of the right-of-way could be minimized. Similar to Selective Mitigation Measure 4, this mitigation measure would reduce impacts by decreasing visual contrast created by removal of vegetation and the hard visual line created by the cleared right-of-way as well as limiting disturbance in characteristic vegetation communities.
- **Selective Mitigation Measure 13 (overland access)** was applied in flat areas where no grading would be needed to access work areas. Similar to Selective Mitigation Measure 2, the use of this selective mitigation measure would reduce visual contrast by limiting the amount of soil color exposed during the construction process, which limits visual contrast between the color of the soil and vegetation.
- **Selective Mitigation Measure 16 (blend road cuts or grading)** was applied where grading in steep rocky areas creates strong visual contrast in the landscape. Blending and/or coloring areas of cut and fill would reduce contrast between the exposed ground and the surrounding environment. This mitigation measure can only be applied in disturbed areas comprised of rock faces, large boulders, or exposed granite.

Residual Impacts

Through the application of selective mitigation measures, impacts on national trails were reassessed to assign a residual impact level of high, moderate, or low based on the effectiveness of the selective mitigation measures. These are the impact levels reported in the following Results section.

3.2.19.5 Results

3.2.19.5.1 No Action Alternative

Under this alternative route, the environment would remain as it presently exists.

3.2.19.5.2 Impacts Common to All Action Alternatives

Since all alternative routes would not be in proximity to a designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System, there are no impacts common to all action alternatives.

3.2.19.5.3 345-kilovolt Ancillary Transmission Components

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to the 345kV portion of the Project, this section is not pertinent for analysis of the Project.

3.2.19.5.4 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

Trail Management

Nature and Purpose. As described in Section 3.2.19.2, the nature and purpose of the Continental Divide NST identified in the amended 2009 comprehensive management plan is as follows: "To provide for high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the Continental Divide NST corridor."

Primary Use(s). The primary use of the Continental Divide NST is to provide primitive recreational opportunities of national significance as the 3,100-mile trail traverses the western U.S. from Canada to Mexico.

National Trail Right-of-way and Management Corridor. The 2009 comprehensive management plan identifies a 50-mile-wide zone of concern that lies on either side of the geographic Continental Divide, which allows for subsequent relocation of the trail right-of-way in this zone of concern without further Acts of Congress. The BLM Rawlins Field Office established a SRMA over the former alignment of the trail, along Wyoming Highway 71, which was designated to manage resources and serve as a corridor for management of the Continental Divide NST in this field office. To date, the BLM Rawlins Field Office has not amended their RMP to colocate the SRMA with the updated Continental Divide NST alignment.

Trail Components. The alignment for the Continental Divide NST south of Rawlins parallels Wyoming Highway 71 for approximately 2 miles and then travels up Coal Mine Draw before descending Atlantic Rim into Eightmile Lake Basin. The route uses existing paved roads (Wyoming Highway 71), 4x4 roads, and two-tracks in the Project study area.

Scenic and Recreation Resources

Scenery in this area is dominated by the Atlantic Rim and Coal Mine Ridge, both Class B landscapes (as defined in Section 3.2.18.4), which rise above the adjacent rolling steppe and plains landscapes. Except for riparian vegetation along Coal Mine Draw, grassland and sagebrush vegetation are the predominant vegetation communities located both on the ridges and adjacent plains. These landscapes serve as the setting for the Continental Divide NST with a varying level of modification from existing development. Due to the enclosed views along the portion of the trail ascending Coal Mine Draw, existing cultural modifications are mostly screened from view. Farther to the north where the trail is colocated with Wyoming Highway 71, an existing transmission line, development south of Rawlins, I-80, and a series of pipelines have introduced cultural modifications into these landscapes. As currently aligned, it is important to note that the Project would be located south of the utility corridor designated by the BLM Rawlins Field Office RMP and intermittently retracing the adjacent WWEC corridor, which contain the existing transmission line mentioned above.

As inventoried by the BLM Rawlins Field Office, this area was identified as highly sensitive in the VRI which includes SLRUs associated with the Continental Divide NST and Atlantic Rim. Due to the proximity of the trail to the network of roads in the BLM Rawlins Field Office, this area was delineated in the foreground/middleground distance zone. The majority of the area adjacent to the Continental Divide NST was determined by the BLM Rawlins Field Office to be VRI Class II with small areas of Class III and Class IV lands. As currently managed in the BLM Rawlins Field Office RMP, the area potentially crossed by the Project would occur in designated VRM Class IV lands (as defined in Section 3.2.18.4).

Other than the trail itself, which was identified by the trail's comprehensive management plan as a high sensitivity travel route on BLM lands, two additional recreation areas were identified adjacent to the Continental Divide NST. The first is Rim Lake Recreation Area, which is located approximately 2.5 miles south of Link W30, south of Fivemile Ridge that is an extension of the Atlantic Rim landscape. The other recreation viewing location is Wyoming Highway 71 which provides access from Rawlins to the Continental Divide NST and other recreation areas farther to the south in Eightmile Lake Basin. ROS data for this area has not yet been developed by the BLM Rawlins Field Office. As described in the BLM Rawlins Field Office RMP, the prescribed setting for the Continental Divide NST is middle country which is based on the BLM's recreation setting characteristics.

Historic and Cultural Resources

No trail-related cultural or historic resources, including NRHP-listed sites, were identified in the Project's study area associated with the Continental Divide NST.

Biological, Natural, and Other Resources

As previously described in Scenic and Recreation Resources, vegetation in this area is dominated by grassland and sagebrush communities with isolated areas of riparian vegetation along Coal Mine Draw. The series of ridge landscapes in this area are typical of the Wyoming Basin physiographic province with Atlantic Rim exhibiting strong characteristics of this physiographic province. No other biological or natural resource issues were identified for the Continental Divide NST.

Overland Historic Trail

Trail Management

Nature and Purpose. Since this trail is currently under feasibility study and does not have a comprehensive management plan, there is no trail nature and purpose.

Primary Use(s). Since this trail is currently under feasibility study and does not have a comprehensive management plan, there are no identified primary uses.

National Trail Right-of-way and Management Corridor. Since this trail is currently under feasibility study and does not have a comprehensive management plan, there are no identified right-of-way or management corridors. It is important to note that the BLM Rawlins Field Office has identified a 0.5 mile no surface occupancy stipulation for oil and gas leases adjacent to the Overland Historic Trail (0.25 mile from each side of the trail) and an avoidance area for linear utility projects.

Trail Components. The NPS is studying two alignments for the Overland Historic Trail, in proximity to the Project, which diverge approximately 15 miles south of Rawlins: (1) turns northward roughly paralleling present-day Wyoming Highway 71 toward Rawlins and (2) continues westward toward Fort LaClede.

Scenic and Recreation Resources

Segment 1. Scenery along the segment of the Overland Historic Trail paralleling Wyoming Highway 71 toward Rawlins is similar to the landscapes described for the Continental Divide NST, including the dominance of the Atlantic Rim landscape in this area and the presence of existing modifications. Since the trail does not follow Coal Mine Draw, riparian areas are not adjacent to the trail alignment and vegetation is mostly limited to grassland and sagebrush communities.

The other components in the VRI for the BLM Rawlins Field Office are similar to those described for the Continental Divide NST.

Recreation opportunities for this portion of the Overland Historic Trail would be similar to those described for the Continental Divide NST.

Segment 2. The scenery along the other segment of the Overland Historic Trail includes plains and rolling steppe landscapes, Class C scenery, which are characteristic of the Wyoming Basin physiographic province. Vegetation primarily consists of grassland and shrubland communities with isolated riparian shrubland communities adjacent to watercourses. Modifications in proximity to the Overland Historic Trail and Alternative WYCO-B include extensive oil and gas development, which have introduced industrial structures and a network of associated access roads.

The BLM Rawlins Field Office, through the inventory of SLRUs, has identified this area as having a high sensitivity based on the presence of the Overland Historic Trail. Based on the large number of existing roads in this area, the Project crosses through the foreground/middleground distance zone. As a result of the VRI, the BLM Rawlins Field Office has identified this area as VRI Class III with adjacent VRI Class IV areas. As managed under the amended BLM Rawlins Field Office RMP, the Project crosses the Overland Historic Trail through VRM Class IV lands.

Other than recreationists traveling along the alignment of the Overland Historic Trail the primary recreation opportunity, associated with the trail, would be accessing the trail alignment from Wamsutter Road and an unnamed road that connects Wamsutter Road to Eureka Headquarters Road. It is important to note that these roads also provide access to the Adobe Town WSA. Complete ROS data for the BLM Rawlins Field Office has not yet been completed at this time.

Historic and Cultural Resources

Segment 1. No trail traces or trail-related cultural resource sites have been identified along this portion of the Overland Historic Trail.

Segment 2. The Project crosses a noncontributing trail trace, as identified by the BLM Rawlins Field Office, but would be located less than 500 feet from an approximately 2-mile long contributing trail trace. This trail trace passes the Duck Lake Stage Station, which is listed as destroyed in records from the Wyoming SHPO and located approximately 2 miles from the Project.

Biological, Natural, and Other Resources

As described for scenic and recreation resources, vegetation along both portions of the Overland Historic Trail are dominated by grassland and shrubland species with narrow zones of riparian shrubland vegetation adjacent to watercourses on the second portion of the trail. No other biological or natural resource issues were identified for the Overland Historic Trail in these areas.

Cherokee Historic Trail

Trail Management

Nature and Purpose. Similar to the Overland Historic Trail, the Cherokee Historic Trail is currently under feasibility study and does not have a comprehensive management plan; as such, there is no trail nature and purpose.

Primary Use(s). Since this trail is currently under feasibility study and does not have a comprehensive management plan, there are no identified primary uses.

National Trail Right-of-way and Management Corridor. Since this trail is currently under feasibility study and does not have a comprehensive management plan, there are no identified right-of-way or management corridors. It is important to note that the BLM Rawlins Field Office has identified a 0.5 mile no surface occupancy stipulation for oil and gas leases adjacent to the Cherokee Historic Trail (0.25 mile from each side of the trail) and an avoidance area for linear utility projects

Trail Components. Similar to the Overland Historic Trail, the NPS is studying two alignments for the Cherokee Historic Trail in proximity to the Project: (1) the 1849 route that would be crossed by the Project south of Rawlins adjacent to Wyoming Highway 71 and (2) the 1850 route crossed by Wyoming Highway 789, 13 miles north of Baggs and traverses Flat Top Mountain before paralleling the Wyoming/Colorado border.

Scenic and Recreation Resources

1849 Segment. Scenery along this trail route is similar to those described for both the Continental Divide NST and Overland Historic Trail as they are both located in proximity to Wyoming Highway 71, south of Rawlins, which is dominated by the Atlantic Rim landscape rising above the adjacent level to rolling scenery. Vegetation primarily consists of grassland and sagebrush communities in this area.

The other components in the VRI for the BLM Rawlins Field Office are similar to those described for the Continental Divide NST.

Recreation opportunities for this route of the Cherokee Historic Trail would be similar to those described for the Continental Divide NST.

1850 Segment. Scenery crossed by the Project adjacent to this route of the Cherokee Historic Trail includes the prominent Flat Top Mountain, Sand Creek, and the eastern edge of Powder Rim. Flat Top Mountain (Class B scenery) rises above the level to rolling terrain landscapes characteristic of the Wyoming Basin physiographic province (Class C scenery) but even with the higher elevation, the grassland and shrubland vegetation present is similar to the adjacent landscapes with the addition of scattered pinyon-juniper in draws. Sand Creek (Class B scenery) is characterized by a narrow, sandy creek bed with intermittent flows and bound by the adjacent rolling steppe landscapes (Class C scenery). The third key landscape is Powder Rim (Class B scenery), which would be crossed at its eastern edge and does not share the same characteristic escarpment that is more prominent and visually striking to the west. Landscape modifications in these areas are limited to scattered oil and gas development, which is located on the western portion of Flat Top Mountain, and a series of pipelines in proximity to the crossing of the trail on Powder Rim.

The BLM Rawlins Field Office has inventoried both moderate and high concern areas adjacent to the Cherokee Historic Trail associated with the Flat Tops (Flat Top Mountain) and Poison Buttes; and Powder Rim and Greater Adobe Town Area, respectively. The area traversed by the Project in proximity to the Cherokee Historic Trail occurs in the foreground/middleground distance zone. Through

development of the VRI, the BLM Rawlins Field Office has identified VRI Class II (Powder Rim) and Class III (Flat Top Mountain) areas that would be crossed by the Project as well as adjacent areas of Class IV. As managed under the amended BLM Rawlins Field Office RMP, the Project crosses and parallel the Cherokee Historic Trail in VRM Class III lands.

There are limited recreation opportunities associated with Cherokee Historic Trail except for recreationists traveling along the trail alignment or using adjacent roads to access the trail. These roads include Hangout Road, which would be paralleled on Link W113, and Shell Creek Stock Trail crossed by Link W113 approximately 2.5 miles west of the Cherokee Historic Trail. Complete ROS data for the BLM Rawlins Field Office has not yet been developed at this time.

Historic and Cultural Resources

1849 Segment. No trail traces or trail-related cultural resource sites have been identified along this portion of the Cherokee Historic Trail.

1850 Segment. The Project crosses a noncontributing trail trace, as identified by the BLM Rawlins Field Office, but would be located within 0.5 mile of a 0.25-mile long contributing trail trace. McPherson Springs, a cultural resource site with inscriptions that may reflect travel on this alignment of the Cherokee Historic Trail, is located approximately 1.0 mile east of Link W113.

Biological, Natural, and Other Resources

As described for scenic and recreation resources, vegetation along both portions of the Cherokee Historic Trail are dominated by grassland and shrubland species with narrow zones of riparian shrubland vegetation adjacent to watercourses along the 1850 alignment. No other biological or natural resource issues were identified for the Cherokee Historic Trail in this area.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Trail Management

The addition of the Project in proximity to the Continental Divide NST potentially would affect the management of the trail's nature and purpose to provide for high-quality scenery as the Project would traverse the area in Coal Mine Draw where there are limited existing modifications. To minimize impacts on future management of the trail, selective mitigation measures would be applied to maximize the distance between transmission towers at the trail crossing to diminish their influence, locate structures off of the adjacent Atlantic Rim and Coal Mine Ridge, and limit the construction of new access roads to the extent practicable. It is important to note that since the trail utilizes existing 4x4 and two-track routes, where the Project crosses the trail, effects resulting from the Project on the primitive recreation experience component of the nature and purpose would be minimal and more focused on effects on scenery and views associated with these recreation values.

Scenic and Recreation Resources

Moderate impacts on scenery would occur where the Project crosses the Continental Divide NST in Coal Mine Draw, a high sensitivity landscape, between Coal Mine Ridge and Atlantic Rim due to the introduction of additional transmission structures, construction access roads, and vegetation clearing in the riparian corridor in Coal Mine Draw. An existing transmission line is located approximately 1.75 miles north of where the Project crosses the Continental Divide NST and, as such, does influence the scenery associated with the trail south of Rawlins. To minimize impacts on scenery associated with the

trail, selective mitigation measures would be applied to limit the construction of access roads and reduce riparian vegetation clearing to the extent practicable.

High impacts are anticipated on views from the Continental Divide NST as the Project crosses the trail perpendicularly and would dominate views for 1 mile, in particular where skylined structures would be located on Coal Mine Ridge and Atlantic Rim. The existing transmission line would influence these views but due to the relative scale of the Project and the location of the crossing set in Coal Mine Draw, the Project would be incongruent with the existing landscape as viewed from the trail. To reduce effects on views from the scenic trail, selective mitigation measures would be applied to maximize the distance between transmission structures at the trail crossing, minimize vegetation clearing in Coal Mine Draw, and micro-site structures over Coal Mine Ridge and Atlantic Rim to limit their influence on views from the trail. Low impacts on views from the Rim Lake Recreation Area would occur since views would be screened by Fivemile Ridge; and if visible, the Project would be located approximately 2.5 miles away in an area that will be increasingly modified through the construction of the Sierra Madre-Chokecherry Wind Farm. Moderate to high impacts on views from Wyoming Highway 71, a trail access route, would be anticipated due to the relatively intact views in the area crossed by the Project when compared to areas farther north, adjacent to Rawlins. Similar to the previous discussion, the construction of the Sierra Madre-Chokecherry Wind Farm will modify this area and would begin to dominate views from the highway. The relative level of impact produced by the Project would be reduced as the wind farm is constructed and the Project would have a decreased additive effect.

The Project would result in a moderate level of impact on the prescribed setting for middle country in this area as described in the BLM Rawlins Field Office RMP based on the BLM's recreation setting characteristics, since the Project would modify the natural landscape character present along the trail alignment. Through the application of selective mitigation measures for reducing impacts on views from the trail, these impacts on the prescribed recreation setting would be reduced. To further limit the effect on these values, it is recommended to limit the construction of new access roads and to reclaim new access roads to limit future ATV use on roads adjacent to the Continental Divide NST because ATV use would degrade the scenic recreation setting in this area. If access is required for operation of the Project, gating the access road would limit ATV use resulting in reduced impacts on the recreation setting.

Historic and Cultural Resources

No impacts were identified on trail-related cultural or historic resources.

Biological, Natural, and Other Resources

Moderate impacts are anticipated for the portion of the Project that traverses riparian vegetation viewed from the Continental Divide NST in Coal Mine Draw. These impacts are the result of right-of-way vegetation clearing, which would result in not only geometric vegetation patterns incongruent with the existing landscape. The inherent value of a sensitive biological resource (i.e., riparian vegetation) would be affected. To reduce impacts on riparian vegetation values, selective mitigation measures would be applied to minimize the extent of right-of-way vegetation clearing and feather the edge of the right-of-way to blend with existing forms.

Overland Historic Trail

Trail Management

Since the Overland Historic Trail is under feasibility study, there are no direct impacts on the trail components. Due to the extent of existing modifications adjacent to the Overland Historic Trail, the addition of the Project would not compromise the potential designation of the trail as an NHT.

Scenic and Recreation Resources

Segment 1. Moderate impacts on scenery would occur where the Project crosses landscapes adjacent to the alignment of the Overland Historic Trail along Wyoming Highway 71, in a high sensitivity SLRU, through the introduction of transmission structures, construction access roads, and vegetation clearing. Similar to the discussion for the Continental Divide NST, an existing transmission line is located farther to the north that influences scenery adjacent to the Overland Historic Trail.

High impacts on views from the Overland Historic Trail would occur where the Project would dominate views adjacent to this trail alignment, for approximately 1 mile, and as potentially interpreted from Wyoming Highway 71. The presence of transmission structures adjacent to the trail and road, as well as on Coal Mine Ridge, would result in this high level of contrast and dominance. To reduce impacts on the Overland Historic Trail, selective mitigation measures would include maximizing the distance between transmission structures at the road and trail crossings to minimize the visual presence of these elements as well as limiting the construction of access roads over the trail alignment. Impacts on other recreation opportunities are similar to the Continental Divide NST.

Segment 2. Moderate impacts on scenery would result from the addition of the Project through the introduction of transmission structures and construction access roads in a highly sensitive landscape with existing oil and gas development. To reduce impacts on scenery adjacent to the Overland Historic Trail, selective mitigation measures would be applied to minimize the construction of new access roads to the extent practicable to limit the number of roads into an area influenced by oil and gas roads. In locations where the Project crosses riparian shrubland communities, selective mitigation measures would reduce vegetation clearing to the extent practicable, to minimize the effect of a geometrically cleared right-of-way incongruent with the existing landscape character.

High impacts would occur on views from the Overland Historic Trail for approximately 1 mile, even with extensive adjacent existing oil and gas development, due to the relative scale of the structures associated with the Project when compared to the smaller oil and gas facilities. In addition, the rolling terrain present in this area backdrops most of the oil and gas facilities, which have been painted standard environmental colors that minimizes their visual presence by blending with adjacent landscapes. To reduce impacts on these views, selective mitigation measures would be applied to maximize the distance between transmission structures at the trail crossing to limit their dominance on these views as well as to not construct Project access roads across the trail alignment. Moderate impacts were identified on the recreation access roads adjacent to the Project as recreationists would have views co-dominated by the Project in an area influenced by existing oil and gas development.

Historic and Cultural Resources.

Segment 1. No impacts were identified on historic or cultural resources along this portion of the Overland Historic Trail.

Since the Project does not cross a contributing trail trace on Alternative WYCO-B in Wyoming, direct impacts on trail resources were identified as a low impact; whereas due to the proximity of the Project to a 2-mile long contributing trail trace, moderate impacts on the trail's setting are anticipated. Similar to the description for impacts on scenery and recreation resources, the relative scale of structures associated with the Project would begin to dominate views adjacent to the Project.

Biological, Natural, and Other Resources

Segment 1. Low impacts would occur where the Project crosses vegetation communities common to the Wyoming Basin physiographic province, including grassland and shrubland communities.

Segment 2. Moderate impacts are anticipated on the narrow riparian corridors traversed by the Project adjacent to the Overland Historic Trail, resulting from a geometric form produced by right-of-way vegetation clearing, which would not only be incongruent with the existing character but the inherent value of a sensitive biological resource (i.e., riparian vegetation) would be effected as well. To minimize impacts on these natural resources, selective mitigation measures would be applied to limit vegetation clearing in riparian vegetation corridors to the extent practicable. Impacts on other vegetation communities are similar to the first segment of the trail.

Cherokee Historic Trail

Trail Management

Since the Cherokee Historic Trail is under feasibility study, there are no direct impacts on the trail components.

Scenic and Recreation Resources

1849 Segment. Impacts on scenic and recreation resource for this trail alignment are similar to those described for the first portion of the Overland Historic Trail.

1850 Segment. Moderate impacts on scenery are anticipated where the Project crosses moderate to high sensitivity landscapes adjacent to the Cherokee Historic Trail, including Flat Top Mountain, Sand Creek, and Powder Rim. These impacts would occur through the introduction of transmission structures, construction access roads, and geometric right-of-way vegetation clearing in areas with pinyon-juniper or riparian vegetation. To reduce effects on scenery adjacent to the historic trail, selective mitigation measures would be applied to minimize the construction of access roads and right-of-way vegetation clearing to the extent practicable.

High impacts on views from the Cherokee Historic Trail would occur where the Project crosses the trail, producing a geometric form as well as introducing a series of tall transmission structures and associated construction access roads, which would dominate views for 1 mile where the Project would be located adjacent to the trail. To reduce impacts on views from the trail, selective mitigation measures would be applied to maximize the distance between transmission structures across the trail to minimize their dominance on the trail setting as well as limit vegetation clearing and access road construction to the extent practicable.

Additionally, moderate impacts are anticipated on views from the trail where the Project parallels the trail over Flat Top Mountain toward Powder Rim for approximately 15 miles between 1 and 4 miles away. Due to the superior views from the Cherokee Historic Trail, in particular on Flat Top Mountain, the Project would be backdropped against adjacent landscapes; and due to the rolling terrain of Flat Top Mountain, many areas would have views partially to completely screened by topography. To further reduce impacts resulting from the Project on these views, selective mitigation measures would be applied to selectively locate towers to minimize their dominance on these views to the extent practicable. Roads accessing this portion of the Cherokee Historic Trail, including Hangout Road and Shell Creek Stock Trail, would have moderate impacts on their views where the Project would be located adjacent to these roads in areas removed from the trail alignment.

Historic and Cultural Resources

1849 Segment. No impacts were identified on historic or cultural resources along this portion of the Cherokee Historic Trail.

1850 Segment. The Project crosses a noncontributing trail trace associated with the Cherokee Historic Trail, resulting in a low direct impact on trail-associated cultural resources; whereas, moderate impacts on the trail setting are anticipated on adjacent contributing trail traces. Moderate impacts are anticipated on views from McPherson Springs due to the adjacent oil and gas facility, which has influenced these views, as well as views of the Project being partially screened by topography. To further reduce impacts on this site, the Project could be located farther to the west to utilize existing opportunities for additional topographic screening.

Biological, Natural, and Other Resources

Impacts on biological, natural, and other resources are similar to those described for the Overland Historic Trail.

Affected Environment and Environmental Consequences (Colorado)

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to the Colorado portion of Alternative WYCO-B, this section is not pertinent for analysis of the Project.

Alternative WYCO-C

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

Alternative WYCO-C in Wyoming would have the same affected environment for the Continental Divide NST as Alternative WYCO-B.

Overland Historic Trail

Alternative WYCO-C in Wyoming would have the same affected environment for the Overland Historic Trail alignment adjacent to Wyoming Highway 71 as Alternative WYCO-B.

Trail Management

Alternative WYCO-C has the same trail components for the Overland Historic Trail as those described for Alternative WYCO-B.

Scenic and Recreation Resources

Alternative WYCO-C has similar scenery along the second trail segment as Alternative WYCO-B, including the plains and rolling steppe landscapes comprised mostly of grassland and shrubland vegetation communities. In addition to the oil and gas development, which have introduced industrial structures and associated access roads, a series of pipelines have modified the area through geometric right-of-way vegetation clearing that becomes more apparent adjacent to the pipeline corridor.

The BLM Rawlins Field Office has identified this area with both high and low concern landscapes represented by the Overland Trail SLRU and Barrel Springs SLRU, respectively. This area also was delineated by the BLM Rawlins Field Office as occurring in the foreground/middleground distance zone. The VRI Class, as identified by the BLM Rawlins Field Office, includes both VRI Class III and IV lands based on whether the area is associated with a high or low sensitivity SLRU. As designated by the amended Rawlins Field Office RMP, the Project crosses the Overland Historic Trail through BLM VRM Class III lands.

Other than recreationists traveling along the alignment of the Overland Historic Trail, the primary recreation opportunity associated with the trail would be accessing the trail alignment utilizing the Eureka Headquarters Road that parallels the trail in this area.

Historic and Cultural Resources

The Project crosses a contributing trail trace approximately 2.5 miles long as identified by the BLM Rawlins Field Office. Three trail-related historic properties are located in proximity to Alternative WYCO-C in Wyoming: (1) Red Rock, (2) Barrel Springs, and (3) Dug Springs Stage Station. The first site, Red Rock, is located approximately 0.75 mile west of the Project (Link W27) and includes engraved names of mountain men, fur trappers, explorers, and emigrants who crossed through this area during the 1860s. Barrel Springs, located approximately 3 miles from the Project (Link W27), was the best water source between Muddy Creek and the headwaters of Bitter Creek and, as such, would likely have been used by users of the Overland Historic Trail. The third site, Dug Springs Stage Station, is located approximately 6 miles west of the Project (Link W27).

Biological, Natural, and Other Resources

In addition to the biological and natural resource issues identified for Alternative WYCO-B, the Overland Historic Trail in this area parallels Barrel Springs Draw with its shrubland riparian corridor. As mentioned in the historic and cultural resources description, Barrel Springs is located approximately 3 miles from the Project and was an important water source in this area.

Cherokee Historic Trail

Trail Management

Alternative WYCO-C in Wyoming has the same trail components for the Cherokee Historic Trail as those described for Alternative WYCO-B.

Scenic and Recreation Resources

1849 Segment. Alternative WYCO-C in Wyoming has the same scenic and recreation resources along this trail route as Alternative WYCO-B.

1850 Segment. Scenery crossed by the Project adjacent to this route of the Cherokee Historic Trail is associated with the eastern edge of Powder Rim (Class B scenery). The portion of Powder Rim traversed by the Project does not share the same characteristic escarpment, which is more prominent and visually striking to the west. Scattered areas of pinyon-juniper vegetation are located on Powder Rim and would be crossed by the Project. Landscape character modifications in this area are limited to a series of pipelines paralleled by Link W409.

The BLM Rawlins Field Office has inventoried the area adjacent to the Cherokee Historic Trail as a high sensitivity area associated with Powder Rim and the Greater Adobe Town Area SLRUs. The area traversed by the Project in proximity to the Cherokee Historic Trail occurs in the foreground/ middleground distance zone. The VRI for the BLM Rawlins Field Office has identified the area adjacent to the trail, potentially crossed by the Project, as VRI Class II. As designated in the amended BLM Rawlins Field Office RMP, the Project crosses the Cherokee Historic Trail in VRM Class III lands.

Recreation opportunities associated with the Cherokee Historic Trail are limited in this area except for recreationists using the trail alignment or accessing the trail from the Shell Creek Stock Trail along Link W409. A portion of the BLM Rawlins Field Office, associated with the Adobe Town Dispersed Use Area north of Shell Creek Stock Trail approximately 2 miles north of the Cherokee Historic Trail, has ROS

data that identifies this area as front country (partially modified). The remaining portion of the BLM Rawlins Field Office does not yet have ROS data.

Historic and Cultural Resources

1849 Segment. Alternative WYCO-C in Wyoming has the same historic and cultural resources along this trail route as Alternative WYCO-B.

1850 Segment. The Project would cross a 2.5-mile long contributing trail trace as identified by the BLM Rawlins Field Office in the same area where the Project crosses the existing pipeline right-of-way.

Biological, Natural, and Other Resources

Alternative WYCO-C in Wyoming has similar biological, natural, and other resources as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Alternative WYCO-C in Wyoming would have the same impacts on the Continental Divide NST as Alternative WYCO-B.

Overland Historic Trail

Alternative WYCO-C in Wyoming would have the same impacts on the first portion of the Overland Historic Trail as Alternative WYCO-B.

Trail Management

Alternative WYCO-C in Wyoming would have the same impacts on the trail components as Alternative WYCO-B.

Scenic and Recreation Resources

Alternative WYCO-C in Wyoming would have similar impacts on scenery as Alternative WYCO-B. It is important to note that since the Project would parallel an existing pipeline corridor, which has introduced a geometric vegetative form, visual contrast produced by the Project would be lower than on Alternative WYCO-B.

Similar to the impact description for Alternative WYCO-B, the Project would result in a high impact on views from the trail alignment, for approximately 1 mile, due to the relative scale of the structures associated with the Project when compared to the adjacent oil and gas structures. Selective mitigation measures would be applied to reduce these impacts, including maximizing the distance between transmission structures at the trail crossing to minimize their visual dominance as well as not constructing access roads over the trail alignment. High impacts on views from the Eureka Headquarters Road, which parallels the trail and provides access for a vicarious trail experience, would be produced where the road would be crossed by the Project adjacent to the Overland Historic Trail. Selective mitigation measures, similar to those described for the trail crossing, would be applied at the crossing of the Eureka Headquarters Road.

Historic and Cultural Resources

Moderate impacts would occur on the 2.5-mile long trail trace crossed by the Project through the modification of the setting adjacent to the trail, including the introduction of transmission line structures, construction access roads, and right-of-way vegetation clearing. These impacts were reduced based on the presence of an existing pipeline corridor, oil and gas development, and through the application of selective mitigation measures. In particular, maximizing the span length at the trail crossing as well as limiting the construction of access roads over the trail trace would limit direct impacts on the trail. Moderate impacts also are anticipated on the trail setting associated with Red Rock as the site would not be crossed by the Project. Since the view from 0.75 mile away includes existing oil and gas development as well as a pipeline corridor, the Project would begin to but would not completely dominate views as views would be partially screened by topography. Low impacts would occur on the trail-associated setting of Barrel Springs and Dug Springs Stage Station since both of these sites are located more than 3 miles from the Project.

Biological, Natural, and Other Resources

Low impacts are anticipated on the riparian vegetation in Barrel Springs Draw due to the multiple existing pipeline rights-of-way that have cleared geometric forms in the shrubland riparian corridor. To minimize the impact of the Project on this riparian corridor, selective mitigation measures would be applied to limit vegetation clearing across Barrel Springs Draw to the extent practicable. Low impacts also would occur on Barrel Springs since it is located approximately 3 miles away from the Project.

Cherokee Historic Trail

Alternative WYCO-C in Wyoming would have the same impacts on the 1849 Cherokee Historic Trail alignment as Alternative WYCO-B.

Trail Management

Alternative WYCO-C in Wyoming would have similar impacts on the trail components as Alternative WYCO-B.

Scenic and Recreation Resources

Moderate impacts on scenery would occur where the Project crosses high sensitivity landscapes adjacent to the Cherokee Historic Trail, including Powder Rim. An existing pipeline corridor has introduced geometric right-of-way clearing through pinyon-juniper vegetation. The Project would introduce additional areas of right-of-way clearing as well as transmission structures and associated access roads. To minimize impacts on these landscapes, selective mitigation measures would be applied to limit the construction of access roads and right-of-way vegetation clearing to the extent practicable.

High impacts on views from the Cherokee Historic Trail would occur where the Project crosses the trail in proximity to an existing pipeline corridor, which has introduced a geometric form from vegetation clearing in the pipeline rights-of-way. The Project also would include right-of-way vegetation clearing in addition to a series of tall transmission structures and associated construction access roads, which would dominate views where the Project would be located adjacent to the trail. To reduce effects on trail views, selective mitigation measures would be applied to maximize the distance between transmission structures across the trail to minimize their dominance on the trail setting as well as limit vegetation clearing and access road construction to the extent practicable. Views from the Shell Creek Stock Trail, which accesses this portion of the Cherokee Historic Trail, would be moderately affected where the Project crosses the road approximately 2 miles from the trail. Since the Project does not cross the areas

inventoried by the BLM Rawlins Field Office as having a front country ROS, low impacts were identified on this resource value.

Historic and Cultural Resources

The Project would cross a contributing trail trace associated with the Cherokee Historic Trail in an existing pipeline right-of-way; and as such, this crossing would result in a low to moderate direct impact on trail-associated cultural resources. The localized dominance of the existing pipeline corridor views of the trail's setting outside of the pipeline right-of-way would result in a high impact as described in the discussion of impacts on scenic and recreation resources.

Biological, Natural, and Other Resources

Alternative WYCO-C in Wyoming would have the same impacts on biological, natural, and other resources are similar to Alternative WYCO-B.

Affected Environment and Environmental Consequences (Colorado)

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to the Colorado portion of Alternative WYCO-C, this section is not pertinent for analysis of the Project.

Alternative WYCO-D

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

Alternative WYCO-D in Wyoming have the same affected environment for the Continental Divide NST as Alternative WYCO-B.

Overland Historic Trail

Alternative WYCO-D in Wyoming would have the same affected environment for the Overland Historic Trail alignment adjacent to Wyoming Highway 71 as Alternative WYCO-B.

Trail Management

Alternative WYCO-D in Wyoming has the same trail components for the Overland Historic Trail as those described for Alternative WYCO-B.

Scenic and Recreation Resources

Alternative WYCO-D in Wyoming has similar scenery along the second trail segment as Alternative WYCO-B, including the plains and rolling steppe landscapes comprised mostly of grassland and shrubland vegetation communities. Oil and gas development has introduced industrial structures and associated access roads into the landscapes adjacent to the Overland Historic Trail in this area.

As identified by the BLM Rawlins Field Office, this area is represented by the high concern Overland Trail SLRU with a small area of moderate concern (Doty Mountain SLRU) and low concern (Horse Butte SLRU). Due to the network of existing roads in this area, the Project crosses the foreground/ middleground distance zone in proximity to the Overland Historic Trail. The VRI Class in this area, determined by the BLM Rawlins Field Office, includes VRI Class II, III, and IV lands with the Project

crossing the trail in VRI Class III lands. The BLM Rawlins Field Office has designated the area, where the trail would be crossed by the Project, as VRM Class IV.

Recreation opportunities along this portion of the Overland Historic Trail include Wyoming Highway 789 (designated by Carbon County as the Outlaw Trail Loop Scenic Drive) that would be paralleled by the Project and the Overland Trail Ruts Interpretive Site located adjacent to Link W110 along Wyoming Highway 789. In addition to these recreation areas, roads which provide access to the Overland Historic Trail would be crossed including Duck Lake Road (provides access to Washakie Stage Station) and an unnamed road connecting Wyoming Highway 789 to the previously mentioned Eureka Headquarters Road.

Historic and Cultural Resources

The Project crosses a contributing trail trace approximately 5 miles long, as identified by the BLM Rawlins Field Office. The Washakie Stage Station, listed on the NRHP, is located approximately 3.25 miles east of the Project on Link W110.

Biological, Natural, and Other Resources

In addition to the biological and natural resource issues identified for Alternative WYCO-B, the Overland Historic Trail in the area of Alternative WYCO-D in Wyoming parallels Muddy Creek with a shrubland riparian corridor until an area about 2 miles east of Wyoming Highway 789 where Muddy Creek turns south toward Baggs.

Cherokee Historic Trail

Trail Management

Alternative WYCO-D has the same trail components for the Cherokee Historic Trail as those described for Alternative WYCO-B.

Scenic and Recreation Resources

1849 Segment. Alternative WYCO-D has the same scenic and recreation resources along this trail route as Alternative WYCO-B.

1850 Segment. Scenery crossed by the Project adjacent to this route of the Cherokee Historic Trail is characteristic of the Wyoming Basin physiographic province, including rolling steppe, plains, and escarpment landscapes identified as either Class B or Class C scenery. Vegetation consists primarily of sagebrush and grassland communities with areas of shrubland riparian vegetation adjacent to watercourses. Cultural modifications adjacent to the Cherokee Historic Trail include expanding oil and gas development along Wyoming Highway 789.

The BLM Rawlins Field Office inventoried the area adjacent to Wyoming Highway 789 and the Cherokee Historic Trail as a low sensitivity area associated with the Barrel Springs SLRU. Due to the proximity to Wyoming Highway 789 and other existing roads, this area was inventoried in the foreground/middleground distance zone. The VRI conducted by the BLM Rawlins Field Office identified this area as VRI Class IV. As designated in the amended BLM Rawlins Field Office RMP, the area adjacent to Wyoming Highway 789 was amended to VRM Class IV; whereas, the area west of the highway was maintained at VRM Class III.

Recreation opportunities associated with the Cherokee Historic Trail in the area of Alternative WYCO-D in Wyoming are limited to recreationists using the trail or accessing the trail via Wyoming Highway 789. Complete ROS data for the BLM Rawlins Field Office has not yet been completed.

Historic and Cultural Resources

1849 Segment. Alternative WYCO-D in Wyoming has the same historic and cultural resources along this trail route as Alternative WYCO-B.

1850 Segment. The Project crosses a noncontributing trail trace identified by the BLM Rawlins Field Office but would be located within 500 feet of a contributing trail trace in an area influenced by existing oil and gas development. No historic properties were identified in proximity to the Cherokee Historic Trail in this area.

Biological, Natural, and Other Resources

Alternative WYCO-D in Wyoming has similar biological, natural, and other resources as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Alternative WYCO-D would have the same impacts on the Continental Divide NST as Alternative WYCO-B.

Overland Historic Trail

Alternative WYCO-D would have the same impacts on the first portion of the Overland Historic Trail would be the same as Alternative WYCO-B.

Trail Management

Alternative WYCO-D would have the same impacts on the trail components as Alternative WYCO-B.

Scenic and Recreation Resources

Impacts on scenery are similar to Alternative WYCO-B as the Project would traverse plains and rolling steppe landscapes in an area inventoried as highly sensitive by the BLM Rawlins Field Office.

The Project would result in high impacts on views from the trail for approximately 1 mile where the trail would be crossed due to the relative scale of the structures associated with the Project when compared to the adjacent oil and gas structures. To limit the impact on these views, selective mitigation measures would be applied to maximize the distance between transmission structures at the trail crossing to minimize their dominance on views as well as not constructing access roads over the trail alignment. A moderate impact is anticipated on views from Wyoming Highway 789, associated with the Overland Historic Trail, since the highway accesses but does not parallel the trail and would not produce a vicarious trail experience. Similarly, the Overland Trail Ruts Interpretive Site on Wyoming Highway 789 would be moderately affected by the Project as the interpretive view from this site is toward the west and away from the Project. In addition, the site currently views an expanding oil and gas field, which is beginning to dominate views from this interpretive site. Views from the Duck Lake Road, which accesses the Washakie Stage Station, would have a moderate impact on views where the Project crosses the road 1 mile south of the trail adjacent to Muddy Creek. To minimize these impacts as well as reduce effects on

the riparian vegetation along Muddy Creek, selective mitigation measures would be applied to limit vegetation clearing in this riparian corridor to the extent practicable.

Historic and Cultural Resources

Moderate impacts on the trail's setting for the 5-mile long trail trace crossed by the Project would occur since the trail trace is located in an area increasingly viewed as developed by oil and gas wells and because application of selective mitigation measures would limit direct effects on the trail. The selective mitigation measures include maximizing the span length at the trail crossing to avoid placing towers adjacent to the trail as well as limiting the construction of access roads over the trail. Since the Washakie Stage Station are located more than 3 miles away from the Project, low impacts are anticipated on the site's trail-associated setting.

Biological, Natural, and Other Resources

Low impacts on the riparian vegetation in Muddy Creek are anticipated since the Project crosses this riparian corridor approximately 1 mile away from the trail and, as such, would minimally affect resource values associated with the Overland Historic Trail.

Cherokee Historic Trail

Alternative WYCO-D in Wyoming would have the same impacts on the 1849 Cherokee Historic Trail alignment as Alternative WYCO-B.

Trail Management

Alternative WYCO-D in Wyoming would have similar impacts on the trail components as Alternative WYCO-B.

Scenic and Recreation Resources

Low to moderate impacts on scenery are anticipated at the crossing of the Cherokee Historic Trail as this area was inventoried as a low sensitivity landscape by the BLM Rawlins Field Office and is increasingly influenced by expanding oil and gas development. The areas adjacent to the trail, which would be affected the most by the Project, were identified with moderate impacts.

High impacts on views from the Cherokee Historic Trail, adjacent to where the Project crosses the trail, would be anticipated even though there is adjacent oil and gas development. Due to the relative scale of the Project's structures when compared to the existing oil and gas facilities, the Project would dominate views adjacent to the trail. To minimize the effect on views from the trail, selective mitigation measures would be applied to maximize the span length at the crossing of the trail, which reduces their dominance on these views, and to limit the construction of access roads across the trail.

Moderate impacts are anticipated on views from Wyoming Highway 789, associated with the Cherokee Historic Trail, since the highway accesses but does not parallel the trail and, as such, would not produce a vicarious trail experience.

Historic and Cultural Resources

Since the Project does not cross a contributing trail trace on Alternative WYCO-D in Wyoming, direct impacts on trail resources were identified as low; whereas, due to the proximity of the Project to a contributing trail trace, moderate impacts on the trail setting are anticipated. As described for impacts on

scenery and recreation resources, the relative scale of the Project's structures would begin to dominate views adjacent to the Project.

Biological, Natural, and Other Resources

Alternative WYCO-D in Wyoming would have similar impacts on biological, natural, and other resources as Alternative WYCO-B.

Affected Environment and Environmental Consequences (Colorado)

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to the Colorado portion of Alternative WYCO-D, this section is not pertinent for analysis of the Project.

Alternative WYCO-F

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

Alternative WYCO-F in Wyoming would have the same affected environment for the Continental Divide NST as Alternative WYCO-B.

Overland Historic Trail

Alternative WYCO-F in Wyoming would have the same affected environment for the Overland Historic Trail as Alternative WYCO-B.

Cherokee Historic Trail

Trail Management

Alternative WYCO-F in Wyoming has the same trail components for the Cherokee Historic Trail as those described for Alternative WYCO-B.

Scenic and Recreation Resources

1849 Segment. Alternative WYCO-F in Wyoming has the same scenic and recreation resources along this trail route as Alternative WYCO-B.

1850 Segment. Scenery along this portion of the Cherokee Historic Trail includes landscapes typical of the Wyoming Basin physiographic province, including rolling steppe, plains, and escarpment landscapes as well as scenery associated with Sand Creek and Powder Rim. Sand Creek (Class B scenery) is characterized by a narrow, sandy creek bed with intermittent flows and bound by the adjacent rolling steppe landscapes. The portion of Powder Rim (Class B scenery) traversed by the Project does not share the same characteristic escarpment, which is more prominent and visually striking to the west. Sagebrush and grassland vegetation communities dominate these landscapes with isolated areas of pinyon-juniper on Powder Rim. There are limited cultural modifications adjacent to the Cherokee Historic Trail where the Project crosses the trail, except at the first trail crossing on Link W120 that is located at the edge of an existing oil and gas field.

The BLM Rawlins Field Office has inventoried the area adjacent to the first crossing of the trail as a low sensitivity landscape associated with the Barrel Springs SLRU, the second crossing would occur in moderate sensitivity lands in the Poison Buttes SLRU, and the third crossing would be located in the high

sensitivity Powder Rim SLRU. All three trail crossings would occur in the foreground/middleground distance zone. The VRI for the BLM Rawlins Field Office has identified the areas adjacent to the first two trail crossings as VRI Class IV with the third crossing occurring in an area of VRI Class II. As designated in the amended BLM Rawlins Field Office RMP, the first trail crossing would be in VRM Class IV lands with the other two trail crossings located in VRM Class III lands.

There are limited recreation opportunities associated with the Cherokee Historic Trail in this area except for use along the trail itself and recreationists using the Shell Creek Stock Trail to access the trail alignment. The BLM Rawlins Field Office does not yet have a complete ROS inventory.

Historic and Cultural Resources

1849 Segment. Alternative WYCO-F in Wyoming has the same historic and cultural resources along this trail route as Alternative WYCO-B.

1850 Segment. The Project crosses two noncontributing trail traces, as identified by the BLM Rawlins Field Office, and one contributing trail trace east of Sand Creek on Link W124. McPherson Springs, a cultural resource site with inscriptions that may reflect travel on this alignment of the Cherokee Historic Trail, is located approximately 1 mile northwest of Link W124.

Biological, Natural, and Other Resources

Alternative WYCO-F in Wyoming has similar biological, natural, and other resources as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Alternative WYCO-F in Wyoming would have the same impacts on the Continental Divide NST as Alternative WYCO-B.

Overland Historic Trail

Alternative WYCO-F in Wyoming would have the same impacts on the Overland Historic Trail as Alternative WYCO-B.

Cherokee Historic Trail

Alternative WYCO-F in Wyoming would have the same impacts on the 1849 Cherokee Historic Trail alignment as Alternative WYCO-B.

Trail Management

Alternative WYCO-F in Wyoming would have similar impacts on the trail components as Alternative WYCO-B.

Scenic and Recreation Resources

Alternative WYCO-F in Wyoming would have similar impacts on scenery at the first crossing of the Cherokee Historic Trail as Alternative WYCO-D. Moderate impacts are anticipated on scenery adjacent to the other trail crossings as they occur in landscapes associated with Sand Creek and Powder Rim, which were given a moderate and high sensitivity respectively by the BLM Rawlins Field Office. These

impacts would occur through the introduction of transmission structures, construction access roads, and geometric right-of-way clearing in areas with pinyon-juniper or riparian vegetation. To reduce impacts on scenery associated with this historic trail, selective mitigation measures would be applied to minimize the construction of access roads and right-of-way clearing to the extent practicable.

High impacts are anticipated at all three crossings of the Cherokee Historic Trail, for approximately 1 mile but would dominate views the most at the last two crossings of the trail since the first crossing is located in an expanding oil and gas field that has existing industrial structures. Even though these existing structures influence views from the trail, due to the relative scale of the Project's structures, the Project would begin to dominate views adjacent to the trail. Selective mitigation measures would be applied to reduce these impacts, including maximizing the distance between transmission structures at the trail crossings to minimize their visual dominance as well as not constructing construction access roads over the trail alignment. Moderate impacts are anticipated on views from the Shell Creek Stock Trail, associated with the Cherokee Historic Trail, since the road accesses but does not parallel the trail and would not produce a vicarious trail experience.

Historic and Cultural Resources

Since the Project does not cross a contributing trail trace on the first and last trail crossings, direct impacts on trail cultural resources were identified as low; whereas moderate impacts on the trail setting are anticipated on adjacent contributing trail traces. High impacts would occur on the second trail crossing as this occurs in a contributing trail trace adjacent to Sand Creek. Due to the limited existing modifications in this area, the Project would dominate views from this area. To minimize impacts on this trail trace, selective mitigation measures would be applied to maximize the distance between transmission structures at the trail crossing to reduce their influence on these views and limit the construction of access roads over the trail. To further reduce impacts on this contributing trail trace, the Project could be relocated to the north or south to cross the Cherokee Historic Trail at a noncontributing trail trace. Moderate impacts are anticipated on views from McPherson Springs due to the adjacent oil and gas facility, which has influenced these views, as well as views of the Project being backdropped by adjacent scenery. To further reduce impacts on this site, the Project could be located farther to the east to use existing opportunities for additional topographic screening.

Biological, Natural, and Other Resources

Alternative WYCO-F in Wyoming would have similar impacts on biological, natural, and other resources as Alternative WYCO-B.

Affected Environment and Environmental Consequences (Colorado)

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to the Colorado portion of Alternative WYCO-F, this section is not pertinent for analysis of the Project.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Alternative COUT BAX-B

Affected Environment (Colorado)

Old Spanish National Historic Trail

Trail Management

Nature and Purpose. As described in Section 3.2.19.2, since a comprehensive management plan has not yet been prepared, a trail nature and purpose has not yet been defined.

Primary Use(s). Since the Old Spanish NHT does not yet have a comprehensive management plan, there are no defined uses for the trail.

National Trail Right-of-way and Management Corridor. A trail right-of-way and management corridor have not yet been defined for the Old Spanish NHT since the trail does not yet have a comprehensive management plan.

Trail Components. The inventory of trail traces and trail-associated cultural resources conducted by the BLM, as part of the NHT Inventory Project, did not identify any of these components for the portion of the Old Spanish NHT in proximity to the Project in Colorado.

Scenic and Recreation Resources

Scenery in proximity to the Project in the Old Spanish NHT study area includes level to rolling terrain (Class C scenery) that becomes more dissected adjacent to I-70 (Class B scenery). Vegetation in these landscapes is dominated by shrubland species with pinyon-juniper communities occurring on the highest elevations. This area has limited cultural modifications except for a few dispersed residences, an existing pipeline in proximity to the Project, and the area adjacent to the Old Spanish NHT congressionally designated alignment modified by I-70.

The Grand Junction Field Office has inventoried the area adjacent to the Project in this area as a low sensitivity landscape associated with the West Salt Creek SLRU. The Project would occur in proximity to the congressionally designated alignment for the Old Spanish NHT in the foreground/middleground distance zone. Due to the low sensitivity of this area, the BLM Grand Junction Field Office inventoried this area as VRI Class IV. As designated in the BLM Grand Junction Field Office RMP, the Project would be located in VRM Class IV lands adjacent to the congressionally designated alignment for the Old Spanish NHT.

Recreation opportunities associated with the Old Spanish NHT in this area include I-70, designated as the Dinosaur Diamond Scenic Byway, and Kokopelli's Trail. Both of these viewing locations are located approximately 2 miles from the Project in the visually enclosed Rabbit Valley landscape.

Historic and Cultural Resources

No historic properties were identified in proximity to the Old Spanish NHT in this area.

Biological, Natural, and Other Resources

As mentioned for scenic and recreation resources, vegetation along this portion of the Old Spanish NHT is dominated by shrubland species with pinyon-juniper communities occurring on the highest elevations. No other biological or natural resource issues were identified for the Old Spanish NHT in this area.

Environmental Consequences (Colorado)

Old Spanish National Historic Trail

In accordance with BLM Manual 6280, since there are no trail components identified by the BLM adjacent to the Project in Colorado, low impacts on the Old Spanish NHT were identified.

Affected Environment (Utah)

Old Spanish National Historic Trail

Trail Management

Nature and Purpose. The nature and purpose is the same as discussed for the Colorado portion of Alternative COUT BAX-B.

Primary Use(s). The primary use is the same as discussed for the Colorado portion of Alternative COUT BAX-B.

National Trail Right-of-way and Management Corridor. The national trail right-of-way and management corridor is the same as discussed for the Colorado portion of Alternative COUT BAX-B.

Trail Components. The BLM identified trail traces that may become high potential route segments through the development of the trail's comprehensive management plan. Each of these trail traces was given a trail condition category of NHT II, III, IV, or V. The majority of the trail traces identified from the Colorado/Utah border to Green River (Book Cliffs Analysis Unit) were given a category of NHT IV or NHT V. Short segments of NHT II and NHT III, less than 1 mile long, are located adjacent to the Project but not crossed. Refer to Table 3-258 below for definitions of the trail categories. Longer segments of NHT II and NHT III are located between Floy Wash and Browns Wash where the trail splits the area between Horse Mesa and Hatch Mesa and approximately 6 miles east of Green River positioned between the D&RGW Railway Line and I-70. These two longer trail trace segments are located more than 2 miles away from the Project along Link U487. No trail-associated historic sites were identified by the BLM NHT Inventory Project in this area.

TABLE 3-258
NATIONAL HISTORIC TRAIL CONDITION CATEGORIES

Category	Definition
National Historic Trail (NHT) II	Location verified and evident with minor alteration
NHT III	Location verified with little remaining evidence
NHT IV	Location verified and permanently altered
NHT V	Location approximate or not verified

West of Green River (San Rafael Swell Analysis Unit), the Project would parallel an area of mostly NHT II and III condition trail traces from Saleratus Wash along Cottonwood Wash to Big Hole Draw for a distance of approximately 20 miles along Link U730. In addition, the Project along Links U729 and U728, crosses three NHT II traces in Furniture Draw and adjacent to Bitter Seep in Buckhorn Flat. The third segment of NHT II and III condition traces, in proximity to the Project, would occur adjacent to the Wedge Overlook/Buckhorn Draw Scenic Backway south of Little Cedar Mountain, approximately 2.5 miles from the Project. One trail-associated historic site was identified by the BLM NHT Inventory Project in Big Hole Wash, located 1 mile from the Project on Link U730, associated with prehistoric and historic rock art from the trail's period of significance in Big Hole Wash.

No designated auto tour routes have been established for the Old Spanish NHT.

Scenic and Recreation Resources

Book Cliffs Analysis Unit. Scenery along this portion of the Old Spanish NHT is dominated by the prominent Book Cliffs landscape (Class B scenery) that rises above the adjacent level-to-rolling desert plains (Class C scenery) where both the Project and the trail are located. Vegetation consists primarily of desert shrub and grasslands communities with bad land areas devoid of vegetation in these desert plains landscapes. Cultural modifications include I-70; residential development in proximity to Thompson Springs, Green River, and Cisco; and scattered industrial development. Another key landscape potentially crossed by the Project is the narrow riparian corridors descending from the Book Cliffs toward the Green and Colorado rivers, which due to the presence of bright green vegetation, contrast with the adjacent arid landscapes. Specifically, the Project crosses Westwater Creek, Cottonwood, Cisco, Nash, Thompson, and Floy washes.

The BLM Moab Field Office has inventoried the area adjacent to the Old Spanish NHT, in this area, as a predominately moderate sensitivity landscape associated with the I-70 SLRU. Due to the proximity of I-70 to the trail, this area is located in the foreground/middleground distance zone as identified in the Moab Field Office VRI. The areas associated with the Book Cliffs landscape was inventoried as VRI Class II; whereas, most of the areas located adjacent to the Old Spanish NHT, in this section, were inventoried as VRI Class IV. As designated in the BLM Moab Field Office RMP, the Project crosses the Old Spanish NHT through VRM Class III lands.

Recreation opportunities along this portion of the Old Spanish NHT are primarily associated with I-70, designated as the Dinosaur Diamond Scenic Byway (except for the area between Cisco and Crescent Junction) and the adjacent rest areas/scenic overlooks. These rest areas/scenic overlooks include the Harley Dome Rest Area and Overlook (located 1 mile from Link U490), Thompson Welcome Center (located 1.2 miles from Link U486), and Crescent Junction Rest Area (located 1 mile from Link U486). The Project would parallel I-70, producing long duration views, through an area that may be viewed as associated with the Old Spanish NHT from the Colorado/Utah border to Green River. Two SRMAs, which are both crossed by the congressionally designated Old Spanish NHT alignment, are located in proximity to the Project: (1) Utah Rims SRMA, which also contains the Kokopelli's Trail that may provide recreation opportunities associated with the Old Spanish NHT, and (2) Labyrinth Rims/Gemini Bridges SRMA. ROS data for the BLM Moab Field Office has not yet been completed.

San Rafael Swell Analysis Unit. Along this portion of the Old Spanish NHT, west of Green River, the Project would traverse scenery associated with Cottonwood Wash, located east of Mexican Mountain, which is characterized by a narrow band of riparian vegetation that contrasts with the adjacent arid landscapes. Farther to the northwest, the Project, adjacent to the Old Spanish NHT, enters Buckhorn Flat that is a nearly level plain located adjacent to the prominent Cedar Mountain landscape. Vegetation in Buckhorn Flat consists primarily of sagebrush and grassland communities except for the areas of pinyon-juniper vegetation adjacent to Cedar Mountain and canyons associated with the San Rafael Swell. Other than an existing transmission line, which is smaller in scale than the Project, there are limited cultural modifications in these landscapes.

The BLM Price Field Office has inventoried the areas adjacent to the Old Spanish NHT as highly sensitive, associated with the Sids Mountain-Mexican Mountain and Buckhorn/Wedge SLRUs, and moderately sensitive, associated with the Humbug Flats and Molen Reef and the Red Ledges SLRUs. There is a small portion of this area, along Link U729, that was inventoried as a low sensitivity landscape (Cedar/CLDQ SLRU). The area adjacent to the Old Spanish NHT in this area was identified to be in the foreground/middleground distance zone. As a result of the BLM Price Field Office VRI, this area contains VRI Class II, Class III, and Class IV lands with the Class II lands occurring in the areas associated with the Sids Mountain-Mexican Mountain SLRU. As designated in the BLM Price Field Office RMP, the Project crosses VRM Class III lands in proximity to the Old Spanish NHT.

Recreation opportunities associated with the Old Spanish NHT in this area include views from the Cedar Mountain Overlook and Picnic Area, which have superior views over an area associated with the Old Spanish NHT, located 1.25 miles away from the Project; the newly constructed San Rafael Swell Kiosk at the turnoff to access the Wedge Overlook, located 1.5 miles from the Project; and the Wedge Overlook/Buckhorn Draw Road Scenic Backway, which would be crossed by the Project on Link U731 in addition to being paralleled by the Project approximately 1.5 miles away through Buckhorn Flat. The Project crosses the San Rafael Swell SRMA and Big Hole ACEC in proximity to the Old Spanish NHT along Links U730, U729, U728, and U732. There also would be views of the Project from the Cottonwood Canyon and San Rafael Canyon ACECs on Links U730, U729, U728, and U732 from approximately 0.25 mile away. The Project would traverse the following ROS categories in the BLM Price Field Office: roaded natural (Links U487, U730, U729, U728, U732, U731) and semi-primitive motorized (Links U487, U730, U732).

Historic and Cultural Resources

No additional historic and cultural resources, beyond the trail traces and trail-associated historic sites inventoried by the BLM NHT Inventory Project, were identified along Alternative COUT BAX-B in Utah.

Biological, Natural, and Other Resources

Book Cliffs Analysis Unit. As described for scenic and recreation resources, vegetation along this portion of the Old Spanish NHT is primarily made up of desert shrub and grassland communities with areas barren of vegetation as well as narrow riparian corridors descending from the Book Cliffs, which highly contrast with the adjacent vegetation communities. Two key riparian corridors were identified by the BLM as being associated with the Old Spanish NHT: (1) Cisco Wash, crossed by Link U490 and (2) the Green River, crossed by Link U487, in an area not adjacent to the Old Spanish NHT. Multiple springs were identified along Floy Wash, which may be associated with the Old Spanish NHT, in proximity to the NHT II and III trail traces between Horse and Hatch mesas. No other biological or natural resource issues were identified for this portion of the Old Spanish NHT.

San Rafael Swell Analysis Unit. Vegetation along this portion of the Old Spanish NHT would primarily consist of sagebrush and grassland communities with areas of pinyon-juniper vegetation adjacent to Cedar Mountain and the San Rafael Swell as previously described in scenic and recreation resources. There is also a strip of riparian vegetation along Cottonwood Wash which, similar to the riparian areas described for the Book Cliffs Analysis Unit, contrast with the adjacent arid landscapes. A spring located in Big Hole Wash, at the end of an NHT II trail trace and potentially associated with the Old Spanish NHT is located approximately 1.25 miles southwest of Link U730. No other biological or natural resource issues were identified for this portion of the Old Spanish NHT.

Environmental Consequences (Utah)

Old Spanish National Historic Trail

Trail Components

Since the Old Spanish NHT does not have a trail nature and purpose, no impacts were identified on this trail component. The Project has the potential to affect the preservation of historic resources associated with the Old Spanish NHT, in particular, the trail setting and views from trail-associated recreation opportunities. These areas were identified with high impacts and are described below in the appropriate resource impact description.

Scenic and Recreation Resources

Book Cliffs Analysis Unit: Moderate impacts are anticipated on scenery, identified as moderate sensitivity landscapes by the BLM Moab Field Office, along this portion of the Old Spanish NHT since existing modifications in this area have influenced but do not dominate the landscape character. Due to the relative scale of the structures associated with the Project, when compared to existing cultural modifications, the Project would begin to dominate scenery in the adjacent areas. To minimize the effect on the riparian corridors descending from the Book Cliffs, selective mitigation measures would be applied to limit vegetation clearing in these areas to the extent practicable.

High impacts are anticipated on views from the Dinosaur Diamond Scenic Byway (I-70) and associated rest areas/scenic overlooks where the Project would be located within 0.5 mile of these viewers in areas with limited existing development. The Project would begin to dominate views through the introduction of transmission structures, construction access roads, and right-of-way vegetation clearing in riparian corridors. To reduce impacts on these views, selective mitigation measures would be applied to limit the construction of access roads and right-of-way vegetation clearing to the extent practicable. To reduce impacts on views from I-70, which is paralleled by the Project producing long duration intermittent views associated with the Old Spanish NHT for approximately 60 miles, the Project could be located farther to the north where the complex backdropping opportunity afforded by the Book Cliffs could be utilized. Low impacts would occur on views from the Utah Rims and Labyrinth Rims/Gemini Bridges SRMAs, associated with the Old Spanish NHT, since neither special designation contains trail traces identified by the BLM NHT Inventory Project.

San Rafael Swell Analysis Unit: Moderate impacts would occur on scenery adjacent to the Old Spanish NHT along Cottonwood Wash, which was identified by the BLM Price Field Office as a highly sensitive landscape. An existing transmission line has influenced the scenery in this area; but due to the relative scale of the structures associated with the Project, there would be an additional effect on scenery through the introduction of these taller structures, construction of access roads, and right-of-way vegetation clearing. To minimize effects on scenery in this area, selective mitigation measures would be applied to limit the construction of access roads and right-of-way vegetation clearing to the extent practicable. Low impacts are anticipated on landscapes in Buckhorn Flat due to the proximity of the existing transmission line, which has influenced the existing landscape character, except for the area identified as highly sensitive by the BLM Price Field Office. In this area, due to the elevated sensitivity when compared to adjacent areas or land, would have a moderate level of effect on scenery as the additional modifications introduced by the Project would occur in an area with a higher expectation of intact scenery. To minimize effects on scenery in these areas, selective mitigation measures would be applied to reduce right-of-way vegetation clearing and the construction of access roads to the extent practicable.

Moderate impacts are anticipated on views from the Cedar Mountain Overlook and Picnic areas since these recreation sites are located more than 1 mile away; and due to the superior views, the transmission structures would begin to blend with the adjacent landscapes. To minimize the impact of construction access roads and right-of-way vegetation clearing, which are more apparent from this superior viewing angle, selective mitigation measures would be applied to limit construction access roads and right-of-way vegetation clearing to the extent practicable. Moderate impacts would occur on views from the San Rafael Swell Kiosk, at the turnoff to the Wedge Overlook, as the Project would be located approximately 1.5 miles away and closer to the viewer than the existing transmission line.

Due to the complex backdropping afforded by Cedar Mountain, the transmission structures would begin to blend with said backdropping; but due to the long duration views at this site, the Project would influence recreation opportunities that may be associated with the Old Spanish NHT. High impacts would occur on views from the Wedge Overlook/Buckhorn Draw Scenic Backway where the Project would closely parallel the scenic road entering Buckhorn Flat as the introduction of the transmission structures

and associated access roads would dominate views from Oil Well Dome to Hadden Flat. To reduce impacts on this scenic road, selective mitigation measures would limit the construction of access roads to the extent practicable. To further reduce these impacts, the Project could be located farther away from the scenic road, which would utilize existing topography to begin to screen views of the structures. In locations where the scenic road is paralleled from 1.5 miles away through Buckhorn Flat, moderate impacts would occur on views from the road.

In addition to impacts described in Section 3.2.15 of this EIS for crossing the Big Hole ACEC, a right-of-way exclusion area requiring a plan amendment (refer to Plan Amendment PFO4 in Chapter 5), low impacts are anticipated on views from this area. This level of impact is the result of selective mitigation measures that would be applied to span the canyon associated with this ACEC; therefore, viewers in the ACEC would only see the conductors overhead, which is a similar condition produced by the existing transmission line. Moderate impacts on views from in the Cottonwood Canyon ACEC would occur since the existing transmission line is located adjacent to the ACEC and views of the Project would be past this existing modification.

Due to the relative scale of the structures associated with the Project, they would still influence views from this special designation. In contrast, views from the San Rafael Canyon ACEC would be more heavily influenced by the Project since the existing transmission line is located farther away from the Project and in proximity to an NHT II trail trace. Low impacts on the areas of roaded natural and semi-primitive motorized ROS in the BLM Price Field Office would occur through the introduction of the Project in an area already influenced by an existing transmission line.

Historic and Cultural Resources

Book Cliffs Analysis Unit. High impacts were identified where the Project would be located within 0.5 mile of an NHT II or III trail trace where the setting has been retained or has been slightly diminished through previous development adjacent to the trail. Due to the distance from the segment of NHT II and III between Floy Wash and Browns Wash, the Project would result in a low impact on the trail setting for this trail trace. The area of high impacts associated with the crossing of the Dinosaur Diamond Scenic Byway was extended to include the NHT II and III trail traces located between the interstate and the adjacent railroad line as this area could be interpreted as an area associated with the Old Spanish NHT, and the Project would further modify the trail's setting. Moderate impacts were identified on more distant views from NHT II or III traces with a mostly retained setting or where NHT III or IV traces were located in proximity to the Project. The Project does not cross any NHT II or III trail traces as inventoried by the BLM NHT Inventory Project so there would be limited direct effects on these trail traces.

San Rafael Swell Analysis Unit: High impacts on the setting for the Old Spanish NHT, adjacent to the NHT II and III trail traces along Cottonwood Wash and Furniture Draw, would occur where the Project would be located within 0.5 mile of these trail traces. Through the introduction of the transmission line structures (which are larger in scale than the existing transmission line), construction access roads, and right-of-way vegetation clearing, the Project would begin to dominate views along these portions of the trail. In addition, several NHT II and III trail traces would be crossed by the Project that may be affected directly. To reduce impacts on the trail setting and the trail traces themselves, selective mitigation measures would be applied, including minimize the construction of new access roads across the trail traces, limiting right-of-way vegetation clearing to the extent practicable, and maximizing the span length at the trail crossing to lower the level of visual dominance of locating structures adjacent to the trail. To further reduce impacts on the trail setting, the Project could be relocated to increase opportunities for screening and backdropping, which would lower the physical presence of the transmission structures. Low impacts would occur on the trail's setting for the trail traces identified adjacent to the Wedge Overlook/Buckhorn Scenic Backway, south of Little Cedar Mountain, since these traces are located more

than 2.5 miles from the Project and views would be partially screened by Little Cedar Mountain and the adjacent Black Hills. Due to the enclosed landscape adjacent to the historic site identified in Cottonwood Wash, through the BLM NHT Inventory Project, views toward the Project would be almost completely screened by topography. As such, low impacts on the trail-associated setting of this site are anticipated.

Biological, Natural, and Other Resources

Book Cliffs Analysis Unit. As mentioned for impacts on scenic and recreation resources, the Project would moderately impact the riparian corridors descending from the Book Cliffs through the removal of riparian vegetation and the development of a geometric vegetative form in the Project's right-of-way. To reduce impacts on these riparian corridors, selective mitigation measures would be applied to limit right-of-way vegetation clearing to the extent practicable. Impacts on Cisco Wash, in particular, would be low since the Project crosses the wash in an area with limited and scattered riparian vegetation. Similarly, low impacts would occur on biological, natural, and other resources associated with the Old Spanish NHT at the Green River since no trail traces were identified near the area where the Project crosses the river. Low impacts also would be anticipated on springs in Floy Wash since these springs are located approximately 3 miles from the Project and would not be affected directly by the Project.

San Rafael Swell Analysis Unit. Low impacts would occur on the pinyon-juniper vegetation communities adjacent to Cedar Mountain and the San Rafael Swell since these communities are common in this area and through selective mitigation measures identified for scenic and recreation resources, right-of-way vegetation clearing would be minimized to the extent practicable. Since the Project would not be located adjacent to the spring in Big Hole Wash, there would be low impacts on this natural feature.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

Old Spanish National Historic Trail

Alternative COUT BAX-C in Colorado would have the same affected environment and environmental consequences for the Old Spanish NHT as Alternative COUT BAX-B.

Affected Environment (Utah)

Old Spanish National Historic Trail

Trail Management

Nature and Purpose. Alternative COUT BAX-C in Utah is the same as Alternative COUT BAX-B.

Primary Use(s). Alternative COUT BAX-C in Utah is the same as Alternative COUT BAX-B.

National Trail Right-of-way and Management Corridor. Same as Alternative COUT BAX-B.

Trail Components. Alternative COUT BAX-C has the same trail components associated with the Book Cliffs Analysis Unit as Alternative COUT BAX-B.

In the San Rafael Swell Analysis Unit, west of Green River, the Project crosses the first portion of the NHT II and III traces described for Alternative COUT BAX-B adjacent to Cottonwood Wash. Specifically, Link U488 crosses an NHT V trace but would be located adjacent to an NHT III trace in Saleratus Wash. In addition, the Project along Links U733 and U732 would be located adjacent to a 2.5-mile long trail trace (mostly NHT II) that ascends Furniture Draw onto Buckhorn Flat. The third segment of NHT II and III condition traces in proximity to the Project would occur adjacent to the Wedge Overlook/Buckhorn Draw Scenic Backway south of Little Cedar Mountain, approximately 2.5 miles from

the Project. No trail-associated historic sites were identified by the BLM NHT Inventory Project in this area.

Scenic and Recreation Resources

Book Cliffs Analysis Unit. Alternative COUT BAX-C in Utah has the same scenic and recreation resources associated with the Book Cliffs Analysis Unit as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. Traversing the area west of Green River, the Project would be located in a nearly level plain between the prominent Book Cliffs landscape and more subtle Calf Mesa, along Link U488, where vegetation is primarily made up of desert shrub and grassland communities. Cultural modifications associated with this area include U.S. Highway 6, an existing lower voltage transmission line, and the D&RGW Railway Line. Scenery described for Alternative COUT BAX-B through Buckhorn Flat is similar to the landscapes crossed by Alternative COUT BAX-C in Utah.

The area adjacent to the congressionally designated alignment for the Old Spanish NHT, along U.S. Highway 6, was inventoried by the BLM Price Field Office as a moderate sensitivity landscape associated with the Dinosaur Diamond and Humbug Flats SLRUs. Farther to the west, the area adjacent to the Wedge Overlook/Buckhorn Draw Scenic Backway was inventoried as a high sensitivity landscape associated with the Sids Mountain-Mexican Mountain SLRU. The entire area adjacent to the Old Spanish NHT in this area was determined by the BLM Price Field Office to be located in the foreground/middleground distance zone. Through development of the BLM Price Field Office VRI, this area contains VRI Class II, Class III, and Class IV lands with the Class II lands occurring in areas associated with the Sids Mountain-Mexican Mountain SLRU. The Project crosses areas designated by the Price Field Office as VRM Class III along U.S. Highway 6, the Green River Cutoff Road, and the Wedge Overlook/Buckhorn Draw Scenic Backway.

Recreation opportunities associated with the Old Spanish NHT along Alternative COUT BAX-C in Utah, prior to entering Buckhorn Flat, would occur on U.S. Highway 6 (designated as the Dinosaur Diamond Scenic Byway) that would be paralleled by Link U488 and the Green River Cutoff Road (provides access into the San Rafael Swell) with views of the Project on Link U734 as the road is paralleled. It is important to note that no identified trail traces are located adjacent to these areas but both routes are in proximity to the Old Spanish NHT congressionally designated alignment. Other recreation opportunities along this alternative route would be similar to those described for Alternative COUT BAX-B except for the Cottonwood Canyon and Big Hole ACECs. The Project would traverse the following ROS categories in the Price Field Office: Roaded Natural (Links U488, U734, U733, U732, and U731) and semi-primitive motorized (Link U734, U733).

Historic and Cultural Resources

No additional historic and cultural resources, beyond the trail traces and trail-associated historic sites inventoried by the BLM NHT Inventory Project, were identified along Alternative COUT BAX-C in Utah.

Biological, Natural, and Other Resources

Book Cliffs Analysis Unit. Alternative COUT BAX-C in Utah has the same biological, natural, and other resources associated with the Book Cliffs Analysis Unit of the Old Spanish NHT as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. Alternative COUT BAX-C in Utah has similar biological, natural, and other resources associated with the San Rafael Swell Analysis Unit as those described for Alternative

COUT BAX-B, except for Cottonwood Wash and the spring in Big Hole Wash since this route does not utilize Link U730 and would not be located in proximity to the features.

Environmental Consequences (Utah)

Old Spanish National Historic Trail

Alternative COUT BAX-C in Utah would have the same impacts on the Book Cliffs Analysis Unit of the Old Spanish NHT as Alternative COUT BAX-B.

Trail Components

Alternative COUT BAX-C in Utah would have the similar impacts on the trail components as those described for Alternative COUT BAX-B.

Scenic and Recreation Resources

Low impacts are anticipated on scenery adjacent to U.S. Highway 6 (Dinosaur Diamond Scenic Byway) and the congressionally designated Old Spanish NHT alignment due to the existing transmission line, which has influenced the landscape character in this moderately sensitive landscape. Impacts on landscapes in Buckhorn Flat are similar to Alternative COUT BAX-B.

Moderate impacts would result on views from the Dinosaur Diamond Scenic Byway, a potential opportunity to interpret the Old Spanish NHT along its congressionally designated alignment, through the introduction of the Project that would parallel this scenic road. These impacts are associated with the additional transmission structures which are larger in scale than the existing transmission line as well as construction access roads, which due to the proximity to the road, would begin to dominate views in this area. To reduce these impacts, selective mitigation measures would be applied to minimize the construction of access roads to the extent practicable. To further reduce impacts on these views, the Project could be relocated farther to the east to utilize backdropping opportunities afforded by the Book Cliffs. It is important to note that these moderate impacts were the result of the presence of the scenic road, which may be used for a vicarious Old Spanish NHT experience, since low impacts were assigned to portions of the Project where there were no identified trail traces.

Similarly, moderate impacts would occur on views from the Green River Cutoff Road as this road roughly parallels the congressionally designated alignment and may be used to interpret the Old Spanish NHT. To reduce these impacts, selective mitigation measures would be applied to limit the construction of access roads and minimize right-of-way vegetation clearing in areas with pinyon-juniper vegetation to the extent practicable. To reduce these impacts further, the Project would need to be located farther to the north to utilize existing screening opportunities. Impacts on recreation opportunities in Buckhorn Flat, including the Cedar Mountain Overlook and Picnic Area, San Rafael Swell Kiosk, Wedge Overlook/Buckhorn Draw Scenic Backway, and San Rafael Swell Canyon ACEC are similar to Alternative COUT BAX-B. In addition, impacts on ROS areas are similar to Alternative COUT BAX-B.

Historic and Cultural Resources

Alternative COUT BAX-C in Utah would have similar impacts on the setting for the Old Spanish NHT, adjacent to NHT II and III trail traces, in Cottonwood Wash and Furniture Draw as Alternative COUT BAX-B except the trail traces in Cottonwood Wash would not be paralleled for 20 miles, instead the Project crosses a segment of NHT V between two segments of NHT III. It is important to note Alternative COUT BAX-C would not directly cross any NHT II or III trail traces.

Biological, Natural, and Other Resources

Alternative COUT BAX-C would have similar impacts as Alternative COUT BAX-B as the Project would result in a low impact on the pinyon-juniper vegetation crossed adjacent to Cedar Mountain and the canyons in the San Rafael Swell since this vegetation community is common and selective mitigation measures identified for scenic and recreation resources would minimize right-of-way vegetation clearing to the extent practicable.

Alternative COUT BAX-E

Affected Environment and Environmental Consequences (Colorado)

Old Spanish National Historic Trail

Alternative COUT BAX-E in Colorado would have the same affected environment and environmental consequences for the Old Spanish NHT is the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Old Spanish National Historic Trail

Trail Management

Nature and Purpose. Alternative COUT BAX-E in Utah is the same as Alternative COUT BAX-B.

Primary Use(s). Alternative COUT BAX-E in Utah is the same as Alternative COUT BAX-B.

National Trail Right-of-way and Management Corridor. Alternative COUT BAX-E in Utah is the same as Alternative COUT BAX-B.

Trail Components. Alternative COUT BAX-E in Utah has the same trail components associated with the Book Cliffs Analysis Unit as Alternative COUT BAX-B.

In the San Rafael Swell Analysis Unit, west of Green River, the Project crosses the first portion of the NHT II and III traces described for Alternative COUT BAX-B adjacent to Cottonwood Wash. Specifically, Link U488 crosses an NHT V trace but would be located adjacent to an NHT III trace in Saleratus Wash. No trail-associated historic sites were identified by the BLM NHT Inventory Project in this area.

Scenic and Recreation Resources

Book Cliffs Analysis Unit. Alternative COUT BAX-E in Utah has the same scenic and recreation resources associated with the Book Cliffs Analysis Unit as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. Alternative COUT BAX-E in Utah has the same scenic and recreation resources described for Alternative COUT BAX-C along U.S. Highway 6 (Link U488).

Historic and Cultural Resources

No additional historic and cultural resources, beyond the trail traces inventoried by the BLM NHT Inventory Project, were identified along Alternative COUT BAX-E.

Biological, Natural, and Other Resources

Book Cliffs Analysis Unit. Alternative COUT BAX-E in Utah has the same biological, natural, and other resources associated with the Book Cliffs Analysis Unit of the Old Spanish NHT as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. Alternative COUT BAX-E in Utah has the similar biological, natural, and other resources associated with the San Rafael Swell Analysis Unit as those described for Alternative COUT BAX-C.

Environmental Consequences (Utah)

Old Spanish National Historic Trail

Alternative COUT BAX-E in Utah would have the same impacts on the Book Cliffs Analysis Unit of the Old Spanish NHT as Alternative COUT BAX-B.

Trail Management

Alternative COUT BAX-E in Utah would have similar impacts on the trail components as those described for Alternative COUT BAX-B.

Scenic and Recreation Resources

Alternative COUT BAX-E in Utah would have the same impacts on scenic and recreation resources as Alternative COUT BAX-C along U.S. Highway 6 (Link U488).

Historic and Cultural Resources

Alternative COUT BAX-E in Utah would have the same impacts on the setting for the Old Spanish NHT, adjacent to NHT III trail traces in Cottonwood Wash, as Alternative COUT BAX-C.

Biological, Natural, and Other Resources

Alternative COUT BAX-E in Utah would have similar impacts on riparian vegetation as Alternative COUT BAX-C.

Colorado to Utah – U.S. Highway 40 to Central, Utah, to Clover (COUT)

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to the COUT alternative routes, this section is not pertinent for analysis of the Project.

3.2.19.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

Trail Management

Trail management for the Cherokee Historic Trail is the same as described for Alternative WYCO-B.

Scenic and Recreation Resources

Scenery associated with the Cherokee Historic Trail, located in the northern portion of Siting Area A, is comprised of ridges descending from Powder Rim (Class B) north of Cherokee Creek along the Wyoming/Colorado border. An existing pipeline corridor traverses the northern edge of the area that has modified the existing vegetation patterns. The BLM Rawlins Field Office has inventoried high concern areas adjacent to the Cherokee Historic Trail in this area associated with Powder Rim and the Greater Adobe Town Area. The area adjacent to the historic trail in the siting area occurs in the foreground/middleground distance zone. Through development of the VRI, the BLM Rawlins Field Office identified VRI Class II areas on Powder Rim, which comprise the northern portion of the siting area, adjacent to the Cherokee Historic Trail. As managed under the amended BLM Rawlins Field Office RMP, the portion of the siting area in proximity to this historic trail would occur in VRM Class III lands.

There are limited recreation opportunities associated with the Cherokee Historic Trail, in Siting Area A, except for recreationists traveling along the trail alignment or using the adjacent Shell Creek Stock Trail to access the historic trail. Complete ROS data for the BLM Rawlins Field Office has not yet been developed at this time.

Historic and Cultural Resources

This siting area contains a few contributing trail traces associated with the Cherokee Trail 1850 alignment, including a 2.5-mile long contributing trail trace north of Cherokee Draw that is crossed by the existing pipeline corridor.

Biological, Natural, and Other Resources

No unique biological or natural resource issues were identified for the Cherokee Historic Trail in this area.

Environmental Consequences

Trail Management

Since the Cherokee Historic Trail is under feasibility study, there are no impacts directly on the trail components.

Scenic and Recreation Resources

Impacts on scenery adjacent to the Cherokee Historic Trail would be most intense if this facility were sited in the Powder Rim landscape, which was identified by the BLM Rawlins Field Office as a highly sensitive landscape. The introduction of vertical structures associated with the facility would be incongruent with the existing landscape character since there are few existing structures in this area, in addition to the earthwork required to produce a level site. Furthermore, views from the Shell Creek Stock Trail, atop Powder Rim, may become dominated by this facility due to the superior viewer position where the geometric form of this facility would be inconsistent with landscapes in the existing viewshed except for the vegetation clearing associated with the existing pipeline corridor. To minimize these effects on scenic and recreation trail resources, this facility should be located in the central portion of Siting Area A where there are existing structures and where existing topography could be utilized to diminish the physical presence of this facility as viewed from the Cherokee Historic Trail.

Historic and Cultural Resources

The setting for the Cherokee Historic Trail, adjacent to contributing trail traces, may become dominated by this facility if sited in proximity to these traces since the existing pipeline corridor only locally dominates the trail setting. Furthermore if this facility were sited over these trail traces, where previously undisturbed by the pipeline corridor, there would be additional potential effects on these traces through direct impacts on trail-associated cultural resources. To minimize these effects, the Project should be sited in the central portion of Siting Area A as described for scenic and recreation resources. Additionally the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color would further reduce these effects.

Biological, Natural, and Other Resources

Since there were no biological or natural resource issues identified for the Cherokee Historic Trail in Siting Area A, there would be minimal impacts on these trail resources.

Siting Area B – Nine Mile Basin

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area B, this section is not pertinent for analysis of the Project.

Siting Area C – Maybell

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area C, this section is not pertinent for analysis of the Project.

Alternative WYCO-C

Siting Area A – Powder Wash

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area B, this section is not pertinent for analysis of the Project.

Siting Area C – Maybell

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area B, this section is not pertinent for analysis of the Project.

Alternative WYCO-D

Siting Area D – Bell Rock

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area D, this section is not pertinent for analysis of the Project.

Alternative WYCO-F

Siting Area A – Powder Wash

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area B, this section is not pertinent for analysis of the Project.

Siting Area C – Maybell

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area C, this section is not pertinent for analysis of the Project.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

Affected Environment

Trail Management

Trail management for the Old Spanish NHT, San Rafael Swell Analysis Unit, is the same as described for Alternative COUT BAX-B. Trail traces identified in Siting Area G include NHT III condition trail traces in Saleratus Wash along the northern portion of the siting area adjacent to an existing 345kV transmission line.

Scenic and Recreation Resources

Scenery associated with the Old Spanish NHT in Siting Area G, is comprised of desert flat landscapes (Class C) typical of the Canyon Lands section the Colorado Plateaus physiographic province with the addition of a narrow riparian corridor, Saleratus Wash, which is traversed by the Old Spanish NHT. An existing 345kV transmission line bisects the siting area and influences the character of landscapes associated with the Old Spanish NHT. The BLM Price Field Office has inventoried high concern areas adjacent to I-70 with moderate concern areas to the north, associated with Humbug Flats, and low concern areas to the south associated with the San Rafael Desert. The area adjacent to the historic trail in this siting area occurs in the foreground/middleground distance zone. Through development of the VRI, the BLM Price Field Office identified VRI Class III areas adjacent to I-70 with the remaining portion of the siting area designated as VRI Class IV. As managed under the BLM Price Field Office RMP, the portion of the siting area in proximity to this historic trail would occur in VRM Class III lands.

Recreation opportunities associated with the Old Spanish NHT are limited in Siting Area G, except for motorists on the Dinosaur Diamond Scenic Byway (U.S. Highway 6) that is located in proximity to the Old Spanish NHT congressionally designated alignment. It is important to note that no identified trail traces are located in proximity to this scenic byway in the siting area.

Historic and Cultural Resources

No additional historic and cultural resources, beyond the trail traces inventoried by the BLM NHT Inventory Project, were identified in Siting Area G.

Biological, Natural, and Other Resources

No unique biological or natural resource issues were identified for the Old Spanish NHT in Siting Area G.

Environmental Consequences

Trail Management

Impacts on trail components are the same as those described for Alternative COUT BAX-B.

Scenic and Recreation Resources

Impacts on scenery adjacent to the Old Spanish NHT would be most intense if this facility were sited in proximity to I-70, which was identified by the BLM Price Field Office as a highly sensitive landscape. An existing transmission line has locally influenced scenery in a portion of Siting Area G that provides an opportunity, if this facility were sited adjacent to the interstate, to minimize effects from the introduction of additional vertical structures in this highly sensitive landscape.

Views from the Dinosaur Diamond Scenic Byway (U.S. Highway 6) would become influenced and potentially dominated, depending where this facility is sited, where motorists would have an opportunity to interpret the Old Spanish NHT along its congressionally designated alignment. To minimize effects on these views, this facility should be sited adjacent to existing landscape modifications or where there are opportunities to utilize topographic screening to diminish the physical presence of this facility. Additionally the application of selective mitigation measures to minimize earthwork activities and match the color of the rock in the yard with the adjacent soil color would further reduce these effects.

Historic and Cultural Resources

The setting for the Old Spanish NHT, adjacent to NHT III trail traces in Saleratus Wash, may become dominated by this facility if sited where views of the existing transmission line are screened. These effects are a result of the vertical structures and earthwork associated with this facility that would be incongruent with the existing setting. To minimize effects on the setting adjacent to these trail traces, this facility should not be sited in proximity to these trail traces but instead located adjacent to existing modifications where views from these trail traces could be screened to the extent practicable by topography.

Biological, Natural, and Other Resources

Since there were no biological or natural resource issues identified for the Old Spanish NHT in Siting Area G, there would be minimal impacts on these trail resources.

Alternative COUT-A

Siting Area F – Roosevelt

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area F, this section is not pertinent for analysis of the Project.

Alternative COUT-B

Siting Area F – Roosevelt

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area F, this section is not pertinent for analysis of the Project.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area E, this section is not pertinent for analysis of the Project.

Alternatives COUT-H and COUT-I (Applicant Preferred Alternative)

Siting Area E – Bonanza

Since no designated NHT, NST, or trails undergoing a feasibility study for inclusion with the National Trails System are adjacent to Siting Area E, this section is not pertinent for analysis of the Project.

3.2.20 Cultural Resources

Cultural resources, as broadly defined in BLM Manual 8100, are locations of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term "cultural resources" includes archaeological, historical, or architectural sites, structures, or places with important public and scientific uses and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. They are recognized as fragile and irreplaceable material, places, and things with potential public and scientific uses.

3.2.20.1 Introduction and Regulatory Framework

Federal agencies must consider the effects of their actions on cultural resources under NEPA and under Section 106 of NHPA (54 U.S.C. 306108; 36 CFR 800). Specifically, Section 106 of the act directs federal agencies to take into account the effects of their actions on historic properties and provide the ACHP a reasonable opportunity to comment. The Section 106 process is separate from, but often conducted parallel with, the preparation of an EIS.

Other federal legislation applicable to cultural resources in the Project area includes:

- The American Antiquities Act of 1906 (16 U.S.C. 432-433) authorizes federal land-management agencies to manage through a permit process the excavation and/or and removal of archaeological resources on federal lands.
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa to 470ee) authorizes federal land-management agencies to manage through a permit process the excavation and/or removal of archaeological resources on federal lands. These agencies must consult with American Indian tribes with interests in resources prior to issuance of permits.
- Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) (25 U.S.C. 3001-3002) provides a process through which federal agencies consult with affected Native Americans regarding the treatment and return of human remains, funerary objects, sacred objects, and items of cultural patrimony identified on federal lands as a result of a federal action.
- Executive Order 13007, issued in 1996 directs federal land-management agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.
- Executive Order 11593, issued in 1971 directs federal land-management agencies to (1) administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; (2) initiate measures necessary to direct their policies, plans, and programs in

such a way that federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; and (3) in consultation with the ACHP (54 U.S.C. 304102), institute procedures to assure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance.

In addition, the SHPO for each state involved (Wyoming, Colorado, and Utah) is responsible for ensuring that the Project's effects on lands under the jurisdiction of the state are considered under applicable state laws and that state cultural resources and historic properties laws are followed.

State of Wyoming statutes and guidelines include the following:

- Wyoming Antiquities Act of 1935 (Wyoming State Lands Title 36-1-114-116) requires a permit be obtained from the state to survey, conduct limited testing, or excavate (archaeological data recovery or extensive testing) on any lands owned or controlled by the state.
- Wyoming Environmental Quality Act of 1973 requires the Land Quality Division and the Industrial Siting Division to consider the potential for projects to have adverse environmental impacts, including impacts on archaeological and historic resources.
- Wyoming State Lands Commission Rules, Chapter 3, Section 9 requires that steps shall be taken in the construction and use of easements to protect and preserve archaeological, paleontological, historical, and any other cultural resources on state land.

State of Colorado statutes and guidelines include the following:

- The Historical, Prehistorical, and Archaeological Resources Act of 1973 (C.R.S. 24-80-406) requires a permit be obtained from the state for the investigation, excavation, gathering, or removal from the natural state of any historical, prehistorical, and archaeological resources in the state and determine whether or not the applicants for such permits are duly qualified to conduct investigations in the field for which the permit is requested.
- Colorado Land Use Act (C.R.S. 24-65.1-202) mandates that development in areas containing historical, archaeological, or natural resources shall be conducted in a manner that will minimize damage to those resources for future use.
- Abuse of a Corpse (C.R.S. 18-13-101) provides the definitions and penalties for the abuse or desecration of the body or remains of any person. It is declared that this act is necessary for the immediate preservation of the public peace, health, and safety.

State of Utah statutes and guidelines include the following:

- UAC Sections 9-8-305 and R694-1 require a permit be obtained from Utah Governor's PLPCO to survey or excavate on any lands owned or controlled by the state, its political subdivisions, or by SITLA.
- UAC Section 9-8-309 provides a process through which landowners or land-management agencies consult with the state regarding the treatment of human remains discovered on nonfederal lands that are not state owned.
- UAC Section 9-8-403 provides a process for the ownership and disposition of Native American human remains discovered on nonfederal lands that are not state owned.
- UAC Section 9-8-404 establishes agency responsibilities where the SHPO will comment on state-funded undertakings. Specifically, this portion of the code directs state agencies to take into

account the effects of their actions on historic properties and provide the SHPO and PLPCO a reasonable opportunity to comment.

- UAC Section 76-9-704 provides the definitions and penalties for the abuse or desecration of a dead human body.
- UAC Section R212-4 provides a process to assure the respectful, lawful, and scientifically sound treatment of Native American burial sites discovered on nonfederal state lands and provides procedures for the final disposition of unidentified or unaffiliated Native American remains discovered on nonfederal state lands.
- UAC Section R230-1 requires that if human remains are discovered in conjunction with a project subject to Section 106, the project proponent is responsible for all efforts associated with the excavation, analysis, curation, or repatriation of the human remains and for notifying the Utah SHPO.

3.2.20.1.1 Defining Historic Properties

As previously stated, Section 106 directs federal agencies to take into account the effects of their actions on historic properties. Historic properties are cultural resources that are either eligible for or listed in the NRHP. Historic properties must demonstrate importance in American history, architecture, archaeology, engineering, or culture. Per 36 CFR 60.4, properties are considered significant in these categories if they meet one or more of the following criteria:

(A) are associated with events that have made a significant contribution to the broad patterns of our history; or

(B) are associated with the lives of persons significant in our past; or

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

(D) have yielded, or may be likely to yield, information important in prehistory or history.

In addition to demonstrating significance, a historic property must demonstrate integrity, which is based on the following seven aspects: location, setting, design, materials, workmanship, feeling, and association.

3.2.20.1.2 Cultural Resources Task Group and Section 106 Consultation

As lead federal agency for compliance with Section 106 of the NHPA, the BLM initiated Section 106 consultations with various federal and state agencies pursuant to 36 CFR Part 800.6 and 800.14 (b) of the ACHP's regulations. The SHPOs of Wyoming, Colorado, and Utah were invited to participate in January 2012; and the ACHP was invited in March 2012.

Early in the EIS process, the BLM also initiated contact with cooperating agencies in accordance with various environmental laws and Executive Orders to form a specialized task group, composed primarily of professional archaeologists and historians, for the purpose of identifying, assessing, and resolving cultural resource issues associated with the Project. This formalized group, known as the CRTG, meets monthly to discuss Project status, issues, methodologies, and approaches. Participants in the CRTG include representatives from the BLM, USFS, BIA, FWS, SITLA, PLPCO, NPS, Colorado SHPO, Utah

SHPO, and Wyoming SHPO. The BLM Wyoming State Office is serving as the lead agency for the CRTG.

A primary task of the CRTG is to ensure compliance with Section 106 of the NHPA. The Section 106 process involves four steps: (1) initiate the process, (2) identify historic properties, (3) assess adverse effects on historic properties, and (4) resolve adverse effects on historic properties. Section 106 encourages but does not require the preservation of historic properties. While avoidance is a means of resolving adverse effects on historic properties, minimizing or mitigating adverse effects is also a legal means of resolution.

Consultation under Section 106 is ongoing, and as allowed under the law (NHPA and its implementing regulations in 36 CFR 800.4), the BLM can implement a phased approach to cultural resource studies. Subpart C of 36 CFR Part 800 outlines program alternatives to the standard Section 106 process, one of which is the use of a Programmatic Agreement. A Programmatic Agreement is a legally binding document among parties that establishes a process for consultation, review, and compliance with Section 106 and obligates signatory parties to carry out the terms. The use of a Programmatic Agreement is allowed when effects on historic properties cannot be fully determined prior to the approval of an undertaking through the issuance of a ROD. Given the scope and complexity of the Project and to formalize guidance from the lead federal agency and other participating agencies, the CRTG has determined in consultation with the ACHP that a Programmatic Agreement will be executed for the Project.

The Programmatic Agreement will outline the stipulations to be followed concerning the identification, assessment, and treatment of historic properties for the Project in accordance with 36 CFR 800.14(b). Cultural resource studies to identify historic properties, and to assess and resolve adverse effects on those properties, will be conducted in support of Section 106 concurrently with the EIS phases of Project implementation.

The BLM is preparing a draft Programmatic Agreement in coordination with the CRTG to be reviewed by all signatory and concurring parties, including the BLM and other federal agencies with decision authority in the process, the SHPOs, the BIA, participating American Indian tribes, Project Applicant, and interested members of the public. The Programmatic Agreement will describe how the lead federal agency will comply with Section 106 through the completion of Class III intensive pedestrian inventories, preparation of Class III inventory reports, and preparation of Historic Properties Treatment Plan (HPTP) reports. To date, the signatory parties include the BLM, USFS, NPS, Bureau of Reclamation, USACE, BIA, and three SHPOs. Invited signatory parties include the Applicant, American Indian Tribes, SITLA, UDOT, and the URMCC.

3.2.20.2 Issues Identified for Analysis

Issues related to potentially significant effects on cultural resources raised by the public and agencies during Project scoping and preparation of the EIS include impacts on cultural resources, historic trails and other linear sites, NRHP-listed properties, TCPs, and ACECs with cultural resource components. Specific resources identified by the agencies include Old Spanish NHT, Cherokee Historic Trail, Overland Historic Trail, Dragon to Rangely Stage/Freight Road, U.S. Highway 6, Lincoln Highway, Union Pacific Railroad, Buckhorn Flat Railroad, Uintah Railway, D&RGW Railway and Canyon Pintado National Historic District. Additional resources include the MPNHA (Little Denmark Heritage District) and the Deerlodge Road, only entrance to the eastern portion of the Dinosaur National Monument in Colorado, which was constructed in 1966. Comments received from the public identified many of these same resources (e.g., Old Spanish NHT, Overland Historic Trail, Cherokee Historic Trail, the Uintah Railway, and Canyon Pintado National Historic District as well as the Fort Fred Steele Historic Site [Wyoming],

rock art sites and a possible solstice site in the Book Cliffs [Utah], rock art sites in Argyle Canyon [Utah], protection of historic structures located on private property, and the historic ghost town of Carbon [Wyoming]). Brief descriptions of specifically named resources by alternative region follow.

3.2.20.2.1 Wyoming to Colorado

Alternative WYCO-B (Agency and Applicant Preferred Alternative), WYCO-C, WYCO-D, and WYCO-F

Overland Historic Trail

The Overland Historic Trail was a principal overland stage and emigrant trail route between Kansas and Utah that was used intensively between 1862 and 1869 (Junge 1975; Johnson et al. 2005). The trail originated at Atchison, Kansas, and closely followed the Oregon Trail until Julesburg, Colorado. From this location, the trail shifted south. At Latham (present day Greeley, Colorado) the trail shifted north again, into Wyoming. The trail traversed roughly east-west across southern Wyoming to Fort Bridger in the southwest corner of the state. From there, the trail continued southwest along the Mormon Trail into Salt Lake City, Utah (Johnson et al. 2005). In the Project area, the trail traverses east-west across southern Wyoming through Sweetwater and Carbon counties (Map 3-15).

The Overland Historic Trail was likely blazed along a series of existing trails that crisscrossed the northern Plains and Rocky Mountains and were originally used by American Indian tribes, then fur trappers and explorers, and later emigrants (Junge 1975). The first documented use of a trail that would become the Overland Historic Trail is from 1825, when an expedition party of William H. Ashley followed portions of the trail in Wyoming (Junge 1975). In the early 1860s, the trail was used more intensively when the Overland Stage Company shifted its mail transport and passenger service operations from the Oregon Trail to the Overland Historic Trail for safety and cost-savings (Junge 1975; Johnson et al. 2005; Leicht 1984). With the completion of the Transcontinental Railroad in 1869, the need for mail service by stagecoach companies dwindled and the Overland Stage Company ceased operations along the trail (Junge 1975). It is estimated that between 1862 and 1868 more than 20,000 emigrants traveled the trail each year (Larson 2002).

The NPS is conducting a feasibility study to evaluate the addition of the Overland Historic Trail to the California NHT (NPS 2014c). The results of the feasibility study are pending; a draft study and EA are scheduled for public review in 2014 (NPS 2012). Additionally, a landmark along the Overland Historic Trail known as Red Rock (48SW771), located in Sweetwater County, Wyoming, is listed in the NRHP. The Red Rock site is one of the many historic landmarks alongside the Overland Historic Trail. It is located in the Washakie Basin, near the Sweetwater-Carbon county line, approximately 50 miles southwest of Rawlins. The sandstone rock monolith, which is approximately 120 feet in circumference and rises 20 feet, contains the engraved names of many mountain men, fur trappers, explorers, and emigrants who crossed the territory during the 1860s (Junge 1975). The site was listed in the NRHP on November 16, 1978.

Cherokee Historic Trail

The Cherokee Historic Trail is a 900-mile overland trail that was used primarily between 1849 and the 1890s (Fletcher et al. 1999; Leicht 1984). The trail originated in Tahlequah, Oklahoma, proceeded north-northwest through Kansas and Colorado, and then west across southern Wyoming, where it connected with other westward trails at Fort Bridger (Fletcher et al. 1999; Leicht 1984; NPS 2014c). In the Project area, the trail traverses east-west across southern Wyoming through Sweetwater and Carbon counties (Map 3-15). Many sections of the Cherokee Historic Trail are no longer visible and any remnants have been destroyed or obscured significantly from a combination of natural and cultural agents.

The trail traces its development to the California Gold Rush of the late 1840s when the route was blazed by Cherokee parties leaving Oklahoma in search of work in the gold fields (Leicht 1984). The first party to use the route did so in 1849; within a year, at least five more Cherokee parties travelled the route to reach California. Over the next four decades, the trail was a primary transportation corridor through the central Plains into the Rockies.

The NPS is conducting a feasibility study to evaluate the addition of the Cherokee Historic Trail to the California NHT (NPS 2014c). The results of the feasibility study are pending; a draft study and EA are scheduled for public review in 2014 (NPS 2012).

The Lincoln Highway

The Lincoln Highway, one of the first transcontinental roads, was the creation of Carl G. Fisher, a twentieth century entrepreneur, who in 1912 actively promoted the creation of a coast-to-coast highway originally called the "Coast-to-Coast Rock Highway." By late 1912, Fisher received a donation for the project from Henry Joy, the president of the Packard Motor Company, who suggested that good roads be built as a real memorial to President Abraham Lincoln (Hokanson 1988:8-9). The road name was later changed to the Abraham Lincoln Highway or Lincoln Highway.

The Lincoln Highway Association was formed in 1913 for the purpose of establishing "…a continuous improved highway from the Atlantic to the Pacific, open to lawful traffic of all description without toll charges" (Butko 2002). The Lincoln Highway Association announced the route of the Lincoln Highway on September 14, 1913. The highway, which began at Times Square in New York City and ended at the Palace of the Legion of Honor in San Francisco, played an important role in the evolution of highways leading up to the Dwight D. Eisenhower System of Interstate and Defense Highways of 1956, known as the "Greatest Public Works Project" in history (Butko 2002).

Fort Fred Steele Historic Site

Fort Fred Steele was established June 30, 1868, on the west bank of the North Platte River in south-central southern Wyoming. It was one of four U.S. military outposts—Fort D. A. Russell, Fort Sanders, and Fort Bridger being the others—in southern Wyoming that provided security along the Union Pacific's transcontinental railroad corridor. The fort was sited along the river to protect the line's bridge crossing over the North Platte River, and the rail line passed directly through the interior of the fort's boundary. The fort was decommissioned November 3, 1886 (M.E. Miller 2012). The fort is approximately 12 miles east of Rawlins, in Carbon County, Wyoming. It was listed in the NRHP in 1969 and designated a Wyoming State Historic Site in 2010.

Alternative WYCO-D

Ghost Town of Carbon, Wyoming

Carbon, Wyoming, is a historic coal mining town located approximately 10 miles east-southeast of Hanna in Carbon County, Wyoming. Founded in 1868 by the Union Pacific Railway, it was the first coal town settled in the state. During its peak between the late 1860s and the 1890s, the town flourished with seven coal mines operating in the vicinity that provided coal to the railway (Van Pelt 2012). However, by the turn of the twentieth century the mines were becoming depleted and the railway was preparing to open a new alignment that bypassed the town. The town of Carbon and its mines were abandoned in 1902 (Anderson 2012; Van Pelt 2012).

3.2.20.2.2 Colorado to Utah

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Old Spanish National Historic Trail

The Old Spanish NHT is a 1,200-mile-long trail that once was a major caravan trade route between Santa Fe, New Mexico and Los Angeles, California. The route was used primarily between 1829 and 1848. The earliest known exploration of this trail system by non-Native Americans was the 1776 Dominguez-Escalante expedition (Black and Metcalf 1986; Warner 1976). The Spanish friars were led by indigenous guides along the pathways that had already been in use for hundreds of years. Between 1776 and the 1820s, the trail network was used extensively by fur trappers, traders, and explorers. In 1829 commercial pack-mule caravans began making the trek to Los Angeles to trade goods. Highly valued commercial goods (e.g., raw wool and woven textiles) were transported from the New Mexico province to California where they were exchanged for horses and mules, which were equally valued in the deserts of the Southwest (Bradley 1999a). In the late 1840s, portions of the trail corridor in southwestern Utah began to see wagon traffic associated with Mormons expanding settlements and with emigrants traveling west from Utah to California. These portions of the trail are referred to commonly as The Mormon Trail and/or The Salt Lake Trail to Southern California (Crampton 1979).

In December of 2002, Congress designated the Old Spanish Trail as the fifteenth NHT; it is administered by the BLM and the NPS working with other federal, state, and local government agencies as well as private landowners.

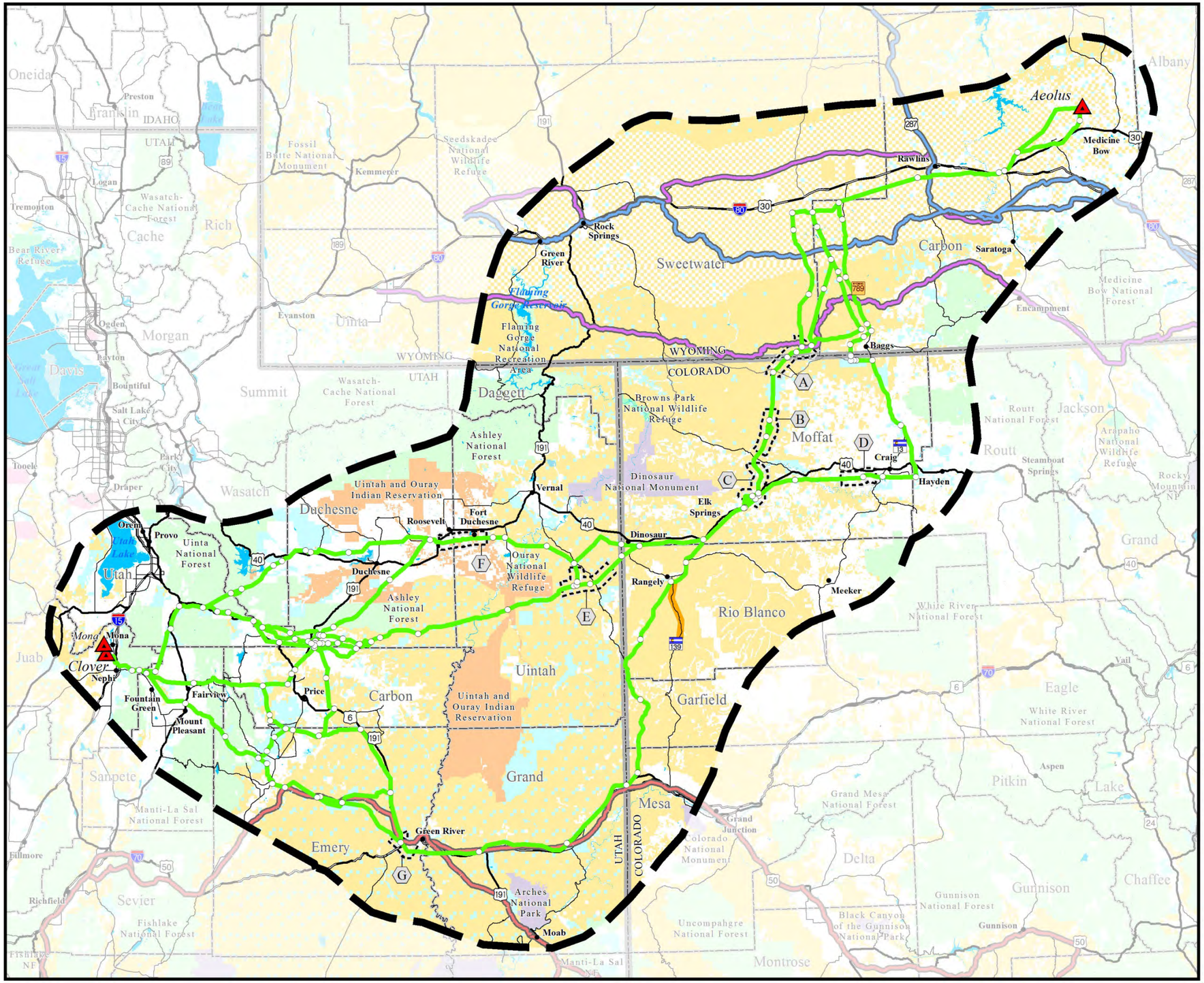
The Old Spanish NHT traverses much of southwestern Colorado and southern Utah. In the Project area, the trail stretches from slightly east of the Colorado/Utah border westward along I-70 and then through the San Rafael Swell (Map 3-15).

Uintah Railway

The Uintah Railway is a historic 36-inch narrow gauge rail line that operated between 1904 and 1938 in Uintah County, Utah, and in Mesa, Garfield, and Rio Blanco counties, Colorado. The line was constructed by the Barber Asphalt Paving Company for the sole purpose of transporting gilsonite, an asphaltic hydrocarbon mineral used in a variety of industrial products, from the numerous gilsonite mines in Utah to the standard gauge Rio Grande Western Railway interchange in Mack, Colorado (Bender 1995; Carr and Edwards 1989; Polley 1999, 2002). During operation, the line serviced mines at Dragon, Watson, and Rainbow, Utah (Carr and Edwards 1989).

Due to challenging topography and extreme seasonal weather patterns, the design, construction, and operation of the line was a remarkable engineering accomplishment. Grades between 1.5 percent and 7.5 percent were required to cross the mountain divide at Baxter Pass at an elevation of 8,437 feet above sea level. In addition, the line had two 65-degree hairpin curves, including one on a 7.5 percent grade at Moro Castle in Colorado (Carr and Edwards 1989).

Today, the old grade is still intact in many locations, and serves as the road in some areas. Other features of the line still visible include trestles and their embankments as well as the remnants of former water towers, sidings, section houses, and so forth.



Map 3-15

National Historic Trails and National Historic District

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

National Historic Trails[1] and National Historic District

- Old Spanish National Historic Trail
- Cherokee Historic Trail (under feasibility study)
- Overland Historic Trail (under feasibility study)
- Canyon Pintado National Historic District

Project Features

- Project Area Boundary
- Link Node
- Substation (Project Terminal)
- Series Compensation Station Siting Area
- Alternative Route

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- State Land
- Private Land

General Reference

- City or Town
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Old Spanish National Historic Trail, BLM 2002;
Overland Trail, NPS 2014; Cherokee Trail, NPS 2014;
Canyon Pintado National Historic District, Colorado SHPO 2012;
Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
Land Jurisdiction, BLM 2013; City or Town, ESRI 2013;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
[1]Including proposed National Historic Trails under feasibility study by the National Park Service
- The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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Dragon To Rangely Stage/Freight Road

The Dragon to Rangely Stage/Freight Road is a historic stage-freight toll road between Rangely, Colorado and Dragon, Utah. It was constructed by the Uintah Railway in 1906 (Hauch 1989). The road was used to transport gilsonite, freight, and passengers between Dragon and Rangely (Hauch 1989). The road was abandoned by the Uintah Railway when the company ceased operation in 1938; however, since then Rio Blanco County has maintained it as county road RB 116 (Hauch 1989). The historic road also encompasses portions of county road RB 23, south-southwest of Rangely. As a maintained county road, the historic alignment has remained basically intact, but the physical characteristics of the road have been modified and modernized over the course of the last 70-years. The Dragon to Rangely Stage/Freight Road also is known as Dragon Road, Old Dragon-Rangely Road, Dragon-Rangely Tool Road, and Dragon Trail.

Canyon Pintado National Historic District

Canyon Pintado National Historic District was listed in the NRHP in 1975 and was established to protect cultural resources present throughout the canyon. Cultural resources include hundreds of archaeological sites such as open lithic scatters, rock shelters, granaries, and rock art sites from the Fremont and Ute occupations of the area. The name derives from a 1776 journal entry by Frey Francisco Silvestre Velez de Escalante, who wrote about the rock art of the Cañon Pintado, (which means Painted Canyon) in his journal (BLM 2014b; Costales and Knight 1973a).

The Canyon Pintado National Historic District is located just south of Rangely, Colorado, and extends north-south in the vicinity of Colorado State Highway 139 (Map 3-15). It encompasses an area of approximately 16,000 acres (BLM 2014bc).

Buckhorn Flat Railroad

The Buckhorn Flat Railroad is a narrow gauge line that was partially constructed and eventually abandoned by the owner, the D&RGW Railway, in the early 1880s (Carr and Edwards 1989). The railroad was part of a larger plan to extend the D&RGW Railway to Los Angeles. The line originated at Green River, passed through Cottonwood Wash, then Buckhorn Flat, and into Castle Valley, where it was to branch into two lines; one north to Price with the intention of going on to Salt Lake City, and the other south over Salina Pass and toward California (Carr and Edwards 1989). The decision to abandon the line was not communicated to the head of the construction crews; and as a result, approximately 50 miles of bed were graded, numerous cuts and fills were made, and several tunnels were constructed (Carr and Edwards 1989).

Today, the old grade is still intact in many locations and serves as the road in some areas. Other features of the line still visible include cuts, fills, and culverts. In the Project area, the historic railroad grade stretches from Green River, Utah, through the San Rafael Swell.

Alternatives COUT BAX-C and COUT BAX E

Book Cliffs Archaeological Sites and Rock Art

The Books Cliffs are a series of steep vertical cliffs that form the southern terminus of the West Tavaputs Plateau, generally east-northeast of Price in Carbon County, Utah, and north of I-70 in Grand County, Utah. The cliffs reach elevations between 8,000 and 10,000 feet above sea level and are partially bisected by numerous small canyons (Stokes 1986). In these small canyons and throughout the cliff walls are numerous archaeological sites and rock art panels.

Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-A, COUT-B, and Alternative COUT-C (Agency and Applicant Preferred Alternative)

U.S. Highway 6

U.S. Highway 6 is one of the main routes of the U.S. Highway system, extending westward from Provincetown, Massachusetts, to Bishop, California, and south to Long Beach, California. It achieved transcontinental status in June 21, 1937, and was the longest route (3,652 miles) in the country, extending across 14 states (Weingroff 2011). Major William L. Anderson, Jr., of the U. S. Army conceived the idea of designating the route the Grand Army of the Republic Highway to honor the Union forces during the Civil War (Weingroff 2011). The name was formally adopted on May 3, 1953 (Weingroff 2011). Other segments of U.S. Highway 6 are designated as Old Route 6 Road or Highway 6 Trail in Iowa, Roosevelt Highway in Pennsylvania, Kings Highway in Massachusetts (Cape Cod), and Mike Dmitrich Highway from Price to Green River in Utah (Weingroff 2011). As a result of major changes in the highway numbering system in California (State Bill 64, effective July 1, 1964), U.S. Highway 6 became the second longest highway in the country at 3,227 miles, after U.S. Highway 20, which is 3,345 miles long (Weingroff 2011). Throughout history, numerous route modifications were made, most of them at a local level.

In Utah, sections of U. S. Highway 6 overlays with U.S. Highway 50, I-15, U.S. Highway 8, U.S. Highway 191, and I-70 for several miles. In Colorado, U.S. Highway 6 is concurrent with I-70 for a substantial portion of its length. East of Denver, the route extends east-northeast following the Interstate 76 corridor until it reaches Sterling. There, it diverges from the interstate and continues eastward. Portions of the route closely follow the path of the D&RGW Railroad from Spanish Fork, Utah to Glenwood Springs, Colorado, passing through the towns of Helper and Wellington in Utah (Roseman et al. n.d.).

Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-A, COUT-B, Alternative COUT-C (Agency and Applicant Preferred Alternative), COUT-H, and COUT-I

Union Pacific

Railroads were a central element in the development of the American West during the mid and late nineteenth century. Initial railroad development provided a rapid and inexpensive mode of transportation, large commercial networks, and an increased economy. Historical records indicate that legislation passed by the U.S. Congress encouraged the settling of the West and the building of transportation networks and communication links in the midst of the Civil War. In the mid1860s, soon after the Civil War, the laying of track officially commenced; the Central Pacific started building eastward from California and the Union Pacific built westward from Omaha, Nebraska (Carr and Edwards 1989).

On July 4, 1867, the Union Pacific crossed the town of Julesburg, Colorado, on its way to what would become Cheyenne in Dakota Territory (later Wyoming Territory). There, on November 13, 1867, General Grenville M. Dodge, the Union Pacific's chief engineer, laid out an end-of-the-track town (Urbanek 1988:36). By the end of 1868, railroad tracks had been laid through Wyoming, and continued on into Utah (Arrington 1969:7). On May 10, 1869, the Central Pacific and the Union Pacific railroads were joined at a rail camp at Promontory Summit, Utah (Carr and Edwards 1989: 7-18). At completion, the Union pacific traveled westwards across the Rocky Mountains at South Pass, continued westward roughly following the Overland Trail to the Green River, and then further west via Evanston in Uintah County, in present-day Wyoming toward the Great Salt Lake (Stone 1924:82).

Mormon Pioneer National Heritage Area (MPNHA)

One of the five heritage districts (Little Denmark) constituting the MPNHA is traversed by all alternative routes in Utah. The Little Denmark Heritage District represents the northern extent of the MPNHA and is

located in a region with an extensive cultural record. Hundreds of known cultural resources have been identified within the physical boundaries of this heritage district. They represent a variety of site types, functions, traditions, and chronological periods. Many of these cultural resources are listed in the NRHP or have been recommended or determined eligible for the NRHP. A number of historic properties are also listed in the MPNHA's management plan as structures to be preserved for their historical significance.

Baseline information on previously identified cultural resource sites was reviewed to determine if any are located in the portion of the heritage district crossed by the Project. Of these sites, the majority are prehistoric lithic and artifact scatters, prehistoric campsites and habitations, prehistoric lithic procurement areas, historic artifact scatters, historic campsites and habitations, livestock enclosures, waterworks, and transportation and utility corridors. Sites have been identified in all of the cultural resource intensity zones along this alternative route. NRHP-listed properties identified in the portions of the Project that cross the Little Denmark Heritage Area are concentrated in the towns of Nephi, Fairview, Mount Pleasant, Fountain Green, Clear Creek, Helper, and Huntington, Utah, outside of the Project APE. NRHP-listed properties consist primarily of historic buildings and historic districts (e.g., Wasatch Academy and Mount Pleasant's Main Street).

Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, and COUT-I

Denver and Rio Grande Western Railway

The D&RGW Railway was a historic narrow gauge line incorporated in July 1881 in Utah with the purpose of providing the Denver and Rio Grande (D&RG) Railway in Colorado access to markets in Utah, specifically markets not served by Union Pacific in Salt Lake City and throughout southeastern and central Utah (Carr and Edwards 1989; Taniguchi 1994). By 1883 through acquisitions of smaller railroads and construction of new lines, the company had united its existing line in Grand Junction, Colorado, with its line in Utah. In Utah, the line ran in a general northwest-southeast alignment through present-day Utah, Carbon, Emery, and Grand counties, then continued north through the Salt Lake area into Ogden (Carr and Edwards 1989; Taniguchi 1994). Although the D&RGW Railway is no longer in operation as a company, many of its lines, including the route between Grand Junction and Ogden, continue to operate as part of the Union Pacific system.

In the Project area, the historic railway extends from the Utah/Colorado border west to Green River, then northwest to Price, over Soldier Summit and down through Spanish Fork Canyon. Numerous historic features associated with both the narrow gauge and standard gauge lines are visible along the line (e.g., cuts, fills, culverts, siding, and stations), as well as features associated with the steam era (e.g., water tanks).

Alternatives COUT-B, Alternative COUT-C (Agency and Applicant Preferred Alternative), COUT-H, and COUT-I

Argyle Canyon Rock Art (Archaeological Sites)

In the canyons of eastern Utah, there are hundreds of rock art panels with thousands of images recording at least two millennia of human activity in the region, as well as human creativity and artistic achievement (Castleton 1984; Schaafsma 1986; Spangler 2002). One of the most well-known of these areas, Argyle Canyon, a side-canyon of Nine Mile Canyon, is in the Project area. It is a southeast-northwest trending canyon between Argyle Ridge to the south and Bad Land Cliffs to the north, south of Duchesne, Utah. There are numerous rock art panels in the canyon, as well as prehistoric lithic/artifact scatters, habitations, and ceremonial sites.

3.2.20.3 Cultural Context

3.2.20.3.1 Prehistoric Overview

For the purposes of this report, the discussion of the prehistory and cultural development of the Project area has been organized according to three contiguous and non-static geographic units (Map 3-16), in which groups shared distinctive cultural traits: the Eastern Great Basin, the Northern Colorado Plateau, and the Northwestern Great Plains.

These spatial expressions of cultural adaptations are based on generalizations of the archaeological record and are useful in describing regional affinities or differences in material culture and its spatial and temporal distribution, similarities or differences in subsistence patterns, and the dynamics that produced these similarities or differences among cultures and neighboring groups. The physical boundaries of these highly dynamic areas are not sharp lines of division, but rather overlap one another, except where there are significant geographic barriers. For further investigation of the three cultural areas employed herein, consult Frison (1991), Reed and Metcalf (1999), and Wood (1998) among others.

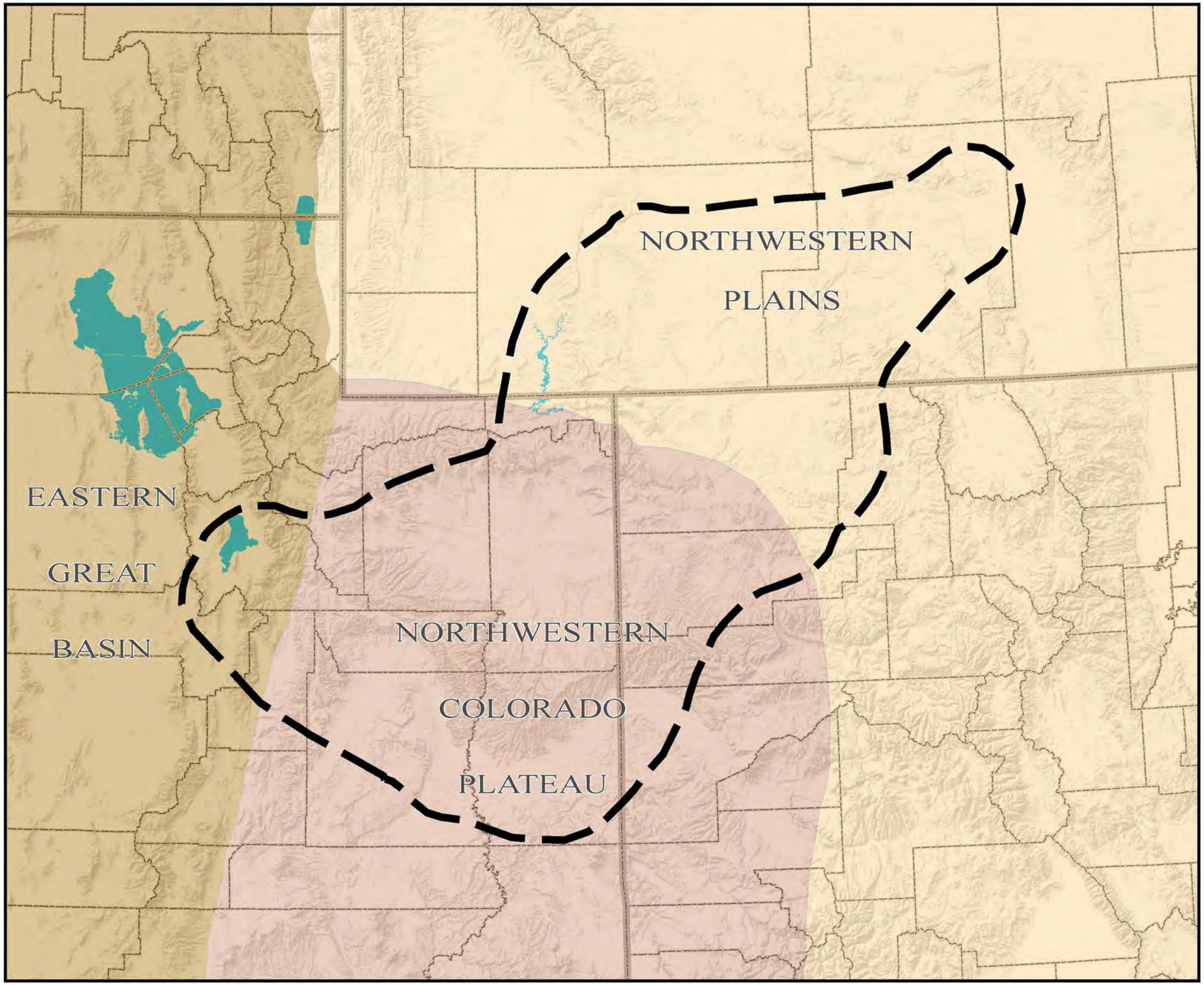
As previously mentioned, the Project area primarily falls in three major cultural areas (i.e., the Northwestern Plains to the northeast, the Northern Colorado Plateau to the east, and the Eastern Great Basin to the west), except for a small portion at the extreme east-central end that encroaches into the high-elevation ecosystems of the Southern Rocky Mountains (Map 3-16). The Great Basin, the Colorado Plateau, and the Great Plains cultural areas reflect a long and prolific account of archaeological, ethnological, and historical investigation as early as the 1930s (Jennings 1957; Steward 1938, 1940). Intensive archaeological investigations of cultural resources and cultural adaptations characteristic of these cultural areas have provided researchers with a wealth of interpretive material to complement or explain the archaeological record.

Archaeological evidence in the Project area has demonstrated human occupation for at least the past 13,000 years with the earliest dates in the Northern Colorado Plateau. Nomadic populations of hunters and gatherers inhabited what are now eastern Utah, northwestern Colorado, and south-central Wyoming for millennia until their encounter with Euro-Americans in the early- and mid-1800s.

The Northwestern Great Plains

The prehistoric cultural context for extreme south-central Wyoming, which includes portions of the Wyoming Basin and the northwestern extent of the Southern Rocky Mountains, is regarded as a subregion of the Northwestern Plains cultural area (Frison 1991). While terminology and temporal schemes sometimes differ between researchers for south-central Wyoming, the basic periods are as follows:

- **Paleoindian (ca. 11,500 to 8,500 B.P. [Before Present]).** Period of hunting (and probably gathering) prior to the onset of hunting and gathering adapted to dryer conditions.
- **Archaic (ca. 8,500 to 1,800 B.P.).** Period of increased focus on small game and exploitation of a myriad of plant resources.
- **Late Prehistoric (1,800 to 300 B.P.).** Period of increased dependence on seed-bearing floral resources, especially during times of dietary stress, and greater numbers of seasonal hunting and gathering rounds.
- **Protohistoric (ca. 250 to 150 B.P.).** Period of the introduction of horses and more efficient hunting methods that subsequently replaced traditional hunting strategies, primarily associated with historic Shoshone (Eastern Shoshone) groups.



Map 3-16

Prehistoric Culture Areas

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Prehistoric Culture Areas[1]

- Northwestern Colorado Plateau
- Eastern Great Basin
- Northwestern Plains

Project Features

- Project Area Boundary

General Reference

- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Prehistoric Culture Areas, EPG 2012;
Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
[1]These cultural areas are based on generalizations of the archaeological record and are useful in describing regional affinities or differences in material culture and its spatial and temporal distribution. The physical boundaries of these highly dynamic areas are not sharp lines of division, but rather overlap one another.

Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015

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The prehistoric cultural chronology of south-central Wyoming is based on adaptive strategies, technological developments, and distributions of radiocarbon dates from sites in the Wyoming Basin and outlying areas, especially the Northwestern Plains to the east, the northern Colorado Plateau to the south-southwest, and the Great Basin to the west and southwest. Table 3-259 includes a brief summary of the archaeological evidence of the prehistoric groups that inhabited the region in the Project area, as well as a summary of the temporal frameworks found in the Project area. This information was derived from the Class I data available for the Northwestern Great Plains. A more comprehensive description of the prehistoric groups of south-central Wyoming are referenced by Backer et al. (2001), Bruder and Rhodes (1993), Frison (1991), Frison and Stanford (1982), Hoefer et al. (2005:14-21), Ireland (1986), Metcalf (1987), Mulloy (1958), Smith and Creasman (1988), and Thompson and Pastor (1995).

TABLE 3-259
NORTHWESTERN GREAT PLAINS PREHISTORIC CULTURAL PHASES

Categories	Description
Paleoindian (ca. 11,500 to 8,500 B.P.)	
Generalized Lifeways	Small groups practicing a highly mobile subsistence strategy with an emphasis on now-extinct species of Pleistocene megafauna (e.g., giant bison, mammoth, camel, sloth) and a wide variety of opportunistic small- and medium-sized game (e.g., horse, antelope, deer, jackrabbit); groups collecting easily acquired plant resources. There is a greater emphasis on lower return rate resources during more arid conditions (Late Paleoindian).
Diagnostic Artifacts	Clovis, Goshen, Folsom, Agate Basin, Hell Gap, Alberta, Cody, Angostura, Lovell Constricted, Frederick, Pryor Stemmed, James Allen, Lusk, Eden, and Scotts Bluff projectile points.
Local Manifestations	Few surface sites and isolated finds of Clovis, Folsom, Agate Basin and Agate Basin variants, Hell Gap, Alberta, Cody, and Frederick projectile points; sites in southwestern and south-central Wyoming have not exhibited substantial evidence of hunting of megafauna or other big game animals as is common in sites of the Northwestern Plains area.
References	Backer et al. 2001; Frison 1991, 1998; Hoefer et al. 2005
Archaic – Early (Great Divide and Opal) and Late (Pine Spring and Deadman Wash) (ca. 8,500 to 1,800 B.P.)	
Generalized Lifeways	Groups practicing a highly mobile hunter-gatherer lifeway, characterized by small bands that relied on a wide variety of floral and faunal resources (seasonal, cyclic, foraging strategy). Medium- and large-sized mammals were the primary focus of subsistence; emphasis on higher ranked medium-sized to large mammals, wild plant resources, and widespread use of processing features, storage pits, basin-shaped hearths, and semi-subterranean habitation structures (Early). Continuation and intensification of land use and greater numbers of ground stone, floral resource processing tools are found in the archaeological record (Middle). More balanced economy relying more equally on hunting of large- and small-sized game (intensive bison, mountain sheep, antelope harvest) and the use of wild plant resource (e.g., berries, seeds, seedpods, leaves, tubers, roots) (Late).
Diagnostic Artifacts	Diversification of tool kits and decrease in the size of the projectile points; Pinto and Gatecliff Great Basin types, McKean Lanceolate, Duncan, Hanna, Mallory, Humboldt Concave Base, Opal Side-notched, Pelican Lake, Besant, Elko, and Rose Spring Series projectile points; coiled basketry production, and manos and metates.
Local Manifestations	Lithic and artifact scatters, complex campsites, and isolated architectural structures (pithouses, storage pits, stone circles), rock shelters, and thermal features.
References	Frison 1991; Hoefer et al. 2005; Metcalf 1987

TABLE 3-259 NORTHWESTERN GREAT PLAINS PREHISTORIC CULTURAL PHASES	
Categories	**Description**
Late Prehistoric – Uinta and Firehole Phase (1,800 to 300 B.P.)[1]	
Generalized Lifeways	Increased sedentism and increased dependency on seed-bearing floral resources, especially during times of dietary stress; increased seasonal hunting and gathering rounds that were dependent on the availability of faunal and floral resources; game drives and antelope trap sites increase in frequency during the late-stage of this period; interaction of Wyoming Basin groups with the Great Basin Fremont as evidenced by Fremont grayware pottery, ground stone implements, gilsonite beads, and rock art. Numic peoples expanded into the region after 1,000 B.P.
Diagnostic Artifacts	Introduction and widespread adoption of bow and arrow and use of small triangular, side-notched and corner-notched (Desert Side-notched, Cottonwood Triangular, and Prairie Side-notched) projectile points and numerous ground stone artifacts; Intermountain Ware ceramics (Shoshone). Numic peoples introduced Shoshonean ceramics and carved steatite vessels.
Local Manifestations	Lithic and artifact scatters, ceramic scatters, isolated habitation and storage structures, complex campsites, villages, and distinct rock art.
References	Frison 1991; Hoefer et al. 2005
Protohistoric – Historic Shoshone (ca. 1700 to 1800 A.D. [ca. 250 to 150 B.P.)[1]	
Generalized Lifeways	Highly mobile hunting and gathering populations living in temporary rock shelters, caves, skin tepees, and wood structures that utilized live trees and felled timbers; continuous exposure to Euro-American culture and shift from a pedestrian to a fully equestrian hunting and gathering lifeway (early 1700s). A Shoshone majority inhabited the region with occasionally Crow, Ute, Comanche, Flathead, Arapahoe, Cheyenne, Sioux groups passing through the area. Shoshonean influence expanded to the east due to equestrian utility and increased efficiency in hunting bison and other large mammals.
Diagnostic Artifacts	Euro-American goods (e.g., glass trade beads, tin cans, glass bottles, iron and brass metal items), metal knives, and projectile points are evident in the Shoshone cultural assemblage.
Local Manifestations	Artifact and ceramic scatters, campsites, rock shelters, brush shelters, and rock art.
References	Backer et al. 2001; Ewers 1955; Frison 1991; Hoefer et al. 2005; Shimkin 1986a, b; Thompson and Pastor 1995

NOTES:
[1]The transition between the Late Prehistoric and the Protohistoric periods is unclear in the archaeological record.
B.P. = Before present day
A.D. = Anno Domini

Northern Colorado Plateau and Eastern Great Basin

The prehistory of the Northern Colorado Plateau and Eastern Great Basin is commonly divided into several periods, each thought to represent a distinct subsistence strategy and way of life. While terminology and temporal schemes sometimes differ between researchers, the basic periods are as follows:

- **Paleoindian (ca. 13,450 to 8,350 before present [B.P.]).** Period of hunting (and probably gathering) prior to the onset of hunting and gathering adapted to fully desert conditions.
- **Archaic (ca. 8,350 to ca. 1,800 B.P.).** Period when small groups mostly depended on wild plants and animals.
- **Formative (ca. 2,000 to 700 B.P.).** Period of dependence on cultigens, most commonly associated with Fremont populations in the region.
- **Late Prehistoric-Protohistoric (ca. 800 to 175 B.P.).** Period after the abandonment of agriculture and the appearance of the types of hunting and gathering strategies practiced through

historic times by Ute and Shoshone groups in what is now northeastern Utah and Ute people in what is now northwestern Colorado.

Table 3-260 presents the chronology for the Eastern Great Basin and the Northern Colorado Plateau and outlines the archaeological evidence of the prehistoric groups that inhabited this portion of the Project area. A more comprehensive description of the archaeological complexes mentioned above are referenced by Aikens and Madsen (1986), Baker (1988, 1996), Buckles (1971), Cassells (1997), Fiedel (1999), Graf and Schmitt (2007), Grayson (1993), Janetski et al. (2012), Jennings (1978; 1986), R.L. Kelly (1997), Kelly and Todd (1988), Leacock and Lurie (1971), Lipe and Pitblado (1999), Lipe et al. (1999), Madsen and Berry (1975), Madsen and Simms (1998), Marwitt (1986), O'Neil (1993), Pitblado (1994, 2003), Reed and Metcalf (1999), Schroedl (1976, 1991, 1992), Simms (2008), Spangler (2001), Stiger (2001), Stiger and Larson (1992), Talbot et al. (1998), and Willey (1966).

TABLE 3-260
EASTERN GREAT BASIN AND NORTHERN COLORADO PLATEAU
PREHISTORIC CULTURAL PHASES

Categories	Description
Paleoindian (ca. 13,450 to 8,350 B.P.)[1]	
Generalized Lifeways	Small groups practicing a highly mobile subsistence strategy of hunting large game mammals (e.g., giant bison, mammoth, camel) and a wide variety of opportunistic small- and medium-sized game (e.g., horse, antelope, deer, jackrabbit); groups collecting easily acquired berries, seeds, roots, and nuts. There is a greater emphasis on lower return rate resources during more arid conditions (Late Paleoindian).
Diagnostic Artifacts	Fluted projectile points (Clovis, Goshen, Folsom), unfluted projectile points (specifically Black Rock Concave base and Great Basin Concave base variants), and large stemmed projectile points of the Western Stemmed Tradition (Silver Lake and Lake Mojave) and Windust varieties.
Local Manifestations	Few surface sites and isolated finds of Clovis, Goshen, Folsom, Angostura, Hell Gap, Agate Basin, Alberta, Pryor Stemmed, Medicine Lodge, Scottsbluff II, Great Basin Stemmed, Fredrick, James Allen, possible Black Rock Concave Base, Plainview, and un-typed projectile points.
Notes	Much of the evidence of Paleoindian activity in the Great Basin comes from areas surrounding Pleistocene lakes and marshes as is the case of Danger Cave. A similar adaptation has not been proposed for the Colorado Plateau, characterized more by deep canyons and high plateaus rather than lakes, where evidence of exploitable Pleistocene fauna is associated with riparian areas along river corridors.
References	Beck and Jones 1997; Copeland and Fike 1988; Currey and James 1982; Davis 1989; Fiedel 1999; Gilbert et al. 2008; Graf and Schmitt 2007; Grayson 1993; Janetski et al. 2012; Kelly and Todd 1988; R.L. Kelly 2001; Lipe and Piblado 1999; Lipe et al. 1999; D.B. Madsen 2007; Pitblado 1994, 1999; Reed and Metcalf 1999; Rhode et al. 2006; Schroedl 1991; Smith et al. 2007; Spangler 2001; Stiger 2001; Talbot et al. 1998; Willey 1966)
Archaic (ca. 8,350 to ca. 1,800 B.P.)[1]	
Generalized Lifeways	Groups practicing a highly mobile hunter-gatherer lifeway, characterized by small bands that relied on a wide variety of floral and faunal resources (seasonal, cyclic, foraging strategy); continued or increased emphasis on large game; increased focus on smaller game and a greater dependence on plant resources (Early Archaic); expansion into upland pinyon-juniper communities using milling stones, atlatls, and small game traps (Middle to Late Archaic); sedentary subsistence patterns, manufacturing of pottery (Late/Terminal Archaic), and introduction of domesticated maize (Terminal Archaic); growing populations leading to refinement of social organization and settlement and subsistence patterns; the end of the Archaic era is characterized by experiments with new subsistence patterns, including maize horticulture and a shift toward seed processing. Archaic adaptations farther east (present-day northwestern Colorado) have been divided into four time periods based exclusively on interpretations of the archaeological record derived from

TABLE 3-260
EASTERN GREAT BASIN AND NORTHERN COLORADO PLATEAU
PREHISTORIC CULTURAL PHASES

Categories	Description
	local sites and cultural chronologies: (1) Pioneer (subsistence practices targeted both floral and faunal resources acquisition with faunal resources playing a central role), (2) Settlement (widespread use of processing features, further development of storage techniques, and use of pit and basin structures for habitation), (3) Transitional (less sedentary settlement pattern and possibly greater seasonal use of higher elevations), and (4) Terminal (increase in population, reduced residential ranges, and intensification of subsistence practices).
Diagnostic Artifacts	Proliferation of projectile point forms, including Pinto Series, Gypsum, Humboldt Concave base, Hawken Side-notched, Mckean Lanceolate, Sudden Side-notched, Rocker Side-notched, Elko Series, San Rafael Stemmed, McKean, Mallory, Northern Side-notched, Gatecliff Contracting Stem, Bitterroot Side-notched, Mt. Albion, Duncan, and Hanna projectile points; evidence of pottery and coiled basketry.
Local Manifestations	Lithic and artifact scatters, ceramic scatters, numerous stone structures (habitation and storage pits), thermal features, shelters, complex campsites, and possible rock art manifestations; ground stone artifacts are found in high numbers in the archaeological record.
Notes	With regard to northwestern Colorado, the beginning and the end for the Archaic is somewhat arbitrary. The Archaic has been defined as both a time of cultural change and cultural continuity, and no single defining characteristic separates this stage from Paleoindian or Formative occupations.
References	Aikens and Madsen 1986; Beck and Jones 1997; Cassells 1997; Graf and Schmitt 2007; Holmer 1979; Janetski et al. 2012; Jennings 1978; Johnson and Loosle 2000; Marwitt 1986; Reed and Metcalf 1999; Schroedl 1976, 1991, 1992; Simms 2008; Spangler 2001, 2002; Spangler and Yentsch 2010; Stiger 2001; Talbot et al. 1998
Formative (ca. 2,000 to 700 B.P.)	
Generalized Lifeways	Important shift in the economic adaptations of prehistoric peoples; increased sedentism, cultivation of domesticated plants (e.g., maize, beans, squash), and appearance of villages; increased social complexity and trade (turquoise and shell); substantial midden deposits and storage structures. With regard to the Eastern Great Basin and the western half of the Northern Colorado Plateau (present-day northeastern Utah), the Project area spans the territory of three Fremont variants: the Sevier, San Rafael, and Uinta Fremont. There is evidence of semi-subterranean pithouses and aboveground adobe or jacal structures, including rectangular surface storage structures. Both horticultural and non-horticultural groups occupied the eastern half of the Northern Colorado Plateau (present-day northwestern Colorado). Horticulture was practiced in the lower elevations of western Colorado. Horticultural groups in this region are divided into the Fremont (Early Fremont, Scoggin, Wenger, and Texas Creek Overlook) and Gateway Traditions; increased social complexity and trade, universal use of granaries, complex residential sites with highly patterned residential site layout, and construction of water control structures are characteristic of these traditions. The Aspen Tradition refers to the non-horticultural inhabitants of the higher elevation zones of the Northern Colorado Plateau in northwestern Colorado; seed procurement and the presence of Rosegate projectile points, grayware ceramics, and stone structures are characteristic of this tradition.
Diagnostic Artifacts	Small corner-notched (Rose Spring Corner-notched, Parowan Basal-notched, and Eastgate Expanding-stem) and side-notched (Uinta and Nawthis Side-notched), Bull Creek projectile points, Desert Side-notched projectile points, and Cottonwood Triangular projectile points. Additional artifacts include thin-walled grayware ceramics (Uinta Grayware, Sevier Grayware, Snake Valley Grayware, Snake Valley Black-on-Gray, Snake Valley Corrugated, and undetermined Fremont), clay figurines, and moccasins; highly elaborate rock art; replacement of atlatl hunting technology with that of the bow and arrow. Evidence of a distinctive coiled pottery (Emery Gray, Uinta Gray, Douglas Creek Gray) and one-rod-and-bundle basketry in northwestern Colorado; presence of Anasazi trade-ware (low

TABLE 3-260
EASTERN GREAT BASIN AND NORTHERN COLORADO PLATEAU
PREHISTORIC CULTURAL PHASES

Categories	Description
	densities) in the archaeological record (primarily in the vicinities of the Green and Yampa rivers).
Local Manifestations	Lithic and artifact scatters, ceramic scatters, isolated habitation and storage structures, complex campsites, small villages (situated on alluvial fans near canyon mouths and permanent water sources), and distinct rock art manifestations.
Notes	The understanding of the transition from hunting and gathering adaptations to lifeways incorporating horticulture has been furthered by chronometric dating of corn from several sites in western Colorado and eastern Utah. The dates indicate that corn was used to varying degrees by groups in the region at least as early as 2,220 B.P.
References	Barlow 2006; Coltrain et al. 2007; Holmer and Weder 1980; Hughes and Bennyhoff 1986; Janetski et al. 2000; Jennings 1978; D,B. Madsen 1982; Madsen and Simms 1998; Marwitt 1986; Price 2008; Reed and Metcalf 1999; Simms 2008; Spangler 2002; Stiger and Larson 1992; Wilde and Newman 1989; Yentsch et al. 2009
Late Prehistoric – Protohistoric and Historic Ute (ca. 800 to 175 B.P.)	
Generalized Lifeways	Highly mobile hunting and gathering populations living in rock shelters, wickiups, and other types of brush structures; evidence of local manufacture of distinct brown ware ceramics; introduction and dispersal of Euro-American material culture and a shift to equestrian-based subsistence strategies (late stages). Late Prehistoric or Protohistoric-era peoples in the Eastern Great Basin and western half of the Northern Colorado Plateau (present-day northeastern Utah) were the Utes and possible remnant Fremont populations. The region was inhabited by Ute and Western Shoshone groups and occasionally visited by Arapaho, Sioux, Cheyenne, Comanche, and Navajo, among others. Late Prehistoric or Protohistoric adaptations farther east (present-day northwestern Colorado) have been divided into two phases: Canalla Phase (pre-contact phase with evidence of low quantities of European trade goods) and Antero Phase (post-contact phase characterized by continuous exposure to Euro-American culture and change from a pedestrian to an equestrian hunting and gathering way of life). Ute subsistence patterns were more like those of Archaic groups. The Ute were able to focus on a narrower range of plant and animal foods, as well as more highly ranked animal resources. Euro-American goods (e.g., glass beads, metal cone tinklers, cartridges, tin cans, and bits) are evident in the Ute cultural assemblage and were obtained in trade.
Diagnostic Artifacts	Small triangular projectile points (e.g., Desert Side-notched and Cottonwood Triangular projectile points), Shoshone knives, basketry, juniper bark or reed mats, buffalo robes, and utilitarian brown ware ceramics.
Local Manifestations	Artifact and ceramic scatters, campsites, burials, rock shelters, and ephemeral brush shelters; Euro-American goods (e.g., metal items, glass beads, glass containers); rock art panels depicting horse motif, abstract figures, and inscriptions; trails, stone circles, and scarred trees are characteristic of this period, primarily in northwestern Colorado.
Notes	Archaeological data currently provide limited support for Shoshone occupation of the northwestern Colorado region.
References	Creasman and Scott 1987; Jennings 1978; Kelly and Fowler 1986; Reed 1994; Reed and Metcalf 1999; Spangler 2001, 2002; Yentsch et al. 2006

NOTES:
[1]Despite marked differences between Paleoindian and early Archaic adaptations, the transition between these two lifeways is poorly defined in some areas
B.P. = Before present day

3.2.20.3.2 History

General Historical Overview

As evidenced by the diversity of cultural resources, the Project lies in an area of extensive historic use and complex economic and socio-cultural interactions. The proposed Project corridor crosses parts of south-central Wyoming, northwestern Colorado, and northeastern Utah. From northeast to west-southwest, the Project corridor passes through portions of Carbon and Sweetwater counties in Wyoming; Routt, Moffat, Rio Blanco, Garfield, and Mesa counties in Colorado; and Uintah, Grand, Duchesne, Carbon, Emery, Wasatch, Utah, Juab, and Sanpete counties in Utah. The following outlines are intended to provide a historical framework in consideration of the significance of cultural resources located in the proposed Project area. The regional chronology and cultural events presented herein reflect the synthesis of a large body of archaeological and historical investigations in the Project area.

Wyoming History Outline

The history of the State of Wyoming in general, and south-central Wyoming in particular, has been divided into six major developmental periods associated with significant events:

- **Early Historic (1801 to 1842).** Characterized by the earliest exploration of south-central Wyoming by Spaniards, Euro-American fur trappers, traders, and explorers.
- **Pre-Territorial (1843 to 1867).** Characterized by the arrival and settlement of pioneers.
- **Territorial (1868 to 1890).** Characterized by the creation of the Wyoming Territory and the subsequent organization of the territorial government, development of the cattle and sheep industries, and recognition of the mineral wealth of Wyoming.
- **Expansion (1891 to 1928).** Characterized by the development of transportation networks, and further development of the cattle and sheep industries and the mining/industrial boom associated with World War I.
- **Depression (1929 to 1939).** Characterized by the rapid decline of the local mining and agricultural industries as a result of the stock market crash.
- **World War II and Post-War Era (1940 to Present).** Characterized by the development of a vast railroad network and the mining/industrial boom associated with World War II.

For further investigation of the history of the state or the Project area, consult Backer et al (2001), Hoefer et al. (2005), Roberts (2008), and Wolf (2007).

Early Historic (1801 to 1842)

- **1806.** After leaving the Lewis and Clark Expedition in 1806, John Colter was the first to explore parts of the Yellowstone and Wind River Region in 1808 (Wolf 2007).
- **1811.** The Astorians, a group of Euro-American trappers sponsored by John J. Astor, explored portions of Wyoming and crossed the Tetons in 1811. Astorian Robert Stuart was the first explorer to discover the South Pass route over the Rocky Mountains, which later became the most significant point along the Oregon Trail.
- **1825.** Jedediah Strong Smith led expeditions through southwestern Wyoming and rediscovered South Pass (Eddins n.d.).
- **1825 to 1869.** The Overland Historic Trail, also known as the Overland Stage Line, is established as one of the major routes in the American West. While portions of the route had been used by trappers/traders since the 1820s, the route was most heavily used between 1862 and 1869 as an

alternative route to the Oregon, California, and Mormon trails through central Wyoming. The Ashley Expedition followed portions of the route in 1825 when they traveled as far west as the North Platte River and Bridger Pass before turning northwest to the Green River. The value of this trail, as an emigrant route, was recognized in 1850 by Captain Howard Stansbury of the Corps of Topographic Engineers (Stansbury 1853). The completion of the first transcontinental railroad eliminated the need for the stage line; however, portions of the trail are still in use for local access to the railroad.

- **1832.** Captain Benjamin Bonneville, funded by John Jacob Astor, led an expedition to the Oregon Country. Astor, a competitor of the Hudson Bay Company, funded Bonneville with the hope of furthering his business in the fur trade. The expedition crossed Wyoming in the fall of 1832 (Irving 1837).
- **1833 to 1835.** Bonneville explored the Snake River region and the Wind River Range in present day western Wyoming, establishing a winter camp at Portneuf (Irving 1837). Bonneville established trade networks with the Shoshone and Bannock (Irving 1837).
- **1830s to 1841.** Trappers, including Jim Bridger, William Sublette, and Thomas Fitzpatrick, pioneered the way for the settlement of the west. Trappers became familiar with the trails and passes, and many trappers later became emigrant guides during the westward migrations. The last Rendezvous in Wyoming took place in 1840, signaling the end of the fur trade era (Wolf 2007).
- **1842 to 1843.** John C. Fremont, a captain in the Army Corps of Topographical Engineers, journeyed into southern Wyoming and mapped the Oregon Trail route (Peterson 1994a). Fremont's work resulted in the first government published maps of the Oregon Trail.

Pre-Territorial (1843 to 1869)

- **1843 to 1869.** The Oregon Trail extends 1,932 miles from Courthouse Square in Independence, Missouri, to Oregon City on the Willamette River in Oregon. The Trail entered Oregon Territory when it crossed South Pass in what is now western Wyoming. The trail was used by fur trappers, traders, and missionaries during the 1820s and 1830s. It was not until 1841 that the first wagon train (the Bartleson-Bidwell party) moved westward over the trail (Lissandrello 1976). With the completion of the Union Pacific Railroad in 1869, the use of the trail as an overland route to the Pacific rapidly declined, although sections of it continued to be used locally (Lissandrello 1976). In Wyoming, the trail crosses from east to west parts of Goshen, Platte, Albany, Converse, Natrona, Fremont, Sweetwater, Lincoln, and Uinta counties.
- **1843.** Jim Bridger and Louis Vasquez established Fort Bridger as an Oregon Trail trading post at Blacks Fork of the Green River (Hilton and Hilton 1994). The fort was burned in 1857 (Hilton and Hilton 1994).
- **1846 to 1847.** The Mormon migration, led by Brigham Young, began in 1846 at Nauvoo, Illinois. The long westward migration went from Illinois to Nebraska (Winter Quarters near Omaha), generally following the Oregon Trail to Fort Bridger near the Green River in southwestern Wyoming. Mormon pioneers then used the Hastings Cutoff to reach the Salt Lake Valley in Utah in 1847 (Beecher 1994). This trail became known as the Mormon Trail.
- **1849.** The Cherokee Historic Trail was established after the 1849 California Gold Rush (Gardner 2002). Three primary Cherokee Historic Trail routes were established between 1849 and 1850 by travelers generally using westbound trails already well known by fur trappers and Native Americans (Gardner 2002). The trail also served as a transportation route for freight, cattle, and passengers between Utah and Colorado to the Union Pacific Railroad in Wyoming. The trail originated in Tahlequah, Oklahoma, and proceeded north-northwest through Kansas, Colorado, and then west across southern Wyoming where it connected with other westward trails at Fort

Bridger, Wyoming (Fletcher and Flecter 2012; Leicht 1984; NPS 2012). The northern route later became the Overland Historic Trail and roughly paralleled and occasionally overlapped the Transcontinental Railroad, the Lincoln Highway, and I-80. The use of the Cherokee Historic Trail for westbound emigrants diminished after 1869, and the Union Pacific Transcontinental Railway became the primary means for westward travel. By the turn of the century, the trail was mainly used for east-west traffic for local commerce and rural access. The Cherokee Historic Trail crosses both Carbon and Sweetwater counties in the Project area.

- **1850s.** During the 1850s through the 1860s, transportation of freight, passengers, and mail was initiated along the Overland Historic Trail; by 1861 the Overland Stage Line Company had established various stage stations across southern Wyoming (McLynn 2002).
- **1851.** Northeastern Wyoming was identified as Sioux Territory in the Fort Laramie Treaty of 1851. Other regions were occupied by the Crow, Cheyenne, and Arapaho tribes (Wolf 2007).
- **1863 to 1868.** Exploration and subsequent settlement of the western U.S. resulted in continuous conflicts between the new comers and native populations. The Fort Bridger and Box Elder Treaties of 1863 and the Fort Bridger Treaty of 1868 set the boundaries for the Wind River and Fort Hall Indian Reservations (Stamm 2005; Trenholm and Carley 1964).
- **1867.** The Union Pacific Railroad entered present-day southern Wyoming, and several coal mines and small settlements were established along its corridor (Griswold 1962). Cheyenne was established in the fall of 1867 and became a major hub for railroad maintenance and transportation (Wishart 2004). After the coming of the railroad, many towns sprang up along the rails, the most significant were Laramie, Rawlins, Rock Springs, Medicine Bow, Carbon, Hanna, and Evanston. Some of these western railroad towns became freight terminals for transport of agricultural goods.

Territorial (1868 to 1890)

- **1868**. The territory of Wyoming was created on July 25, 1868, by the U.S. Congress (Wolf 2007). After the arrival of the railroad in 1867, the population began to increase steadily.
- **1869 to 1884.** The discovery of bentonite, oil, coal, and iron led to a mass migration of settlers from other regions into the area and an unprecedented economic growth (Black Hills Bentonite 2009). By the late 1860s, coal was a major economic resource in the Wyoming Territory, providing fuel for the railroad and a valuable source of heat for settlers across the west (Wolf 2007). The first oil well in Wyoming was drilled in 1884 southeast of Lander (Petroleum Association of Wyoming 2013).
- **1872.** Yellowstone National Park was established by the U.S. Congress and signed into law by President Ulysses S. Grant on March 1, 1872 (Act of March 1, 1872, Chapter 24, §1, 17 Statute at Large 32). It contains numerous prehistoric and historic sites, ethnographic resources, historic structures and districts listed on the NRHP, and an NHT.
- **1881.** The historic Rawlins to Baggs Stage Road, established in 1881, was a route used to freight goods, mail, and passengers from Rawlins to Baggs, Wyoming, and farther into Colorado. Several stage stations of the Union Pacific Railroad were established along the route to serve ranching communities in the Little Snake River Valley. The historic road also is associated with the history of the White River Indian Agency and the Meeker Massacre (Rosenberg 2006). The road extends north of Baggs generally along the same route as Wyoming Highway 789. It continues north and east toward Rawlins, Wyoming.
- **Late 1880s.** The cattle and sheep industry also became a major part of the economy of southern Wyoming. Thousands of longhorn cattle were driven north from Texas into Wyoming where the industry flourished. Ranching was a mainstay of the new territory's economy until 1887, when

thousands of cattle perished in bitter winter conditions (Wolf 2007). As a result, many affluent ranchers went bankrupt or turned to sheep after losing their cattle. European-American settlement in southern Wyoming was focused along the railroad corridor. The northern part of the territory was still under the control of American Indian tribes.

Expansion (1891 to 1928)

- **1891**. By the early 1890s, most American Indian tribes had been moved to reservation lands providing opportunity for white settlements to expand into areas formerly considered off limits (Wolf 2007).
- **1890s to 1900s**. The cattle and sheep industries continued to sustain the economy of Wyoming despite conflict between the two industries over grazing rights and public lands. Conflict between the Wyoming Stock Growers and Homesteaders culminated in the 1892 Johnson County War (Dobson 2011). Coal mines of the Union Pacific Railroad continued to thrive and the oil industry grew rapidly, providing significant economic development.
- **1909 to 1928**. With the extension of the Homestead Act in 1909, many dryland farmers were encouraged to settle in Wyoming. However, dry conditions and economic downturns in the late 1920s caused many to abandon their farms.
- **1913**. The Lincoln Highway Association was formed in 1913 for the purpose of establishing "… a continuous improved highway from the Atlantic to the Pacific, open to lawful traffic of all description without toll charges," (Butko 2002). During the early 1900s, the main route connected the communities of Cheyenne, Laramie, Rawlins, Green River, Granger, Medicine Bow, Hanna, and Evanston.

Depression (1929 to 1939)

- **1929 to 1930s**. At the onset of the Great Depression agriculture was the state's leading industry, employing one-third of the work force (Larson 1969). Agricultural interests failed due to falling crop prices and many mines were severely reduced in capacity or shut down. The state's economy was sustained by the growth of the oil industry and by several government hydroelectric and irrigation construction projects. However, even the oil industry, previously thought to be invulnerable, was affected by the stock market crash in the fall of 1929 (Roberts 2008).
- **1934 to 1939.** The federal government enacted legislation in an effort to provide relief to the Farming and Ranching industry in the form of the Taylor Grazing Act of 1934 (Larson 1969). Under the New Deal, programs such as the Works Progress Administration (WPA) and the Public Works Administration provided employment opportunities for the unemployed masses. With these new programs in place and new legislation regarding Wyoming sales tax, the state slowly began to recover from the grip of the Great Depression (Roberts 2008).

World War II and Post-War Era (1940 to Present)

- **1940 to 1946.** Wartime demand for oil, coal, lumber, and beef boosted the struggling economy and spurred additional mineral exploration and development. Rich trona deposits were discovered in the Green River Basin (Wyoming Mining Association n.d.). Tourist-based industries flourished. World War II proved to be a period of economic recovery and significant growth for the state of Wyoming.
- **1947 to 1950s.** The trona industry, coal mining, and oil and gas production increased considerably during the Post-war period (Wolf 2007). Uranium deposits were discovered in 1950 and were largely exploited in many areas in Wyoming's major basins. Wyoming tourism

continued to flourish after the war. Increased accessibility via improved transportation networks made Wyoming a prime recreational destination.

- **1960s to Present.** The trona industry has continued to develop and expand. Wyoming contains the largest deposit of trona and is the source of approximately 90 percent of all soda ash produced in the U.S. (Wyoming Mining Association n.d.). Coal-generated electric power plants had been developed, increasing the local market for coal production. Present day oil and gas development in Wyoming, coupled with exploration in the field of wind energy, have once again cycled Wyoming into what is predicted to be a period of long-term economic gain for the nation's least-populated state. With recognition of the vast array of recreational opportunities available, tourism continues to play a significant role in Wyoming's economy (Wolf 2007).

Colorado History Outline

The following historical overview is based on the work of Athearn (1982), Husband (1984), and Mehls (1982) on the history and development of northwestern and north-central Colorado as well as the historical archaeology context for Colorado (Church et al. 2007). Some of the most recent, comprehensive treatments available for northwestern or north-central Colorado include the 2002 Class I Cultural Resource Overview of the Roan Plateau Management Area in Garfield County (Hoefer 2002) and the Class I Cultural Resource Overview of the BLM's Kremmling Field Office, North-Central Colorado (Reed et al. 2008). The history of northwestern Colorado is typically divided into five major time periods or eras associated with significant events and activities:

- **Exploration Period (1765 to 1850s).** Characterized by the earliest exploration of northwestern Colorado by Spaniards, Euro-American fur trappers, traders, and explorers.
- **Settlement Period (1850s to 1860s).** Characterized by the arrival and settlement of pioneers.
- **Industry and Community Development Period (1860s to 1929).** Characterized by the development of a vast railroad network and the mining/industrial boom associated with World War I.
- **Depression Era. (1929 to 1940).** Characterized by the rapid decline of the local mining and agricultural industries as a result of the stock market crash.
- **World War II and the Post-War Era (1941 to the present).** Characterized by the economic recovery resulting from the war overseas, the rise of defense-related industries in Colorado, and the increase in urbanization.

Exploration Period (1765 to 1850s)

- **1765**. Don Juan Marian Antonio Rivera led an expedition that reached the confluence of the Gunnison and Uncompahgre rivers in 1765 (Mehls 1982). In the years following Rivera's expedition, some of his men established short-term trade relations with Indian groups along the Gunnison River (Mehls 1982). That same year, three Gunnison River traders named Pedro Mora, Gregorio Sandoval, and Andres Muniz followed the river north and reached the junction of the Gunnison and Colorado (Grand) rivers (Mehls 1982).
- **1776**. The Dominguez-Escalante Expedition is the earliest known exploration into the northeastern Colorado Plateau by non-indigenous peoples. The expedition passed through western Colorado while searching for a route from Santa Fe, New Mexico, to the California coast (Warner 1976). Between August 6 and September 12, 1776, the route taken by the Spanish friars entered into present day Colorado near Carracas and then followed the San Juan River. They passed through the San Juan Mountains to the junction of the Uncompahgre and Dolores rivers and then to Gunnison and north to the White River (Warner 1976).

- **1800s**. Several fur trappers entered present-day Colorado and established a permanent settlement in northwestern Colorado at Brown's Hole (Brown's Park), a valley drained by the Green River and bound on the south by the Diamond Mountain of the Uinta Range and on the north by Cold Spring Mountain (Husband 1984). The valley begins in eastern Utah, near the Utah/Colorado state line, approximately 25 miles from Flaming Gorge Dam, and follows the Green River downstream into Colorado. It was named after Jean-Baptiste Chalifoux (also known as Baptiste Brown), a French Canadian trapper who entered the valley in 1820. Brown's Hole became important as western Colorado's most active fur trapping rendezvous from 1825 to 1840. By the late 1840s and 1850s, people came into the Brown's Park area (Moffat County, Colorado and Daggett County, Utah) looking for transportation routes across the southern Rocky Mountains (Gardner 2002).
- **1822 to 1825**. General William H. Ashley led several fur trapping expeditions into the Rocky Mountains and opened the area along the Green River for trade (Athearn 1982). The Ashley party found its way across present-day southwestern Wyoming down into the Yampa Valley and then into the Brown's Hole area. Ashley was responsible for opening the area to large-scale fur trade.
- **1828 to 1840s**. Fur trading posts were established near present-day Delta (Fort Uncompahgre or Fort Roubideau) and in Brown's Hole (Fort Davy Crockett); these forts were abandoned several years later due to the decline of fur trapping (Husband 1984; Mehls 1982). Trappers operated on the White and Yampa rivers, in Middle Park along the Colorado River, and east of the Continental Divide in North Park in the vicinity of the Medicine Bow Mountains.
- **1829 to 1848**. The Old Spanish NHT was used during this time primarily as a commercial trade route between Mexican territories and California (Crampton 1979). The trail followed Indian trails and portions of the Dominguez-Escalante Expedition route. It traverses southwestern Colorado with various cut-offs, alternate routes, and connecting trails passing through what are now Archuleta, La Plata, Montezuma, and Dolores counties, and extends northwestward into Utah (Northern Route). A variant of the Northern Route known as the Northern Branch travels north-northwest across Costilla, Alamosa, Saguache, Gunnison, Delta, and Mesa counties and out of Colorado (west of Grand Junction). The Armijo route traversed the southwestern corner of present-day Colorado, passing through portions of southern La Plata and Montezuma counties. Segments of the Northern Branch have been identified along the northern margins of the Colorado River between the Colorado/Utah state line and Grand Junction in Mesa County.
- **1830s to 1869**. The Oregon Trail is a 1,932-mile overland migration route that spanned from the Missouri River to valleys in present-day Oregon. It was used mostly between 1841 and 1869; use diminished greatly upon completion of the first transcontinental railroad in 1869. While the Oregon Trail was being established across southern Wyoming, others were attempting to establish wagon routes from the south to connect to the Oregon Trail from the Santa Fe Trail in the Bent's Fort area in Colorado. That same year, an emigrant party from Peoria, Illinois, was the first known wagon caravan to depart via the Santa Fe Trail and travel northward to Oregon (Gardner 2002). The party traveled across the Continental Divide to the Yampa River and then northwest across the Little Snake River and Vermillion Creek to Fort Davy Crockett (Gardner 2002).
- **1844 to 1845**. John C. Fremont was charged with exploring, mapping, and describing the interior west. He journeyed into present-day Colorado, first in 1844 and again in 1845. In 1844, Fremont led a party from Fort St. Vrain in eastern Colorado to the Laramie Mountains alongside the Cache la Poudre River, then from North Park into the Yampa Valley. The 1845 expedition was entirely for military purposes. The party followed the Arkansas River to Tennessee Pass and crossed into the Colorado River Valley. The party then proceeded north and reached the White River, at which point they traveled west down the White River until they joined the Green River and then continued west across Utah and Nevada into California (Athearn 1982).

- **1849**. The Cherokee Historic Trail was established after the 1849 California Gold Rush (Gardner 2002). Multiple parties of Cherokee Indians passed along varying paths of the Cherokee Historic Trail from 1849 through the 1850s (Gardner 2002). A main variant of the trail joined the Little Snake River at the mouth of Cherokee Creek, traveling into what became known as Cherokee Basin from this point. The trail heads westward along the crest of Cherokee Ridge to Powder Rim on the north side of Powder Wash (Gardner 2002). Cherokee groups met and traded with the Shoshone on Little Snake River (Gardner 2002). The use of the trail was not limited to Cherokee Indians but also was used by Euro-American travelers.
- **1853**. John W. Gunnison was commissioned by the U.S. Government to find a feasible and cost-effective railroad route across the mountains of western Colorado. Gunnison's path followed the general route of the Old Spanish Trail.

Settlement Period (1850s to 1860s)

- **1859 to 1873**. The discovery of gold on Cherry Creek, present-day Denver, precipitated a major but relatively short rush to Colorado (Athearn 1982). Numerous prospectors, miners, and entrepreneurs rushed into the area. The encroachment on Indian lands intensified the conflict between immigrants and the native Ute peoples and would eventually lead to conflicts. A mining district was organized in Hahn's Peak in 1863 (Routt County). The area was rediscovered during the 1870s. (Athearn 1982).
- **1868**. The Hunt Treaty of 1868 was signed between various Ute Indian tribes and the U.S. Government (Athearn 1982). This treaty established a single Ute reservation that lay mostly west of the Continental Divide (west of Pagosa Springs and south of the present-day Moffat County line) and opened up lands in the mountains and northern portion of the Western Slope region for white settlements. The 1868 treaty included Middle Park in the reservation lands but excluded North Park. Confusion over where the reservation boundaries were resulted in heated conflicts.
- **1869**. After the Civil War, the federal government sent more troops from the U.S. Army and USGS personnel into the western territories to map and catalog the land (Gardner 2002). John Wesley Powell led an expedition down the Colorado and Green River directly through Brown's Hole, but Powell reported the area was of little value to the U.S. government. Also during this year, the Union Pacific Railroad was completed (southern Wyoming). With completion of the railroad, the Cherokee Historic Trail basically ceased to be an emigrant road and trail portions transformed into regional connectors (Gardner 2002).

Industry and Community Development (1860s to 1929)

- **Late 1860s**. The arrival of the railroad made the transportation of goods, including cattle and sheep, much easier and boosted the economy of northwestern and north-central Colorado. By 1871 the cattle industry was established in Brown's Park and along the Little Snake, Green, Yampa, and White river valleys (Athearn 1982). The cattle industry of northwestern Colorado remained the region's largest industry until the 1920s, when other industries such as sheep, coal, and oil expanded.
- **Early 1870s**. A permanent agricultural frontier was introduced to northwestern Colorado and numerous homesteads were established along the Yampa River (Husband 1984).
- **1870s to 1890s**. Ore deposits (coal, copper, and gold) were identified or reconsidered for prospecting in various areas of northern and northwestern Colorado, including the Blue Mountain, Little Snake River and Fortification Creek, Hahn's Peak, Middle Park, and Independence Mountain in North Park (Athearn 1982). Gold also was discovered on the San Juan

Mountains. In the late 1870s, gilsonite was identified on extreme western Colorado and in eastern Utah.

- **1871 to 1874**. The USGS Hayden Expeditions explored the upper Colorado River and Grand Valley. The expeditions provided information pertaining to local geology and topography, flora, fauna, and mineral deposits. The maps and natural history information provided by the expedition served as valuable resources for prospective settlers (Athearn 1982).
- **1873 to 1879**. The Brunot Treaty of 1873 ceded to thousands of miners and settlers the San Juan mining areas for mineral exploration. Ute agencies were established at White River (Northern Ute) and Los Pinos (Southern Ute) (Athearn 1982). Hostilities resulted from continuous intrusion on the Ute Indian Reservation by settlers and failure of the government to keep promises. When Nathan Meeker took over as agent at the White River Agency in 1878, the Ute's distrust was compounded by his lack of understanding of the Ute culture. The conflict culminated in the Meeker Massacre (1879).
- **1881**. By the end of 1881, the Ute were removed from western Colorado to reservations in northeastern Utah, and the territory was opened for homesteading (Athearn 1982). Gold and carnotite deposits were discovered. The D&RGW Railway was a historic narrow gauge line incorporated in July 1881 in Utah with the purpose of providing the D&RG Railway in Colorado access to markets in Utah (Carr and Edwards 1989; Taniguchi 1994). By 1883 through acquisitions of smaller railroads and construction of new lines, the company had united its existing line in Grand Junction, Colorado, with its line in the neighboring state of Utah.
- **1882 to 1884**. The cities of Grand Junction (Mesa County) in 1881, Parachute and Rifle in 1882 (Garfield County), Glenwood Springs in 1883 (Garfield County), and Steamboat (Routt County) in 1884 (Mehls 1982) were established during this time period. Irrigation efforts started in the Grand Junction area in 1882, and the idea of irrigated agricultural lands spread to the upper Grand Valley around Rifle and Parachute (Mehls 1982). A narrow gauge line of the D&RG Railway was completed from Gunnison to Grand Junction.
- **1889 to 1890s**. The D&RG Railway reached Rifle in 1889 and Parachute in 1890. During this period, the sheep and cattle industries were the main economic pursuits in northwestern Colorado. The settlements of Craig, Maybell, and Hayden became important livestock centers (Athearn 1982). Large cattle and sheep ranches also were established throughout the region, and conflict was imminent between cattle and sheep ranchers, as well as smaller cattle outfits and large companies. Adding to the tension was the federal withdrawal of lands in 1891 for forest reserves (Athearn 1982; Mehls 1982). Numerous cattlemen's associations were formed in response to the forest withdrawals. Other developments include the proliferation of transportation routes to serve the various communities that grew in the region, including mining areas along the mountain ranges and agricultural (hay) areas in the valleys. In the spring of 1890, the Parachute Mining District was formed in northwestern Colorado (Grand Valley District) to encourage development of oil shale (Colorado School of Mines 1918). The reserve was expanded in the 1920s. The White River Forest in the Meeker area was established.
- **1893**. The Silver Panic of 1893 caused a crash in the mining industry and economic problems rippled into the cattle industry and silver mining efforts.
- **1903**. The Moffat Road railroad stimulated development of western Colorado and resulted in the establishment and growth of numerous towns/supply centers along its route (Athearn 1982). The line also was known as the Denver, Northwestern and Pacific Railroad, later the Denver and Salt Lake, and finally incorporated into the D&RGW Railway. When the line came into Middle Park, and later into Steamboat and Craig, transportation became cheap and largely available for economic purposes. Cattle and sheep, as well as hay, wheat, and other crops, were directly shipped to Denver (Athearn 1982).

- **1904**. The Uintah Railway was incorporated in 1904. The line was built over the Book Cliffs from a large mining operation (gilsonite ore) at Dragon in the Bonanza area (Utah) to Mack, Colorado, where it connected with the Rio Grande Western Railway main line (Burton 1996; Notarianni 1994a). Along the right-of-way, several settlements sprang up, including Urado, East Vac, Columbine, Carbonera, Clarkton, and Mack. The line also was the first rail transportation from north to south in western Colorado.
- **1906**. The USGS identified major seams of coal in the areas of Oak Creek, Trout Creek, Twenty-Mile Park, Wolf Creek, Sage Creek, Dry Creek, the Williams Fork area, Wollihan, Pilot Knob, and on the Flat Top Mountains. Also in 1906, a toll road company was incorporated at Dragon in the Bonanza area (Utah) to build roads to Vernal, Utah, and Rangely, Colorado, to provide stage service.
- **1911**. The Laramie, Hahn's Peak, and Pacific Railroad was built from Laramie, Wyoming, to Walden, Colorado, to serve the mining industry. The line operated under several different names between 1901 and 1951 prior to absorption by the Union Pacific Railroad. The line has been known as the Laramie and Routt County Railway (1909); the Colorado, Wyoming, and Eastern Railroad (1914); and the Northern Colorado and Eastern Railroad (1924).
- **1913**. The Denver and Salt Lake Railroad reached Craig, the county seat of Moffat County, opening the area to further settlement (Davis 1942). Increased demand for agricultural goods during World War I further fueled the expansion of Moffat County. After 1924, a drop in annual rainfall, as well as a drop in crop prices, resulted in already marginal agricultural yields in productivity (Davis 1942). The result was a slow but steady decline in the number of farms operating in the county.
- **1915**. The vanadium phase of carnotite mining begins (Husband 1984).
- **1918-1919**. In the Rocky Mountain region, more than 100 companies were organized to develop and sell oil shale stock and most of the companies filed claims in Garfield County (Gulliford 1983). Agricultural and coal production increased sharply to aid war needs.
- **1920s**. U.S. Highway 40 was built over Berthoud Pass in 1923, and the highway through Byers Canyon was completed in 1927. Increased demand for precious metals stimulated the mining industry (Husband 1984).
- **1921 to 1923**. The General Assembly creates the State Highway Department and Colorado starts building roads on main traveled routes. In addition, the Moffat Tunnel Improvement District is created and construction of the 6.2-mile-long Moffat Tunnel began in 1923 (Athearn 1982).

Depression Era (1929 to 1940)

- **1930s**. During the Depression of the 1930s, the federal government established the Civilian Conservation Corps (CCC) as a relief measure. This provided work for unemployed individuals and enabled necessary improvement projects to be completed on state, federal, and municipal lands. Several CCC camps were established in the area, mostly associated with the NPS or the USFS.

World War II and the Post-War Era (1941 to Present)

- **1941 to 1946.** During World War II, the agriculture industry had its greatest production in the history of the state and continued to be the state's dominant industry. Mining on a commercial scale largely declined during World War II when a federal ban on nonessential mining was put into effect to focus extractive industries on production of the raw materials needed for the war effort. Immediately after the war in 1946, the U.S. Bureau of Mines began the Anvils Point oil

shale demonstration project near Rifle, Colorado. Later, the peak of U.S. oil production was reached in 1970. The Oil Shale Corporation (TOSCO), Union Oil Company, and Exxon developed the area (Gulliford 1989).

- **1950s to 1960s.** Numerous water control works were constructed in response to increased population growth and agricultural demands, and tourism industry blossomed. Multiple segments of the Colorado portion of I-70 opened to traffic during the 1960s and the first half of the 1970s (Colorado Department of Transportation 2009). Construction of I-70 began in 1958. Browns Park NWR was established in 1963 by Public Land Order.
- **1980s.** Coal mining production on the western slopes hit an all-time high, and the area became more dependent on energy resources. In 1982 the state economic structure was greatly and negatively affected when Exxon closed its oil shale development projects in Rio Blanco, Mesa, and Garfield counties (Hoefer 2002).
- **Late 1980s to 1990s.** During this time, there was a major growth of technological industries and further development of tourist-related recreation ranging from basic campgrounds to hotel complexes and ski areas.

Utah History Outline

Utah state and county histories, including railroad, mining, and transportation, have been documented thoroughly in several reports. Some of the most comprehensive treatments available for this region are the 2000 report for the Adesta Communication Fiber Optic Cable Project (Fergusson and Helton 2000), the Williams Pipeline Project (Baxter et al. 2001), and the Class I Overview of Cultural Resources in the Uinta Basin and Tavaputs Plateau (Spangler 2002). Because the Project overlaps many of the same regions, portions of the chronology have been adapted from these reports. For further investigation of the history of the state or the Project area, consult Antrei and Roberts (1999), Barton (1998), Bennett (1999), Burton (1996), Eldredge and Gowans (1994), Embry (1996), Firmage (1996), Geary (1996), Holzapfel (1999), Johnson et al. (1998), Newell and Talbot (1998); Poll et al. (1978), Watt (1997), and Wilson (1999), among others.

The history of northeastern Utah can be divided into five major time periods or eras associated with significant events and activities:

- **Exploration (1765 to 1847).** Characterized by the earliest exploration of northeastern Utah by Spaniards, Euro-American fur trappers, traders, and explorers.
- **Settlement (1847 to 1905).** Characterized by the arrival and settlement of pioneers.
- **Industry and Community Development (1869 to 1929).** Characterized by the development of a vast railroad network and the mining/industrial boom associated with World War I.
- **Depression Era (1929 to 1940).** Characterized by the rapid decline of local mining and agricultural industries as a result of the stock market crash.
- **World War II and Post-War Era (1941 to the present).** Characterized by the economic recovery resulting from the war overseas, the rise of defense-related industries in Utah, and the increase in urbanization.

Exploration Period (1765 to 1847)

- **1765.** Don Juan Maria Antonio Rivera led two trading and prospecting expeditions that originated in Santa Fe and moved northwestward through southwestern Colorado to the Colorado River near a Tabeguache Ute camp in Spanish Valley (southwest of present Moab), Utah (Firmage 1996; Geary 1996).

- **1776**. The Dominguez-Escalante Expedition is the earliest known exploration into the Great Basin and northern Colorado Plateau by non-indigenous peoples. They were in search of a route from Santa Fe, New Mexico, to the California coast (Black and Metcalf 1986; Warner 1976). Evidence of this expedition is the Dominguez-Escalante Trail, which extends approximately 2,000 miles along the route of the Dominguez-Escalante Expedition. In Utah, the trail traverses parts of Utah, Wasatch, Beaver, Iron, Kane, Washington, Duchesne, Uintah, Juab, and Millard counties.
- **1824 to 1830**. Jedediah Strong Smith led expeditions through northeastern Utah, including west Juab, Utah, Duchesne, Daggett, Uintah, and Emery counties, in search of good fur-trapping territory (Morgan 1953). These early explorations opened up a large portion of the region to later settlers by delineating trails from the Salt Lake Valley to California.
- **1825**. General William H. Ashley, along with business partner Andrew Henry, led several fur trapping expeditions east of the Wasatch Range in an attempt to make their business survive. Ashley led an expedition by boat down the Green River into the Uinta Basin to explore the area for beaver, then across the upper portion of the Strawberry Valley to the Weber River (Eldredge and Gowans 1994; Johnson et al. 1998). Ashley was responsible for the first American fur-trading rendezvous held just north of the present Utah-Wyoming border on Henry's Fork of the Green River (Burton 1996; Eldredge and Gowans 1994; Johnson et al. 1998).
- **1829 to 1848**. The Old Spanish NHT, used primarily between 1829 and 1848, was among the most significant transportation routes in the West spanning 1,200 miles between Santa Fe and Los Angeles, and crossing six states (Crampton 1979). The trail followed Indian trails (which likely started as game trails) with local tribes serving as guides. Highly valued commercial goods such as raw wool and woven textiles were transported from the New Mexico province to California where they were exchanged for horses and mules, which were equally valued in the deserts of the American Southwest (Bradley 1999a, b). An existing market for Paiute Indian slaves, supplied by neighboring Ute Indians as well as the Spaniards and then later Mexican traders, expanded as commerce increased along the Old Spanish Trail. Paiute slaves were sold at markets in both California and New Mexico (Seegmiller 1998). In Utah, the trail crosses through Grand, Emery, Kane, Piute, San Juan, Sevier, Iron, and Washington counties.

Settlement Period (1847 to 1905)

- **1847**. The first Euro-American settlement occurred in and around the Salt Lake Valley. The main group of Mormon pioneers (members of the Church of Jesus Christ of Latter-day Saints) arrived in the Salt Lake Valley in July 1847. Shortly thereafter, their religious leader, Brigham Young, sent a number of families to explore and settle outlying portions of the territory. Between November and December of 1847, Parley P. Pratt and these families were instructed to explore the valleys south of the Wasatch Front for settlement (Wilson 1999).
- **1848**. The U.S. gained control of much of the West in 1848 as a result of the Treaty of Guadalupe Hidalgo, which ended the Mexican War. Mexico technically controlled the territory, but ceded most of its claims to land north of the present border, including all of Utah. This development spurred both government and Mormon exploration of the interior West (Wilson 1999).
- **1849 to 1860.** Numerous pioneer families were sent to newly identified settlement sites in Utah, Juab, and Sanpete valleys (Antrei and Roberts 1999; Holzapfel 1999; Wilson 1999). Some of the permanent settlements established include Provo (1850), Payson (1850), and Santaquin (1851) in Utah County; Nephi (1851) and Mona (1852) in Juab County; and Manti (1849), Fountain Green (1850), Mount Pleasant (1852), and Fairview (1859) in Sanpete County (Van Cott 1990).

- **1853 to 1854**. Tension between Mormon colonists and the Ute Indian Tribe led to the Walker War (1853 to 1854), which is believed to mark the "beginning of Ute subsistence displacement and the 'open-hand, mailed fist' Indian Policy of Brigham Young—feeding when possible, fighting when necessary" (Lewis 1994). The Log, Little Stone, and Big forts were built in Manti during this period (Antrei and Roberts 1999).
- **1854**. Mormon pioneers first attempted to colonize the Tavaputs Plateau area in Grand Valley (southeastern Utah) in the fall of 1854 when the Elk Mountain Mission was established near Moab. The Elk Mountain Mission failed, and later the legendary Hole-in-the-Rock Mission to the valleys of the San Juan River followed it. Further government-sponsored expeditions entered the area during the next two decades, but not until the 1870s did potential settlers of the Moab and La Sal mountain area start prospecting, cattle ranching, and homesteading (Firmage 1996).
- **1857 to 1858.** The population of central Utah increased dramatically during the Utah War. As a result of this conflict between Mormon settlers and the U.S. Government, Brigham Young ordered 30,000 residents from northern Utah to move south to seek refuge from General Johnston's Army in what was interpreted as religious persecution (Hull and Avery 1980). Many of these settlers took up permanent residence, and during the 10 years after the Utah War, more than a hundred new communities were founded in the Utah territory.
- **1861 to 1864.** In 1861 government officials proposed setting aside the Uinta Basin as a Ute Indian reservation. President Lincoln made the Indian reservation official on May 5, 1864. On June 8 of the same year, a treaty was concluded with the Utes in which they ceded their traditional lands in eastern Utah and Sanpete County, including present-day Emery and Grand counties. They agreed to relocate to the Uintah Reservation in exchange for fair compensation of their lands, agricultural assistance, and a payment of $1.1 million to be paid over a period of 50 years (Firmage 1996). White settlers and potential colonizers saw the establishment of the Indian reservation as the end of all Native American rights and claims in the region and the rise of new rights. Utes and other Native American groups refused to accept this meaning of the reservation and fought to maintain their freedom and traditional lands.
- **1865 to 1868**. Tensions between settlers and Indian groups culminated in the Black Hawk War. Mormon settlers banded together in a series of forts established throughout the area. Under the leadership of Black Hawk, the Ute Indians united with the Paiute and Navajo tribes to raid Mormon settlements (Peterson 1994b, 1998). Several Mormon settlements and strategic locations were attacked, primarily in Utah, Sanpete, Sevier, and Piute counties. However, all of Utah felt the effects of the war (Holzapfel 1999). A peace treaty was signed in 1868; however, intermittent hostilities continued until 1872, when federal troops were ordered to engage native groups (Peterson 1994b, 1998). After the war, a last Mormon expansion and settlement period spread colonists to the more remote but still habitable regions of the northwestern Colorado Plateau. At the end of the war, most of the Ute Indians migrated to the reservation in eastern Utah.
- **1869 to 1878**. Price was established in 1869, Huntington in 1875, Moab in 1876 (originally settled in 1855 by Mormon colonists), Ashley in 1876, Dry Fork in 1877, Jensen in 1877, Maeser in 1877, Vernal in 1878, Orangeville in 1878, and Castle Dale in 1878 (Van Cott 1990).
- **1882.** The Uncompahgre Indian Reservation was established in the southern portion of Uintah County for the White River Utes and the Uncompahgres by President Chester A. Arthur (Burton 1996). When Fort Duchesne was built in 1887, the Ute Indian reservation and the Uncompahgre Indian Reservation were combined and identified as the Uintah and Ouray Indian Reservation.
- **1898 to 1905.** Manila, the county seat of Daggett County, was established in 1898 (Van Cott 1990). Small settlements rapidly flourished from Duchesne to the Utah/Colorado state line. Duchesne County was settled under federal land laws in 1905.

Industry and Community Development (1869 to 1929)

- **1869.** The discovery of silver and gold, primarily in the East Tintic Mountains in central Utah, was critical to the development of communities throughout central and western Utah and Juab counties. The towns of Diamond, Silver City, Mammoth, and Eureka became the main areas of the Tintic Mining District. By 1899 the mining district had become one of the most important producers of silver, gold, and base metals in the state (Notarianni 1994b). Between the establishment of the district (1869) and the end of World War I (1918), the mines generated an estimated $180 million in revenue (Notarianni 1994a). The only downturn in the economic history of this mining district came as a result of the Panic of 1893 (Notarianni 1994a).
- **1871.** The Utah Southern Railroad was completed in 1871 from Salt Lake City to the present-day town of Juab (Robertson 1986). The arrival of the railroad transformed Nephi into the shipping point for wool for much of Utah and southern Nevada (Wilson 1999).
- **1874.** The San Pete Valley Railway Company was incorporated in June 1874 (Carr and Edwards 1989). This line was intended to ship coal from Nephi to Wales and to connect with the standard gauge Utah Southern Railroad, stretching from Salt Lake Valley south to Utah Valley. Construction of the San Pete Valley Railway was completed in 1882 (Carr and Edwards 1989).
- **1879 to 1912**. The discovery of rich coal deposits in Pleasant Valley (1879), and later at Castle Gate (1880) and Sunnyside (1912) in Carbon County, led to a mass migration of settlers from other regions into the area. By the early 1880s, several small mining communities had been formed in the northern portion of the county, including Winter Quarters (1879), Spring Glen (1880), and Clear Creek (1870s); moreover, this discovery encouraged railroad building in Spanish Fork Canyon and Castle Valley (Watt 1997).
- **1879**. The Utah and Pleasant Valley Railway, from Springville to the Scofield area, was completed in 1879 to serve the Winter Quarters coal mines in Carbon County (Robertson 1986). The Utah and Pleasant Valley Railway was sold to the D&RGW Railway on June 14, 1882 (Carr and Edwards 1989; Robertson 1986).
- **1881.** The Salt Lake and Western Railway, a subsidiary of the Union Pacific Railroad, was the first railroad in the Tintic Mining District (Carr and Edwards 1989). The D&RGW Railway was incorporated in 1881. To construct a cost- and time-effective route, it purchased three existing rail lines controlled by C. W. Scofield: (1) the Utah and Pleasant Valley line to shorten the line, (2) the Wasatch & Jordan Valley line and (3) the Bingham Canyon and Camp Floyd line to provide ready sources of traffic once it reached Salt Lake City (Watt 1997). The D&RGW Railway was able to purchase a number of the smaller, earlier mine railroads to provide efficient transportation of ore.
- **1882 to 1883.** The San Pete Valley Railway, owned by the D&RGW Railway, was completed in 1882 from Nephi to Morrison (Robertson 1986). Also in the 1880s, construction began on the Buckhorn Flat Railroad of the D&RGW Railway; however, the rail was never laid. It was planned to extend to Los Angeles across the San Rafael Swell. The tunnels and some of the railroad bed were built; but by the end of 1883, the route was abandoned in favor of the existing D&RGW Railway line to Price (Glaab 2006). In March 1883, the D&RGW Railway completed its narrow gauge line from the town of Spanish Fork through Spanish Fork and Price canyons to the Utah/Colorado state line. The line was extended from Spanish Fork north to Ogden two months later (Strack 1994).
- **1888.** Gilsonite was discovered on lands of the Uintah and Ouray Indian Reservation and southeast of Vernal (current day Bonanza). In 1888 Congress was persuaded to remove several thousand acres of land from the reservation so that gilsonite could be mined (Bennett 1999;

Notarianni 1994a). The Gilsonite Manufacturing Company was organized in Salt Lake City in 1888 and later acquired by the Gilson Asphaltum Company (Burton 1996; Notarianni 1994a).

- **1890.** The Sevier Railway started at the junction with the main Rio Grande Western line at Thistle in Utah County and extended to Ephraim in Sanpete County. Almost two decades later, the railway was consolidated into the D&RGW Railway and was known as the Marysvale Branch of the D&RGW Railway (Robertson 1986).
- **1890s to early 1900s.** Deposits of uranium were found in the Colorado Plateau area as early as the 1870s but remained unidentified until the 1890s. The uranium industry attracted numerous miners to the area around the turn of the century. While most of the deposits were located in San Juan County, deposits also were discovered in Grand, Emery, Uintah, Carbon, and Daggett counties. In Grand County, uranium was mined at Yellow Cat northeast of present-day Arches National Park and near Professor Valley upstream on the Colorado River from Moab (Firmage 1996). In Emery County, deposits were found in Tidwell Draw immediately east of the San Rafael Reef and the Temple Mountains northwest of Castle Valley (Geary 1996). Deposits of uranium in the region have been intensively mined since the early 1900s.
- **1900 to 1920s**. Establishment of the Ashley National Forest, Manti-La Sal National Forest, and Uinta National Forest (currently the Uinta-Wasatch-Cache National Forest) increased government control of lands (Alexander 1987). The newly established control over these lands reduced the area available for sheep and cattle grazing and constrained mine prospecting, consequently improving the natural environment (Alexander 1987).
- **1904.** The Uintah Railway was incorporated in 1904. The line was built over the Book Cliffs from a large gilsonite mining operation at Dragon, Utah to Mack, Colorado, where it connected with the Rio Grande Western Railway main line (Burton 1996; Notarianni 1994a).
- **1907.** Coal deposits were discovered in Miller Creek Canyon, the site of present day Hiawatha, leading to the organization of the Consolidated Fuel Company (Strack 2013).
- **1910 to the 1920s.** This period was a prosperous one for residents of northeastern Utah. The increased use of industrial ores during World War I created an economic mini-boom in mining towns. By 1928 there were 122 registered mining districts in Utah's borders (Notarianni 1994a). While miners and mining companies were the obvious beneficiaries of this war-time demand, area farmers and ranchers also enjoyed economic prosperity by selling beef and dairy cattle and wool products. Agricultural pursuits included, but were not limited to, the production of hay, alfalfa, and other cultivated grasses and pea and sugar beet farming. Many Utah towns reached the height of their social and economic growth during this boom period.

  In concert with the mining boom, railroad development continued into the early part of the twentieth century. Some of the rail lines serving north-central and northeastern Utah include the Ballard-Thompson Railroad, constructed in 1911, from Thompson to Nelsen; the Kenilworth and Helper Railroad, built in 1911, from Kenilworth Junction (east of Helper) to Kenilworth; the Mohrland Branch of the Castle Valley Railroad (also a part of the Southern Utah Railway), operated in 1909; the Utah Railway, operated in 1914, from Provo to Thistle; the Spring Canyon Branch of the D&RGW Railroad, completed in 1920, from Spring Canyon Junction in Helper to Mutual; and the National Coal Railway, completed in 1925, to serve the coal mines in Gordon Creek Canyon (Robertson 1986; Strack 1994).

Depression Era (1929 to 1940)

- **1929**. The stock market crash in October heralded the onset of the Great Depression.
- **1934**. The Taylor Grazing Act of 1934 was intended to stabilize the economically volatile livestock industry and stop the misuse of public lands through regulatory control of those lands

by the Grazing Service. Many ranchers, however, could not afford permit fees to graze their livestock on public lands, and many were forced to sell off their herds (Hull and Avery 1980).

- **1935 to 1940**. The U.S. Government established programs of institutional relief. As part of President Franklin Delano Roosevelt's New Deal, various forms of federal aid poured into struggling communities. In general, western states received more financial support than eastern states with Utah ranking ninth overall in federal aid per capita (Holzapfel 1999). The federal government provided jobs and income to the unemployed during the depression in the form of the CCC, the WPA, and the Public Works Administration, among others.

World War II and the Post-War Era (1941 to Present)

- **1941 to 1945**. World War II brought new economic enthusiasm to Utah. The mining industry rebounded as demand levels increased. Rich in natural resources, the state contributed coal, iron, silver, copper, gas, and the refined products, among others, to the war effort (Launius 1994; Notarianni 1994a). Throughout the state, some of the previously established mines were reopened and underwent expansion, while others were constructed to deal with the demand. A strong military-industrial complex was developed in the state during the World War II era (Launius 1994). Since World War II, U.S. Department of Defense installations in Utah have become increasingly important to the state's economy. Defense spending has been the most important factor in the number of new jobs created in Utah since 1940.
- **1947 to 1970s**. Toward the end of War World II, the oil and natural gas industry provided a new incentive to the economies of Grand County and the Uinta Basin (Burton 1996; Firmage 1996). During the late 1940s and the 1950s, natural gas was largely extracted in the Ashley Valley field in Uintah County, Clear Creek field in Carbon County, and the Altonah and Bluebell fields in eastern Duchesne County (Burton 1996). Uranium mining also sparked population growth in northeastern Utah. The USACE Manhattan Project, charged with the development of an atomic bomb to end the war, instituted a secret program to mine uranium and research new possible deposits (Ringholz 1994). With the end of the war, the Atomic Energy Commission, which replaced the Manhattan Project, supported the expansion of the road system to haul ore as well as the construction of several buying stations and milling and reduction centers on the Colorado Plateau to sustain this industry (Ringholz 1994). By the end of the 1960s, the market was saturated. Commercial oil production began in Uintah County but was not fully exploited until the 1970s with the increased price of crude oil (Fuller 1994).
- **1980s to Present**. Mining, agriculture, defense, oil and gas, energy, retail, tourism, and the service industry, have played an important role in the economy of Utah, contributing to population growth in the region over the last several decades (U.S. Census Bureau 2010).

3.2.20.4 Study Methodology

The methods for the cultural resource Class I inventory used for the EIS are set forth in the Programmatic Agreement (Appendix O).

3.2.20.4.1 Inventory

Baseline cultural resource data were collected in a 4-mile-wide study corridor (2 miles on either side of the reference centerline) for each alternative route. Baseline data consists of Class I data, cultural-visual resources, NRHP-listed properties, NHL, NHTs, TCPs, and ACECs.

Class I Inventory

A Class I inventory (literature search) for the Project involved obtaining existing information on known cultural resource sites and significant cultural resource inventories previously conducted from the files of a number of agencies and institutions, including the SHPOs, BLM, and other appropriate land-management agencies. Using GIS, a shape file was created consisting of the 4-mile-wide study corridor for each alternative route. The shape file was submitted to the appropriate SHPOs, along with a Class I inventory request. The SHPOs then generated a list of projects and sites intersecting the 4-mile-wide study corridor and provided digital data as available. Class I data also were collected manually. All Class I data were entered into a database and site locations mapped in the GIS. However, the location and boundaries of previously conducted studies were only mapped where digital data are available from the appropriate SHPOs.

Class I data were collected at the following institutions and from the following databases:

- Wyoming SHPO
- Wyoming Cultural Records Office
- BLM Rawlins Field Office
- Colorado SHPO
- BLM Little Snake Field Office
- BLM White River Field Office
- BLM Grand Junction Field Office
- Utah SHPO
- BLM Vernal Field Office
- BLM Moab Field Office
- BLM Price Field Office
- BLM Fillmore Field Office
- BLM Richfield Field Office
- Uinta National Forest
- Ashley National Forest
- Manti-La Sal National Forest

General Observations and Data Gaps

The baseline Class I data used in this study represent the most current information available regarding known cultural resources in the 4-mile-wide study corridors for each alternative route. These data are being used for the purposes of the EIS analysis to assess the initial impacts on known cultural resources along the alternative routes. However, there are limitations to using the Class I data in this manner, as this is an incomplete data set. Class I data represent only the *known* and *documented* cultural resources in the 4-mile-wide study corridors and are indicative of where Class III cultural resource intensive inventories have occurred. Without additional Class III intensive inventories, which would be required under the Programmatic Agreement in compliance with the Section 106 process, the extent or lack of cultural resources along many miles of each alternative route is not known for consideration in the EIS. Comparisons between the alternative routes also are limited by the fact that each alternative route has a unique amount of previous Class III intensive survey coverage.

In addition, there are significant methodological variations in site recordation standards among the more than 8,400 sites in the study corridors. These sites have been documented over the course of several decades and professional standards in site recordation methods have changed significantly during this time. For example, there are hundreds of sites in the study corridor that pre-date the use of standard site forms, and many of these recordations do not have NRHP recommendations nor any temporal or cultural affiliations. Given the variations in site recordation standards, the most important information that can be

obtained from the site forms is location data, which provides for an understanding of site distribution patterns across the study corridor. Understanding site distribution patterns allows for the preparation of a simple map that visually represents the presence of sites throughout the study corridor. However, as mentioned above, this merely identifies the presence (or absence) of sites in locations that have been surveyed for cultural resources, and it is important to note that the absence of sites in areas where cultural resources surveys have not been conducted does not necessarily mean an absence of cultural resources in those locations. The locations are essentially data gaps. As stated elsewhere, once an Agency Preferred Alternative is selected, archaeologists will conduct comprehensive Class III studies, eliminating any data gaps that might exist along the alternative route.

Cultural-Visual Resources

Criteria have been developed to identify historic properties in the 4-mile-wide study corridor that could be visually affected by the Project, referred to herein as cultural-visual resources. It is important to note that classification as a cultural-visual resource does not mean that a cultural-visual study has been conducted, nor that a cultural-visual study has determined the Project would have a visual impact on historic properties. The CRTG would develop a methodology for the cultural resources visual effects study to be completed as part of the Class III studies. The methodology would be reviewed by the consulting parties in the Programmatic Agreement and approved by the BLM. The results of the study would be reported in addendums to the Class III technical reports for each state.

For the purposes of EIS-level analysis, historic properties meeting the following criteria may be classified as cultural-visual resources:

- National historic trails
- National historic landmarks
- Traditional cultural properties
- Historic properties listed in the NRHP
- Historic properties determined/recommended eligible for the NRHP under Criterion A, B, C, and in certain cases D, and meeting the criteria for integrity established by the ACHP (aspects of setting, feeling, and association)

In addition, the BLM could include other historic property types as determined appropriate through Section 106 consultation with American Indian tribes, interested parties, or other cooperating agencies.

With regard to historic properties, under ACHP guidelines a visual effect must alter, directly or indirectly, a characteristic of that property that qualifies it for inclusion to the NRHP and do so in a manner that would diminish that property's integrity (ACHP 2010). According to the NRHP guidelines, integrity is defined as the ability of a historic property to convey its own significance and evaluations of integrity must always be grounded in an understanding of a property's physical features and how they relate to its significance (NPS 1995). A historic property's integrity encompasses seven aspects: location, design, setting, materials, workmanship, feeling, and association. According to the NPS (1995), the aspects are defined as follows:

- **Location**. The place where the historic property was constructed or the place where the historic event occurred.
- **Design**. The combination of elements that create the form, plan, space, structure, and style of a property.
- **Setting**. The physical environment of a historic property.
- **Materials**. The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.

- **Workmanship**. The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- **Feeling**. A property's expression of the aesthetic or historic sense of a particular period of time.
- **Association**. The direct link between an important historic event or person and a historic property.

In a cultural-visual framework, the aspects of setting, feeling, and association are sensitive to visual effects because they pertain to the physical environment, features, or aesthetic sense of a property that convey the property's historic character.

The cultural-visual inventory is a separate and unrelated study from the visual resource inventory and impact assessment based on the construction, operation, and maintenance of the Project (Section 3.2.18). The visual resource inventory and impact assessment were focused in a 6-mile-wide visual resource study corridor centered on the reference centerline for each alternative route under consideration in this EIS.

Historic Properties Listed in the National Register of Historic Places

The NRHP is "the official list of the Nation's historic places worthy of preservation" (NPS 1995). It is authorized by the NHPA and is maintained by the NPS, and can be accessed via the internet at http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome.

The NRHP website provides GIS spatial data for many of the listed properties through its internet download center, available at http://nrhp.focus.nps.gov/natreg/docs/Download.html. The NRHP GIS spatial data for the study corridor was downloaded and incorporated into the Project GIS cultural data. The GIS used spatial analysis to generate a list of historic properties that intersect the 4-mile-wide study corridor. The NRHP was then reviewed to collect available data (i.e., nomination records) for those historic properties. In addition, the NRHP was reviewed to identify historic properties potentially located in the study corridor but excluded from the GIS spatial data due to their sensitivity. These potential properties were then cross-referenced against the Class I data to identify matching records. Data sources were combined to create a complete list of historic properties currently listed in the NRHP in the study corridor.

National Historic Landmarks

NHLs "are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the United States" (NPS 1999). NHL's are afforded special protection under Section 110 (f) of the NHPA, codified in 36 CFR 800.10, *Special Requirements for Protecting National Historic Landmarks*. The law states that "the agency official, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to any NHL that may be directly and adversely affected by an undertaking." As further outlined in Appendix A(c)(1) of 36 CFR 800, the ACHP may choose to participate in Section 106 consultation efforts to resolve adverse effects on NHLs. The ACHP will provide "written comments or any memoranda of agreement to which it is a signatory, to the Secretary [of the Interior], and the head of the agency responsible for the undertaking" (36 CFR 800.10(d)).

The NPS oversees the NHL Program and maintains a database that can be accessed via the internet at: http://www.nps.gov/nhl/. The database was reviewed to identify NHLs located in the 4-mile-wide study corridor.

National Historic Trails and Potential National Historic Trails

NHTs are part of the National Trails System, which is a network of scenic, historic, and recreation trails created by the NTSA. NHTs are designated by Congress to commemorate historic routes of exploration, migration, trade, communication, and military action (NPS 2014bn.d.). NHTs are formally administered by the NPS; however, land ownership may be in public or private hands.

The NPS list of NHTs was reviewed to identify the presence of such trails in the 4-mile-wide study corridor. In addition, as previously stated, the NPS is conducting a feasibility study to evaluate the addition of other historic routes to existing NHTs (NPS 2014c). The list of potential NHT route segments also was reviewed to identify the presence of potential NHT segments. The NPS spatial data for NHTs and potential NHTs was then downloaded and incorporated into the Project GIS cultural data. The GIS used spatial analysis to generate a list of NHTs and potential NHTs that intersect the 4-mile-wide study corridor.

The BLM has recently completed the NHTs Inventory Project, a multi-state multi-trail project designed to document trail settings, attributes, and resources, and to create trail information and spatial data for more than 900 miles of historic trails in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming (BLM 2012o). The study focused on six NHTs, including the Old Spanish NHT, and was designed to inventory high potential trail segments in geographically-based analysis units.

The NHTs Inventory Project data for the Old Spanish NHT in Colorado and Utah was reviewed to identify segments of the Old Spanish NHT documented during the project that intersect the study corridor. All segment data were entered into a database and the GIS spatial data were incorporated in the Project GIS cultural data. The segment data also were cross-referenced against the Class I data to identify matching records. These data sources where combined to create a complete list of formally documented Old Spanish NHT segments in the study corridor.

Traditional Cultural Properties

Later amendments to the NHPA establish that historic and cultural properties of traditional religious and cultural importance to an American Indian tribe or other cultural communities or ethnic groups may meet the criteria for listing in the NRHP. A TCP, as defined in the National Register Bulletin No. 38,

> … is a property, a place, that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998).

In carrying out its responsibilities under Section 106 of the NHPA, a federal agency is required to consult with the agencies and the public and consider the effects of a proposed undertaking on historic properties prior to the initiation of any Project. As with other cultural resources, TCPs are identified according to the procedures set forth under 36 CFR 800. Their significance is similarly assessed in accordance with NRHP criteria (36 CFR 60.4).

Examples of properties with traditional cultural significance include:

- A location associated with the traditional beliefs of an American Indian tribe about its origins, its cultural history, or the nature of the world
- A rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents

- An urban neighborhood that is the traditional home of a particular cultural group and that reflects its beliefs and practices
- A location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice
- A location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity

TCPs embrace a wide range of historic properties including but not limited to places of traditional tribal origin; places thought to have spiritual power or house spiritual beings; places where medicine is made or locations thought to have therapeutic value; burial and battle grounds; traditional hunting and plant gathering areas; and gathering places where ceremonial, artistic, economic, political, or other types of practices took place and continue to reinforce cultural identity. These sites of cultural and historical significance may or may not contain physical evidence and are usually identified through consultation with the communities that may or may not value them.

Due to the sensitive nature of TCPs, the BLM may withhold such data from disclosure to the public as needed to protect the resource (refer to BLM Manual Section 8100 Appendix 5, Sec. 304, and Appendix 8, Sec. 9). As such, the identification and evaluation of TCPs in the Project study corridor would be addressed directly with American Indian tribes or other cultural communities or ethnic groups for which a property has importance during the BLM's government-to-government consultations.

Areas of Critical Environmental Concern with Cultural Resources Components

According to the FLPMA, ACECs are "…areas within the public land where special management attention is required (where such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources, or other natural systems or processes; or to protect life/provide safety from natural hazards".

The ACEC information was gathered from secondary data sources, including RMPs and amendments from the BLM field offices traversed by the Project, LRMPs and amendments from the USFS, and data received or downloaded from federal, state, local agencies, and private entities.

For further information regarding ACECs, refer to Section 3.2.15.

3.2.20.4.2 Impact Assessment and Mitigation Planning

The cultural resource methodology for assessing the potential for impacts was developed in collaboration with the CRTG. After compiling baseline resource inventory for cultural resource sites, the methodology for assessing the potential impacts on cultural resources associated with implementation of the Project consisted of a three-step process: (1) identifying the types of potential effects on cultural resources from the Project; (2) developing criteria for assessing the cultural resource sensitivity (high, moderate, or low) of each cultural resource; and (3) calculating the overall cultural resource intensity for each alternative route.

Types of Potential Environmental Effects

The construction, operation, and maintenance of the Project would result in both direct and indirect adverse effects on cultural resources. The types of potential impacts on cultural resources include:

- Direct and permanent ground disturbance of cultural resources resulting in damage to intact surface and subsurface cultural materials, such as artifacts and features during construction of access roads, ancillary facilities, and tower locations
- Direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility
- Direct and indirect permanent disturbances of cultural resources due to changes in public accessibility (e.g., unauthorized use of access roads)

Criteria for Assessing Intensity of Impacts

Criteria were developed to evaluate the relative sensitivity of each cultural resource along each alternative route. Based on location in the study corridor, cultural sensitivity levels (high, moderate, low) were assigned. More specifically, the criteria used to define sensitivity are based on the proximity of the cultural resource to the proposed Project area of potential effect (APE); otherwise known as the cultural resources Class III intensive pedestrian inventory corridor. The Project APE is a 500-foot-wide corridor (250 feet on either side of the reference centerline). The criteria used to define sensitivity are as follows:

- **High Cultural Sensitivity**. Includes any type of cultural resource (e.g., Class I site, NRHP-listed property, NHL, NHT or potential NHT, TCP) located in the proposed APE (i.e., within 250 feet of either side of the reference centerline). Impacts on cultural resources in this area could include direct and permanent ground disturbance during construction, direct and indirect permanent disturbances due to changes in public accessibility, and direct and indirect long-term visual, atmospheric, and auditory intrusions. Also includes NHTs or potential NHTs, NHLs or TCPs located in the 4-mile-wide study corridor. Impacts could include direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions.
- **Moderate Cultural Sensitivity**. Includes any cultural resource site located within 500 feet of the proposed Project APE (i.e., between 250 feet and 750 feet from either side of the reference centerline). Impacts could include direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions.
- **Low Cultural Sensitivity**. Includes any cultural resource site located more than 750 feet from the reference centerline up to the extent of the 4-mile-wide study corridor (i.e., up to 10,560 feet on either side of the reference centerline). Impacts could include direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions.

Effects Analysis

Assessment of Initial Impacts

In this study, initial impacts on cultural resources are defined as those impacts that would occur on cultural resources without the application of mitigation measures. The resource sensitivity level assigned to each cultural resource was used to evaluate the extent of cultural resource intensity of each alternative route in 0.1-mile segments. The initial cultural resource sensitivity levels were assigned using the criteria presented above. This information was then compiled, and the length of each sensitivity level was calculated for each alternative route. Table 3-261 summarizes the initial cultural resource intensity levels that provided the basis for assessing initial impacts on cultural resources.

TABLE 3-261
SUMMARY OF ESTIMATED CULTURAL RESOURCE IMPACTS

Alternative Route	Total Miles	Low Impacts[1] (miles)	Moderate Impacts[1] (miles)	High Impacts[1] (miles)
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)				
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	154.0	15.1	37.2
WYCO-C	210.0	142.4	9.4	58.2
WYCO-D	249.4	207.8	24.1	17.5
WYCO-F	218.8	168.9	17.9	32
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)				
COUT BAX-B	279.9	151.6	14.1	114.2
COUT BAX-C	290.4	173.1	15.6	101.7
COUT BAX-E	292.2	188.4	15.9	87.9
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)				
COUT-A	207.9	195.0	9.7	3.2
COUT-B	218.2	201.1	10.9	6.2
COUT-C (Agency and Applicant Preferred Alternative)	208.2	196.5	5.6	6.1
COUT-H	200.6	181.2	8.9	10.5
COUT-I	240.2	218.1	10.3	11.8

NOTES: [1]Based on cultural resource intensity (high cultural sensitivity equals 0 to 250 feet, moderate cultural sensitivity equals 250 to 750 feet, and low cultural sensitivity equals more than 750 feet).

Mitigation Planning

Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies.

Direct impacts on historic properties can be effectively reduced and, in some instances, eliminated through Project design changes. Avoidance is the preferred method to eliminate or reduce impacts on historic properties. In areas where the transmission line spans historic properties, the selective alignment of new access roads would likely provide adequate avoidance and reduce the impacts on historic properties. If avoidance of historic properties is not possible, other efforts would be necessary. Indirect impacts would need to be resolved through mitigation efforts as well.

All mitigation efforts would be in accordance with the Programmatic Agreement negotiated for this Project and would be documented in HPTPs. As identified in the Programmatic Agreement, HPTPs would provide information on the following:

- A brief description of the proposed action
- A list of the historic properties where data recovery would be carried out
- A list of historic properties that would require archaeological monitoring during construction
- An archaeological construction monitoring plan
- Research questions to be addressed
- Methods to be used during fieldwork for data recovery
- A cultural resource unanticipated discovery plan
- NAGPRA plan of action

- Methods to be used during laboratory analysis
- Reporting and curation of artifacts
- Schedule for the submission of progress reports
- Recommendations for treatment of historic properties during operation and maintenance of the Project
- Qualifications of consultants employed to undertake the work
- Training protocols for contractors

3.2.20.5 Results

3.2.20.5.1 No Action Alternative

Under this alternative route, the environment would remain as it presently exists. No impacts on cultural resources would occur if the proposed Project were not implemented.

3.2.20.5.2 Impacts Common to All Action Alternatives

Potential impacts on cultural resource sites could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). These types of disturbance could damage or destroy cultural resources if not mitigated.

3.2.20.5.3 Cultural Resources Inventory Summary

Class I Sites

The Class I inventory resulted in the identification of 8,450 cultural resource sites in the 4-mile-wide study corridor. These sites include 5,842 prehistoric sites, 2,123 historic sites, 481 multi-component (prehistoric and historic components) sites, and 4 ethnographic sites. These sites, broken down by state, consist of 3,294 prehistoric sites, 274 historic sites, and 222 multi-component sites in Wyoming; 996 prehistoric sites, 357 historic sites, and 94 multi-component sites in Colorado; and 1,552 prehistoric sites, 1,492 historic sites, 165 multi-component sites, and 4 ethnographic sites in Utah. Cultural resources encompass a broad range of cultural and temporal affiliations spanning the Paleoindian Period to the Historic Period (mid-twentieth century).

The prehistoric sites include lithic and ceramic scatters, campsites, short- and long-term habitations, rock shelters and caves, lithic landscapes, lithic procurement areas, rock art, ceremonial sites, burials, isolated features or structures, and villages. Historic sites largely consist of artifact scatters/dumps, short- and long-term habitations, art sites (e.g., inscriptions, dendroglyphs, and petroglyphs), water and erosion control features, trails and roads, utility lines, railroads, mining-related sites, cemeteries, and town sites. Sites identified as ethnographic, include a pitch procurement area, a collapsed sweathouse (ceremonial), and a habitation site (tepee poles) most likely associated with the historic Ute. Cultural resources assigned to this category (ethnographic) are considered of significance in the cultural system of the groups traditionally associated with the area. Consultation with American Indian tribes concerning the identification of TCPs has occurred for at least two of the three sites, and no particular religious or cultural significance to the locality has been indicated. Of particular importance, the use of the category ethnographic to define these three sites, as well as other categories (e.g., prehistoric, historic, and protohistoric), appears to be somewhat subjective. As a result, a number of sites do not fit appropriately into their pre-established categories.

Table 3-262 provides a summary of baseline cultural resource data for each alternative route and series compensation station. To clarify, this table represents known sites from the Class I data with definitive physical manifestations and/or cultural materials revealed by cultural resource pedestrian surveys.

TABLE 3-262
SUMMARY OF CULTURAL RESOURCES INVENTORY DATA

Alternative Route	Number of Class I Sites									Number of NRHP-listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Class I Cultural-Visual Sites[2]	Number of Areas of Critical Environmental Concern with Cultural Components
	NRHP-Eligible Sites			Not Eligible Sites			Unevaluated Sites			Total Number of Class I Sites[1]				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Wyoming														
WYCO-B (Agency and Applicant Preferred Alternative)	480	33	48	896	109	48	492	19	35	2,161	1	2[3]	10	0
WYCO-C	264	33	33	767	123	43	421	26	32	1,744	2	2[3]	10	0
WYCO-D	233	45	30	546	127	41	371	32	33	1,460	2	2[3]	17	0
WYCO-F	507	34	55	982	118	49	538	21	40	2,345	1	2[3]	10	0
Colorado														
WYCO-B (Agency and Applicant Preferred Alternative)	39	2	5	89	9	6	52	2	4	208	0	0	2	0
WYCO-C	32	2	5	88	9	6	51	2	4	199	0	0	2	0
WYCO-D	68	14	7	113	32	5	77	7	4	327	0	0	9	0
WYCO-F	39	2	5	89	9	6	52	2	4	208	0	0	2	0
COUT BAX-B	74	58	17	268	235	26	153	14	18	865	2	1[4]	55	0
COUT BAX-C	74	58	17	268	235	26	153	14	18	865	2	1[4]	55	0
COUT BAX-E	74	58	17	268	235	26	153	14	18	865	2	1[4]	55	0
COUT-A	20	1	3	62	15	4	25	5	3	138	0	0	4	0
COUT-B	20	1	3	62	154	4	25	5	3	138	0	0	4	0
COUT-C (Agency and Applicant Preferred Alternative)	21	2	3	64	18	4	31	6	3	152	0	0	5	0

TABLE 3-262
SUMMARY OF CULTURAL RESOURCES INVENTORY DATA

Alternative Route	Number of Class I Sites									Number of NRHP-listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Class I Cultural-Visual Sites[2]	Number of Areas of Critical Environmental Concern with Cultural Components
	NRHP-Eligible Sites			Not Eligible Sites			Unevaluated Sites			Total Number of Class I Sites[1]				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
COUT-H	21	2	3	64	18	4	31	6	3	152	0	0	5	0
COUT-I	21	2	3	64	18	4	31	6	3	152	0	0	5	0
Utah														
COUT BAX-B	174	123	23	146	189	23	39	13	1	733	26	1	106	4
COUT BAX-C	185	135	23	129	206	24	41	11	0	745	26	1	116	1
COUT BAX-E	200	175	37	175	324	39	29	10	0	991	6	1	89	1
COUT-A	104	109	8	119	166	20	16	6	4	553	6	0	55	0
COUT-B	134	165	16	125	182	21	19	5	3	671	6	0	87	0
COUT-C (Agency and Applicant Preferred Alternative)	305	77	21	218	329	19	18	6	0	994	6	0	55	1
COUT-H	338	141	26	241	447	24	21	14	0	1,253	10	0	87	1
COUT-I	423	130	26	263	467	17	23	10	0	1,360	24	0	95	1

NOTES:
[1]The number of Class I Sites for Alternatives WYCO-C and WYCO-D in Wyoming; the COUT BAX alternative routes in Colorado and Utah; and Alternatives COUT-C, COUT-H, and COUT-I include National Register of Historic Places listed properties in the next column that have Smithsonian numbers.
[2]The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the study corridor.
[3]Potential national historic trail – National Park Service conducting feasibility study.
[4]Includes the Old Spanish National Historic Trail, which is located in the vicinity of the study corridor.
NRHP = National Register of Historic Places

Detailed discussions of the inventory results for each alternative route and series compensation station are provided in subsequent paragraphs.

Historic Properties Listed on the National Register of Historic Places

Baseline information on previously identified archaeological and historical resources was reviewed to determine if any are located in the study corridor. In addition to the 8,450 cultural resource sites identified in the Class I inventory, the literature review identified 35 historic properties currently listed in the NRHP, including 23 historic buildings, 6 historic districts, 1 single resource district, 4 archaeological sites, and 1 historic structure, as defined under 36 CFR 60.3(p). Of the 35 NRHP-listed properties, 30 are in Utah, 3 are in Wyoming, and 2 are in Colorado. Table 3-263 provides a summary of the NRHP-listed properties by state.

The Wyoming portion of the proposed Project includes a historic building (Hanna Community Hall [48CR3764]), a historic military fort (Fort Fred Steele Historic Site [48CR480]), and a historic landmark (Red Rock Site [48SW771]) on the Overland Historic Trail. This trail-related property contains approximately one dozen carved names and dates of those trappers, explorers, and early pioneers who traveled westward on the trail.

NRHP-listed properties in Colorado include an archaeological resource (Carrot Men Pictograph Site [5RB106]) represented by two Fremont rock art panels and an open campsite and an archaeological district (Canyon Pintado National Historic District [5RB984]) that contains numerous archaeological sites (i.e., rock art panels, storage and habitation structures, open campsites, artifact scatters, and rock shelters) commonly associated with Fremont and Ute occupations of the Douglas Creek Canyon in Rio Blanco County, Colorado.

Of the 30 NRHP-listed properties identified in Utah, 22 are historic buildings, 6 are historic districts, 1 is a historic structure, and 1 is an archaeological site. Historic buildings or building complexes include 14 privately owned houses, 1 farmstead, 2 post-office buildings (Helper and Nephi Main), 1 high school building (Mount Pleasant High School Mechanical Arts), 1 commercial building (Clerico Building), 1 social center (Martin Millarich Hall/Slovenian National Home), 1 law enforcement property (Juab County Jail), and the Mount Pleasant Carnegie Library (1 of the 16 remaining Carnegie libraries of the 23 built in Utah in 1917). Districts are represented by the Fountain Green Hydroelectric Plant Historic District, the Mount Pleasant National Guard Armory (single resource district), the Wasatch Academy, the Mount Pleasant and Helper commercial districts, and Buckhorn Wash Rock Art Sites archaeological district (42EM1122), represented by a substantial concentration of distinct Fremont rock art panels and prehistoric archaeological sites (e.g., lithic scatters and open campsites). The remaining historic properties are the Denver and Rio Grande Lime Kiln (Buckhorn Flat Lime Kiln) constructed in 1881 to 1882 and a prehistoric Fremont village known as Nephi Mounds (42JB2), which contained numerous habitation and storage structures, as well as a diverse array of cultural materials. This site has been destroyed by decades of plowing.

TABLE 3-263
PROPERTIES LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES

Property Name	National Register Number	Smithsonian Number	Property Theme	Property Type	Dates	National Register of Historic Places Eligibility Criteria
Wyoming						
Fort Fred Steele Historic Site	69000185	48CR480	Military, Indian affairs, transportation	Fort	1868 to 1939	Listed (Criterion A)
Red Rock	78002832	48SW771	Architecture, commerce, transportation, art	Monument, inscription	1862 to 1869	Listed (Criteria A, C)
Hanna Community Hall	83004277	48CR3764	Architecture, commerce, trade	Saloon, pool hall, social center	1921 to Present	Listed (Criterion C)
Colorado						
Cañon Pintado National Historic District (Canyon Pintado)	75000538	5RB984	Archaeological district, rock art, exploration, settlement	Petroglyphs, pictographs	Fremont (Formative 2,000 to 700 B.P.); 1500 to 1881 (Ute)	Listed (Criteria A, B, C)
Carrot Men Pictograph Site	75000539	5RB106	Rock art, nonresidential	Pictographs, campsite	Fremont (Formative 2,000 to 700 B.P.)	Listed (Criteria A, C)
Utah						
Mount Pleasant Carnegie Library	64000861	Not applicable	Education	Library	1917	Listed (Criteria A, C)
Nephi Mounds	75001808	42JB2	Residential base	Village	Fremont (Formative 2,000 to 700 B.P.)	Listed (Criterion D)
Hans Peter Olsen House	76001834	Not applicable	Architecture	Habitation	1877	Listed (Criterion C)
Morten Rasmussen House	77001317	Not applicable	Architecture	Habitation	1875	Listed (Criterion C)
George Carter Whitmore Mansion/Colonial Villa	78002663	Not applicable	Architecture	Habitation	1898 to 1900	Listed (Criteria B, C)
Wasatch Academy	78002690	Not applicable	Education	High school	1893 to 1938	Listed (Criteria A)
Helper Commercial District	79002491	Not applicable	District, architecture, commerce, education, politics, government, religion, other	Commercial district	1896 to 1945	Listed (Criteria A, C)
Edwin Robert Booth House	79002497	Not applicable	Architecture	Habitation	1893	Listed (Criterion C)
Mount Pleasant Commercial Historic District	79002508	Not applicable	District, commerce, government	Commercial district	1875 to Present	Listed (Criteria A, C)
Alma Staker House	79002509	Not applicable	Architecture	Habitation	1870 to 1875	Listed (Criterion C)
James B. Staker House	80003954	Not applicable	Architecture	Habitation	1880	Listed (Criterion C)
Cyrus Wheelock House/Madsen House	80003955	Not applicable	Architecture	Habitation	1860	Listed (Criterion C)
Martin Millarich Hall/ Slovenian National Home	80003894	Not applicable	Ethnicity, commerce, mining, mineral extraction, politics, government	Social center	1922	Listed (Criterion A)

TABLE 3-263
PROPERTIES LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES

Property Name	National Register Number	Smithsonian Number	Property Theme	Property Type	Dates	National Register of Historic Places Eligibility Criteria
Buckhorn Wash Rock Art Sites	80003898	42EM1122	Archaeological district, rock art, residential base	Pictographs, habitation	Fremont (Formative 2,000 to 700 B.P.)	Listed (Criterion A, B, C)
Denver and Rio Grande Lime Kiln (Buckhorn Flat Lime Kiln)	80003901	Not applicable	Commerce, exploration, settlement, transportation [railroad]	Kiln	1881 to 1882	Listed (Criterion A)
Ole Arlisen House	80003953	Not applicable	Architecture	Habitation	1875 to 1899	Listed (Criteria C)
Frederick C. Jensen House	82004158	Not applicable	Architecture	Habitation	1891	Listed (Criterion C)
John H. Seeley House	82004159	Not applicable	Architecture	Habitation	1870 to 1890	Listed (Criterion C)
N. S. Nielson House	82004160	Not applicable	Architecture	Habitation	1892	Listed (Criterion C)
Andrew Barentsen House	83003185	Not applicable	Architecture	Habitation	1874	Listed (Criterion C)
Oscar M. Booth House	83004399	Not applicable	Architecture	Habitation	1893	Listed (Criterion C)
Mount Pleasant High School Mechanical Arts Building	85000812	Not applicable	Education	School	1935 to 1936	Listed (Criteria A, C)
Mount Pleasant National Guard Armory	86000740	Not applicable	Military	Armory	1936 to 1937	Listed (Criteria A, C)
Juab County Jail	87002060	Not applicable	Service industry	Correctional facility, law enforcement	1892 to 1937	Listed (Criterion A)
Fountain Green Hydroelectric Plant Historic District	89000277	Not applicable	District, engineering, industry, community development	Hydroelectric	1922 to 1923	Listed (Criteria A, C)
Helper Main Post Office	89001995	Not applicable	Federal agency, architecture,	Post office, art	1900 to 1941	Listed (Criteria A, C, D)
Nephi Main Post Office	89001996	Not applicable	Federal agency, architecture,	Post office	1931 to 1941	Listed (Criteria A, C)
William Stuart Seeley House/ Mount Pleasant Pioneer Historical Association Relic Home/Museum	92000894	Not applicable	Architecture, politics, recreation	Habitation, museum	1861 to 1895	Listed (Criteria A, B, C)
Watkins-Tholman-Larsen Farmstead	96001531	Not applicable	Farming, ranching	Farmstead	1870	Listed (Criterion A)
Clerico Commercial Building	99000619	Not applicable	Architecture, commerce, recreation	Commerce building	1914 to 1940s	Listed (Criteria A, C)

NOTE: B.P. = Before Present day

Areas of Critical Environmental Concern

The study corridor contains 14 areas with special management and/or designation that recognize nationally and locally significant resources and values, including 5 ACECs in Colorado and 9 ACECs in Utah; to date, no ACECs have been identified in the Wyoming portion of the study corridor. In Colorado, designated areas include Badger Wash ACEC (managed by the BLM Grand Junction Field Office) and the Oil Spring Mountain ACEC, Raven Ridge ACEC, Raven Ridge Addition ACEC, and White River Riparian ACEC (managed by the BLM White River Field Office). In Utah, designated ACECs include Big Hole, Cottonwood Canyon, Grassy Trail, Smith Cabin, Tidwell Draw, and San Rafael Canyon ACEC (managed by the BLM Price Field Office); Lears Canyon ACEC and Lower Green River Corridor ACEC (managed by the BLM Price Field Office); and Nine Mile Canyon ACEC (managed by the BLM Price and the BLM Vernal Field Offices). Big Hole, Grassy Trail, and Cottonwood Canyon are areas contained in the delineated boundaries of Rock Art ACEC. In addition, Smith Cabin is maintained by the Heritage Sites ACEC and Tidwell Draw, maintained by the Uranium Mining Districts ACEC. Of the 14 areas designated as ACECs, only 6 (Big Hole, Cottonwood Canyon, Grassy Trail, Smith Cabin, Tidwell Draw, and Nine Mile Canyon) were identified to protect important cultural resources values. For the purpose of this report, only the ACECs identified in part to protect significant cultural resources have been considered herein.

Rock Art Area of Critical Environmental Concern (Big Hole, Cottonwood Canyon, and Grassy Trail)

The Rock Art ACEC (previously known as Pictograph ACEC), managed by the BLM Price Field Office, was established to protect and enhance the cultural value of the area. This cultural ACEC is represented by a cluster of rock art sites encompassed in a 5,300-acre area (BLM 2008d). These cultural areas represent three fine examples of Barrier Canyon (Archaic) and San Rafael Fremont rock art on the Colorado Plateau. Sites include Black Dragon Canyon, Head of Sinbad, Lone Warrior, Rochester/Muddy Petroglyphs, Big Hole, Cottonwood Canyon, Wild Horse Canyon, Sand Cove Spring, Dry Wash, Short Canyon, North Salt Wash, Molen Seep, Grassy Trail, and King's Crown. These cultural areas have also been identified as part of the San Rafael National Heritage Area. Additional archaeological resources in these areas include prehistoric lithic and artifact scatters, habitation structures (primarily in the Grassy Trail area), and open campsites. These areas are currently threatened by a conflict between the public use of rock art and the destruction of scientific potential of the associated archaeological sites.

Heritage Sites Area of Critical Environmental Concern (Smith Cabin)

The Heritage Sites ACEC, managed by the BLM Price Field Office, contains several historic sites and encompasses a 16,690-acre area (BLM 2008d). Sites include the Wilsonville Ghost Town, Sheperds End, Smith Cabin, Hunt Cabin, Copper Globe, Temple Mountain, and Swaseys Cabin that represent early historic settlement, cultural land use, and settlement patterns. Smith Cabin, is located in the study corridor and is a fine example of homesteading on public lands in the San Rafael region in Emery County, Utah.

Uranium Mining Districts Area of Critical Environmental Concern (Tidwell Draw)

The Uranium Mining Districts ACEC, managed by the BLM Price Field Office, encompasses a 3,470-acre area (BLM 2008d). Several mining-related sites of historic significance comprise the ACEC. These include, but are not limited to, mining complexes, camps, habitations, and isolated features and structures. Sites include Tidwell Draw, Hidden Splendor, Susan B/Little Susan, and Lucky Strike Mining Districts. These sites are associated with uranium exploration as part of U.S. efforts during the Cold War period of the 1950s and 1960s (BLM 2008d).

One of the sites maintained by the Uranium Mining Districts ACEC, Tidwell Draw, is located in the study corridor. It represents a fine example of uranium exploration near the basin margins of the Green and San Rafael rivers in the San Rafael region in Emery County, Utah.

Nine Mile Canyon Area of Critical Environmental Concern

The Nine Mile Canyon ACEC, managed by both the BLM Price and Vernal Field Offices, was established to protect cultural resources, scenic values, and special status species (BLM 2008d, f). The southern boundary of the ACEC coincides with the south rim of the canyon, encompassing about 26,000 acres in Carbon County, Utah, and extending eastward to the Green River. The area contains significant Archaic, Fremont, and Ute rock art sites, storage facilities (e.g., cists and granaries), open campsites, and habitations; historically significant farming and ranching resources; and a historic U.S. Army outpost. Prehistoric cultural resources include, but are not limited to, rock shelters, remnants of pit house structures, cists and granaries, ramps, forts, pithouse villages, and dense concentrations of highly elaborate rock art panels (e.g., petroglyphs, pictographs, and inscriptions) depicting both prehistoric and historic elements. There are hundreds of rock art panels along the canyon, nearly all of them with petroglyphs. Although Nine Mile Canyon is located in the Fremont area, rock art manifestations are considered to be substantially different from the art in most of the Uinta Basin (Castleton 1984). Historic sites include, but are not limited to, mining-related activities, waterworks, road and trails, and dismantled utility lines. The BLM has determined the area eligible for the NRHP. The overall area is vulnerable to adverse change, including oil and gas development and OHV use.

National Historic Trails

NHTs are "extended trails which follow as closely as possible and practicable the original trails or routes of travel of national historical significance," whose purpose is "the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment" (NPS 2014c).

The only historic linear feature designated as an NHT to traverse the study corridor is the Old Spanish NHT, designated as such on December 4, by the Old Spanish Trail Recognition Act of 2002. One of the main routes of the Old Spanish NHT (the Northern Route) and a variant (the Northern Branch) cross much of the southern boundary of the study corridor. Approximately one-half of the overall trail system is located in southern Utah and west-central and southwestern Colorado. In the study corridor, the trail follows a portion of the Colorado River, west of the community of Fruita, in Mesa County, Colorado; it generally continues west into Utah across a vast and arid landscape along the U.S. highway corridor (U.S. Highway 6/U.S. Highway 50) just below the Book Cliffs. Thereafter, the trail turns north-northwest through the San Rafael Desert and reaches its northernmost point in the northern half of the San Rafael Swell. Certain segments of the route are still intact, and a plethora of historic artifacts and historic trail-related features are found along the historic transportation corridor.

Several locations across the southern portion of the study corridor would be intersected and have the potential to be intersected by segments of the Old Spanish NHT. In southeastern Utah, the trail has been extensively documented traveling westward across Sagers and Crescent flats, just below the southern margin of the Book Cliffs, alongside the old U.S. Highway 6 and U.S. Highway 50 and the I-70 corridor. Segments of the trail (Northern Branch) have been identified near White House and Floy sidings and near the communities of Thompson Springs, Crescent Junction, and east of Green River in the Gunnison Valley where the Northern Branch meets with the Northern route of the trail (Horn et al. 2011). From there, discernible traces of the route have been identified along Saleratus Wash, just west of the community of Green River. At the confluence of Cottonwood Wash and Lost Springs Wash, the trail was found to stretch northwest toward Trail Spring, historically one of the most reliable watering spots encountered past the Green River. Present through this area is the abandoned Buckhorn Flat Railroad of the D&RGW Railway. Based on previous field observations and historical accounts, the trail appears to

split into two possible routes at Trail Spring. One branch runs from Trail Spring north to Lost Spring Wash, near the confluence of Big Hole Wash and Joes Hole Wash. The second branch leaves Trail Spring and appears to follow Cottonwood Wash and continues northwestward. In the vicinity of Big Hole Wash, variants of the trail are visible across Horse Heaven and along Chimney Rock Flat, Furniture Draw, and onto Buckhorn Flat, immediately south of Cedar Mountain and Little Cedar Mountain and the eastern portion of Castle Valley in the northern end of the San Rafael Swell. Thereafter, it continues in a southwestward direction out of the study corridor.

A total of 93 segments of the Northern Route (42EM4359) of the Old Spanish NHT and the Northern Branch (42GR4716) have been identified and documented in the study corridor in Emery and Grand counties, Utah (Horn et al. 2011). These include 26 visible segments (42GR4716 [Segs. 20 to 45]), 3 unlabeled visible segments, and 10 extrapolated segments (42GR4716 [UT-SR Segs. I, J, N, O, P, K, R, S, T, and U]) of the Northern Route of the trail in the Book Cliffs area and 47 visible segments (42EM4359 [Segs. 1 to 43; 49 to 52]), 6 extrapolated segments (42EM4359 [UT-SR Segments A to H; K to N]), and 1 potential route of the Northern Branch in the San Rafael Swell area (Horn et al. 2011). A comprehensive description of the path of the Old Spanish NHT in Utah is provided in the NHTs Inventory Project Tasks 4, 5, and 6 Memo Report for Utah Main Route, Northern Branch, and Armijo Route of the Old Spanish NHT in Emery, Grand, Kane, Piute, San Juan, and Sevier counties, Utah (Horn et al. 2011). For the purpose of that project, Alpine Archaeological Consultants Inc. (Alpine) on behalf of AECOM, completed a pedestrian inventory of 7 analysis units (Blue Hills, Book Cliffs, Box of the Paria, East Canyon, Koosharem, Long Valley, and San Rafael Swell) and a refinement of the possible route of the Bulldog Canyon segment of the Old Spanish NHT in Utah. This study is one of the several cultural resource inventories conducted under the BLM's NHTs Inventory Project.

In west-central and southwestern Colorado, segments of the Northern Branch (5ME18277) of the Old Spanish NHT have the potential to be intersected by the study corridor west of the town of Fruita in Mesa County, Utah, along what is now U.S. Route 50, and in the vicinity of the Green River corridor west to the Colorado/Utah state line. There, the trail (5ME18277.15) corresponds to a section of the Salt Lake Wagon Road that overlies the Old Spanish NHT (BLM 2012o). Traces of the Northern Branch of the Old Spanish NHT in Colorado have been identified and documented in the vicinity of the study corridor at the Colorado/Utah state line just west of Rabbit Valley in Mesa County alongside the western margin of the Colorado River; however, to date there is no concrete evidence of the trail's path through the Colorado portion of the study corridor (BLM 2012o).

Cultural Resource Sites with Visual Sensitivity

The cultural-visual resource study identified 393 sites as visually sensitive. These sites include NHTs, TCPs, historic properties listed in the NRHP, or historic properties eligible for the NRHP listing under Criterion A, B, C, and in certain cases D, and meeting the integrity criteria discussed in Section 3.2.20.4. The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the study corridor. Prehistoric sites that meet the criteria include, but are not limited to, cave complexes and rock shelters, habitation and storage structures, and rock art. Historic sites that meet the criteria include, but are not limited to, town sites, artifact scatters, standing structures (e.g., bridges and buildings), homesteads/farmsteads, inscriptions, cemeteries, military facilities, oil drilling camps, railroad- and mining-related sites, water and erosion control features, WPA and CCC works, ceremonial and sacred sites, a Mormon pioneer monument, and historic linear features (e.g., railroads, canals, roads/trails, fences, and utility lines).

3.2.20.5.4 345-kilovolt Ancillary Transmission Components

A total of 23 sites were identified in the Class I inventory conducted for the 345kV ancillary transmission components in Utah, including 18 prehistoric sites, 4 historic sites, and 1 multi-component site. Of the

sites, 91 percent (n=21) are in the low cultural resource intensity zone and 9 percent (n=2) are in the high cultural resource intensity zone in the Project APE. There are no sites in the moderate cultural resource intensity zone. Sites in the Project APE include a short-term prehistoric campsite and the Old Canyon Road, which crosses Links U640 and U642 in an easterly direction. The southern portion of the prehistoric campsite is traversed by the eastern terminus of Link U644. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads, and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

If the Project goes forward, a complete Class III intensive pedestrian inventory would be conducted along the entire 345kV ancillary transmission components as part of the Class III study. All sites located in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP, and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity will also be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions; and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

3.2.20.5.5 500-kilovolt Transmission Line Components

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

The baseline resource inventory and initial impacts for the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes are presented in Table 3-264.

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Affected Environment (Wyoming)

Class I Sites

A total of 2,161 sites were identified in the Class I inventory conducted for Alternative WYCO-B in Wyoming, including 1,868 prehistoric sites, 162 historic sites, and 131 multi-component sites (Table 3-264). Of the sites, 90 percent (n=1,964) are in the low cultural resource intensity zone; 5 percent (n=114) are in the moderate cultural resource intensity zone; and 4 percent (n=83) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 30 prehistoric campsites, 28 prehistoric lithic and artifact scatters, 1 prehistoric lithic procurement area, 1 prehistoric thermal feature (concentration of fire-cracked rock), 2 historic cairns, 1 historic artifact scatter, 5 prehistoric campsites and historic artifact scatters/livestock enclosure, 1 prehistoric lithic scatter and historic artifact scatter, and 14 segments of 11 historic linear sites (i.e., pipeline, power lines, railroad, and roads/trails). The Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway are in the Project APE along this alternative route. The Rawlins to Baggs Stage Road and the Lincoln Highway are crossed by Link W30.

TABLE 3-264
ALTERNATIVE ROUTE COMPARISON FOR CULTURAL RESOURCES INVENTORY DATA AND INITIAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Cultural Resource Type (Number)					Initial Impacts (miles)		
		Class I Site[1]	Class I Cultural-Visual Sites[2]	National Register of Historic Places Listed Property	Potential National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	2,369	12	1	2	0	154	15.1	37.2
Wyoming	*141.0*	*2,161*	*10*	*1*	*2*	*0*	*92.2*	*13.6*	*35.2*
Colorado	*65.3*	*208*	*2*	*0*	*0*	*0*	*61.8*	*1.5*	*2*
WYCO-C	210.0	1,943	12	2	2	0	142.4	9.4	58.2
Wyoming	*144.7*	*1,744*	*10*	*2*	*2*	*0*	*80.6*	*7.9*	*56.2*
Colorado	*65.3*	*199*	*2*	*0*	*0*	*0*	*61.8*	*1.5*	*2*
WYCO-D	249.4	1,787	27	2	2	0	207.8	24.1	17.5
Wyoming	*134.9*	*1,460*	*17*	*2*	*2*	*0*	*100.6*	*19.3*	*15*
Colorado	*114.5*	*327*	*9*	*0*	*0*	*0*	*107.2*	*4.8*	*2.5*
WYCO-F	218.8	2,553	12	1	2	0	168.9	17.9	32
Wyoming	*153.5*	*2,345*	*10*	*1*	*2*	*0*	*107.1*	*16.4*	*30*
Colorado	*65.3*	*208*	*2*	*0*	*0*	*0*	*61.8*	*1.5*	*2*

NOTES:
[1]The number of Class I Sites for the WYCO segment in Wyoming include National Register of Historic Places listed properties (in that column) that have Smithsonian numbers
[2]The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the study corridor

Cultural-Visual Resources

A total of 10 historic properties associated with Alternative WYCO-B in Wyoming are identified as visually sensitive. These include Fort Fred Steele Historic Site (48CR480), 1 bridge, 1 shearing station (Walcott), 1 homestead with a prehistoric component, 1 historic art site (inscriptions), 1 power line (Cheyenne to Miracle Mile Transmission Line), the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway.

Historic Properties Listed in the National Register of Historic Places

The Class I and NRHP records search identified Fort Fred Steele Historic Site (48CR480) along Alternative WYCO-B in Wyoming. Fort Fred Steele was established in June 30, 1868, on the west bank of the North Platte River in Carbon County, Wyoming. It was one of four U.S. military outposts in southern Wyoming that provided security along the Union Pacific's transcontinental railroad corridor. Fort Fred Steele was listed on the NRHP in April 16, 1969, and designated a Wyoming State Historic Site in 2010. This historic property is in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

Traces of the Cherokee and Overland historic trails have been documented along Alternative WYCO-B in Wyoming. Link W302 crosses one segment of the Cherokee Historic Trail that follows the valley of Colloid Draw, an east-trending ephemeral drainage, located to the northeast of the Cherokee Basin, in Sweetwater County, Wyoming. This segment of the trail was evaluated as non-contributing to the overall NRHP eligibility of the Cherokee Historic Trail (Johnson 2011). Link W108 crosses two consecutive segments of the Overland Historic Trail at Wamsutter-Dad Road, approximately 3.0 miles north of the confluence of Coal Gulch and Little Coal Gulch, Carbon County, Wyoming. These segments of the trail were evaluated as contributing (west of the alternative route centerline) and non-contributing (east of the reference centerline) to the overall NRHP eligibility of the Overland Historic Trail (Johnson 2011).

Additional segments of the Cherokee and Overland historic trails have also been identified in both low and moderate cultural resource intensity zones, to the east and west of the Project APE. The NPS is conducting a feasibility study to evaluate the addition of the Cherokee Historic Trail and the Overland Historic Trail to the California NHT (NPS 2012). These previously recorded segments of the Cherokee and Overland historic trails are included in the Class I data but are reiterated due to their historical significance.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Wyoming segment of Alternative WYCO-B.

Environmental Consequences (Wyoming)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-B has the second highest miles of high cultural resource intensity. In Wyoming, there are 35.2 miles of high, 13.6 miles of moderate, and 92.2 miles of low cultural resource intensity (Table 3-264). Most of the sites located in the Project APE along this alternative route, occur in Wyoming. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 35.2 miles of high cultural resource intensity in Wyoming are the result of 83 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources identified along Alternative WYCO-B in Wyoming are Fort Fred Steele Historic Site (48CR480), the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway. These resources are in the Project APE, except for the NRHP-listed property. Although Fort Fred Steele Historic Site (48CR480) is located beyond the Project APE, it could be subject to indirect effects.

If this alternative route is selected, a complete Class III intensive pedestrian inventory would be conducted along the entire alternative route as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP, and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity also would be documented and evaluated. All site information would be provided in the

Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions; and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Affected Environment (Colorado)

Class I Sites

A total of 208 sites were identified in the Class I inventory conducted for Alternative WYCO-B in Colorado, including 180 prehistoric sites, 13 historic sites, and 15 multi-component sites (Table 3-264). Of the sites, 92 percent (n=192) are in the low cultural resource intensity zone; 4 percent (n=8) are in the moderate cultural resource intensity zone; and 4 percent (n=8) are in the high cultural resource intensity zone in the Project APE along this alternative route. Sites in the Project APE include 5 prehistoric lithic scatters, 2 prehistoric campsites, and 1 prehistoric pithouse. Although no segments have been formally documented as intersecting this alternative route, the Old Victory Highway crosses Alternative WYCO-B at Link C92. Known segments of the road are outside of the Project APE.

Cultural-Visual Resources

Two historic properties (Brown's Park Road and the Old Victory Highway) associated with Alternative WYCO-B in Colorado are identified as visually sensitive.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative WYCO-B.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Colorado segment of Alternative WYCO-B.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-B.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-B has the second highest miles of high cultural resource intensity. In Colorado, there are 2.0 miles of high, 1.5 miles of moderate, and 61.8 miles of low cultural resource intensity (Table 3-264). Most of the cultural resource sites in the Project APE along this alternative route occur in Wyoming and not in Colorado. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 2.0 miles of high cultural resource intensity in Colorado are the result of eight known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and

association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

A key resource along Alternative WYCO-B in Colorado is the Old Victory Highway. Although no segments have been formally documented as intersecting this alternative route in Colorado, the Old Victory Highway crosses Alternative WYCO-B at Link C92. Known segments of the road are located outside of the Project APE.

In addition to the baseline inventory data, the Deerlodge Road also is a key resource identified along the alternative route. This road, constructed in 1966, is the only entrance to the eastern portion of the Dinosaur National Monument, Colorado (NPS 2013). It provides access to public facilities (e.g., campground and ranger station), BLM lands, and private lands. The road is approximately 1.0 mile to the northwest of Link C173 outside of, but adjacent to, the boundary of the Project APE. Although the Deerlodge Road is located beyond the Project APE, it could be subject to indirect effects. Issues related to potentially significant effects on the Deerlodge Road were raised by the NPS during Administrative Review of the Draft EIS. There are no records of previously recorded portions of the Deerlodge Road on file at the Colorado SHPO; therefore, it is not included in the Class I counts for Colorado.

If this alternative route is selected, a complete Class III intensive pedestrian inventory would be conducted along the entire alternative route as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP, and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity also will be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions; and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Alternative WYCO-C

Affected Environment (Wyoming)

Class I Sites

A total of 1,744 sites were identified in the Class I inventory conducted for Alternative WYCO-C in Wyoming, including 1,452 prehistoric sites, 184 historic sites, and 108 multi-component sites (Table 3-264). Of the sites, 88 percent (n=1,538) are in the low cultural resource intensity zone; 7 percent (n=122) are in the moderate cultural resource intensity zone; and 5 percent (n=84) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 30 prehistoric lithic and artifact scatters, 24 prehistoric campsites, 2 prehistoric lithic procurement areas, 1 prehistoric thermal feature (concentration of fire-cracked rock), 3 historic artifact scatters, 2 historic cairns, 1 historic campsite, 5 prehistoric campsites and historic artifact scatters/livestock enclosure, 3 prehistoric lithic scatters and historic artifact scatters, and 11 historic linear sites (i.e., pipeline, power lines, railroad, and roads/trails). The Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road are in the Project APE along this alternative route. The Lincoln Highway and the Rawlins to Baggs Stage Road are crossed by Link W30.

Cultural-Visual Resources

A total of 10 historic properties associated with Alternative WYCO-C in Wyoming are identified as visually sensitive. These sites include 2 NRHP-listed properties (Red Rock Site [48SW771] and Fort Fred Steele Historic Site [48CR480]), 1 bridge, 1 shearing station (Walcott), 1 homestead with a prehistoric component, 1 power line (Cheyenne to Miracle Mile Transmission Line), and 4 historic road/trail corridors. The historic roads/trails are the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway.

Historic Properties Listed in the National Register of Historic Places

The Class I and the NRHP records search identified the historic Red Rock Site (48SW771) and Fort Fred Steele Historic Site (48CR480) along Alternative WYCO-C in Wyoming. Red Rock Site (48SW771) is one of the many historic landmarks alongside the Overland Historic Trail. It is located in the Washakie Basin, approximately 50 miles southwest of Rawlins, Wyoming. The sandstone rock monolith, which is approximately 120 feet in circumference and rises 20 feet, contains the engraved names of many mountain men, fur trappers, explorers, and emigrants who crossed the territory during the 1860s (Junge 1975). The site was listed in the NRHP on November 16, 1978. Fort Fred Steele was listed on the NRHP in April 16, 1969 and designated a Wyoming State Historic Site in 2010. These historic properties are in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

Traces of the Cherokee and Overland historic trails have been documented along Alternative WYCO-C in Wyoming. One segment of the Cherokee Historic Trail is located in a high cultural resource intensity zone and crosses the alternative route (Link W409) to the west of Cherokee Creek East Fork, Sweetwater County, Wyoming. This segment of the trail was evaluated as contributing to the overall NRHP eligibility of the Cherokee Historic Trail (Johnson 2011). Link W27 crosses an east-northeast trending segment of the Overland Historic Trail running alongside the Eureka Headquarters Road, just north and northeast of Barrel Springs Draw, in Sweetwater County, Wyoming. This segment of the trail was evaluated as contributing to the overall NRHP eligibility of the Overland Historic Trail (Johnson 2011). Additional segments of the Cherokee and Overland historic trails have also been identified in both low and moderate cultural resource intensity zones, to the east and west of the Project APE. The NPS is conducting a feasibility study to evaluate the addition of the Cherokee Historic Trail and the Overland Historic Trail to the California NHT (NPS 2012). These previously recorded segments of the Cherokee and Overland historic trails are included in the Class I data, but are reiterated due to their historical significance.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Wyoming segment of Alternative WYCO-C.

Environmental Consequences (Wyoming)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-C has the highest number of miles of high cultural resource intensity. In Wyoming, there are 56.2 miles of high, 7.9 miles of moderate, and 80.6 miles of low cultural resource intensity (Table 3-264). Most of the sites located in the Project APE along this alternative route occur in Wyoming. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 56.2 miles of high cultural resource intensity in Wyoming are the result of 84 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e.,

the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources identified along Alternative WYCO-C in Wyoming include two NRHP-listed properties (Red Rock Site [48SW77] and Fort Fred Steele Historic Site [48CR480]), the Cherokee and Overland historic trail, the Rawlins to Baggs Stage Road, and the Lincoln Highway. These resources are in the Project APE, except for the NRHP-listed properties. Although the NRHP-listed properties are located beyond the Project APE, they could be subject to indirect effects.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B in Wyoming would be employed.

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative WYCO-C in Colorado are similar to those identified for Alternative WYCO-B. A total of 199 sites potentially could be affected if Alternative WYCO-C is selected, compared to 208 sites for Alternative WYCO-B (Table 3-264). The differences in the number and types of sites occur along Link W302. Class I sites identified along Alternative WYCO-B, but not along Alternative WYCO-C, include 7 prehistoric campsites and 2 prehistoric habitations (unknown structure and wickiup). Alternative WYCO-C in Colorado has the same number of sites included in the high and moderate cultural resource intensity zones as Alternative WYCO-B. An unrecorded segment of the Old Victory Highway crosses Alternative WYCO-C at Link C92.

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative WYCO-C are the same as the sites identified for Alternative WYCO-B.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative WYCO-C.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative WYCO-C.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-C.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-C has the highest miles of high cultural resource intensity. Because Alternative WYCO-C in Colorado follows the same route as Alternative WYCO-B, these alternative routes have the same levels of cultural resource intensity (Table 3-264). The key resources identified along Alternative WYCO-C in Colorado are the same as those identified for Alternative WYCO-B. Without mitigation, the type of potential impacts

would be the same as those found under Alternative WYCO-B in Colorado. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B in Colorado would be employed.

Alternative WYCO-D

Affected Environment (Wyoming)

Class I Sites

A total of 1,460 sites were identified in the Class I inventory conducted for Alternative WYCO-D in Wyoming, including 1,150 prehistoric sites, 206 historic sites, and 104 multi-component sites (Table 3-264). Of the sites, percent (n=1,275) are in the low cultural resource intensity zone; 8 percent (n=111) are in the moderate cultural resource intensity zone; and 5 percent (n=74) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 32 prehistoric campsites, 7 prehistoric lithic and artifact scatters, 4 prehistoric thermal features (hearths and fire-cracked rock), 2 prehistoric habitation structures (stone circle and wickiup), 1 prehistoric lithic procurement area, 2 mine complexes, 1 historic artifact scatter, 5 prehistoric campsites and historic artifact scatters, 1 prehistoric campsite and mining claim, and 19 segments of 11 historic linear sites (i.e., pipeline, power line, railroad, and roads/trails). The Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway are in the Project APE along this alternative route. The Rawlins to Baggs Stage Road is crossed by Links W30, W111, and W299, and the Lincoln Highway is crossed by Links W30 and W22.

Cultural-Visual Resources

A total of 18 historic properties associated with Alternative WYCO-D in Wyoming are identified as visually sensitive. These sites include 2 NRHP-listed properties (Hanna Community Hall [48CR3764] and Fort Fred Steele Historic Site [48CR480]), 2 canals, 2 bridges, 2 mine complexes, 1 mine camp, 1 tender station, Hanna Town site, 1 shearing station (Walcott), 1 power line (Cheyenne to Miracle Mile Transmission Line), and 4 historic road/trail corridors. The historic roads/trails are the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway. One segment of the Overland Historic Trail has been documented as a historic feature in the boundaries of a Late Prehistoric campsite (48CR4200).

Historic Properties Listed in the National Register of Historic Places

The Class I and the NRHP records search identified the historic Hanna Community Hall (48CR3764) and Fort Fred Steele Historic Site (48CR480) along Alternative WYCO-D in Wyoming. Located in the town of Hanna in Carbon County, Wyoming, Hanna Community Hall is a single-story, clapboard structure that continues to serve the community as an important cultural, political, religious, and social center (Kitching and Hewitt 1980). Constructed in 1895, the property was originally named Linden Hall and served as a saloon and later as a pool hall during the town's energy boom and prohibition years. In the 1920s, the building became the social and cultural center for the community of Hanna. Fort Fred Steele was listed in the NRHP in April 16, 1969, and designated a Wyoming State Historic Site in 2010. These historic properties are in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

Traces of the Cherokee and Overland historic trails have been documented along Alternative WYCO-D in Wyoming. One segment of the Cherokee Historic Trail is located in a high cultural resource intensity zone and crosses the alternative route (Link W111) to the northwest of Peach Orchard Flat and south of Blue Gap, Carbon County, Wyoming. This segment of the trail was evaluated as noncontributing to the overall NRHP eligibility of the Cherokee Historic Trail (Johnson 2011). A contributing segment of the

Cherokee Historic Trail lies just 500 feet to the west of the reference centerline. Link W110 crosses a northeast trending segment of the Overland Historic Trail located to the west of Antelope Creek and east of the interpretative sign along Wyoming Highway 789 in Carbon County, Wyoming. This segment of the trail was evaluated as contributing to the overall NRHP eligibility of the Overland Historic Trail (Johnson 2008).

Additional segments of the Cherokee and Overland historic trails have also been identified in both low and moderate cultural resource intensity zones to the east and west of the Project APE. The NPS is conducting a feasibility study to evaluate the addition of the Cherokee Historic Trail and the Overland Historic Trail to the California NHT (NPS 2012). These previously recorded segments of the Cherokee and Overland historic trails are included in the Class I data but are reiterated due to their historical significance.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-D.

Environmental Consequences (Wyoming)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-D has the fewest miles of high cultural resource intensity. In Wyoming, there are 15 miles of high, 19.3 miles of moderate, and 100.6 miles of low cultural resource intensity (Table 3-264). Most of the sites located in the Project APE along this alternative route occur in Wyoming. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 15 miles of high cultural resource intensity in Wyoming are the result of 74 known in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative WYCO-D in Wyoming include two NRHP-listed properties (Hanna Community Hall [48CR3764] and Fort Fred Steele Historic Site [48CR480]), the Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road. These resources are in the Project APE, except for the NRHP-listed properties. Although the NRHP-listed properties are located beyond the Project APE, they could be subject to indirect effects.

In addition to the baseline inventory data, the ghost town of Carbon, Wyoming, is also a key resource identified near the alternative route. The historic town of Carbon is approximately 10 miles east-southeast of Hanna in Carbon County, Wyoming, south of Link W22, outside of the study corridor.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B in Wyoming would be employed.

Affected Environment (Colorado)

Class I Sites

A total of 327 sites were identified in the Class I inventory conducted for Alternative WYCO-D in Colorado, including 258 prehistoric sites, 53 historic sites, and 16 multi-component sites (Table 3-264).

Of the sites, 88 percent (n=288) are in the low cultural resource intensity zone; 8 percent (n=26) are in the moderate cultural resource intensity zone; and 4 percent (n=13) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 6 prehistoric campsites, 2 prehistoric lithic scatters, 1 prehistoric hearth, 1 historic dugout and log structure, 2 roads (Colorado State Highway 13 and County Road 53), and 1 canal. Although no segments have been formally documented as intersecting this alternative route, the Old Victory Highway crosses Alternative WYCO-D at Link C100. Known segments of the historic road are outside of the Project APE.

Cultural-Visual Resources

A total of 9 historic properties associated with Alternative WYCO-D in Colorado are identified as visually sensitive. These include 1 homestead, the Juniper Hot Springs Resort Pool, 1 school/community hall building (presently used as a barn), the Maybell Ditch, Colorado Stage Highway 13, Baggs to Craig Road, Thornburgh Wagon Road, Thornburgh Wagon Trail, and the Old Victory Highway.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative WYCO-D.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative WYCO-D.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-D.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-D has the fewest miles of high cultural resource intensity. In Colorado, there are 2.5 miles of high, 4.8 miles of moderate, and 107.2 miles of low cultural resource intensity (Table 3-264). Most of the sites located in the Project APE along this alternative route occur in Wyoming and not in Colorado. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 2.5 miles of high cultural resource intensity in Colorado are the result of 13 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

The key resources identified along Alternative WYCO-D in Colorado are the same as those identified for Alternative WYCO-B.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B in Colorado would be employed.

Alternative WYCO-F

Affected Environment (Wyoming)

Class I Sites

A total of 2,345 sites were identified in the Class I inventory conducted for Alternative WYCO-F in Wyoming, including 2,027 prehistoric sites, 174 historic sites, and 1144 multi-component sites (Table 3-264). Of the sites, 89 percent (n=2,098) are in the low cultural resource intensity zone; 6 percent (n=139) are in the moderate cultural resource intensity zone; and 5 percent (n=108) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 42 prehistoric campsites, 33 prehistoric lithic and artifact scatters, 2 prehistoric lithic procurement areas, 1 prehistoric lithic landscape, 1 prehistoric thermal feature (concentration of fire-cracked rock), 1 prehistoric habitation (unknown structural), 3 historic artifact scatters, 2 historic cairns, 4 prehistoric campsites and historic artifact scatters, 2 prehistoric campsites and tent foundation/livestock enclosure, 1 prehistoric lithic scatter and historic artifact scatter, and 16 segments of 12 historic linear sites (i.e., power line, pipeline, railroad, and road/trail). The Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway are in the Project APE along this alternative route. The Rawlins to Baggs Stage Road and the Lincoln Highway are crossed by Link W30.

Cultural-Visual Resources

A total of 10 historic properties associated with Alternative WYCO-F in Wyoming are identified as visually sensitive. These include Fort Fred Steele Historic Site (48CR480), 2 bridges, 1 shearing station (Walcott), 1 homestead with a prehistoric component, 1 power line (Cheyenne to Miracle Mile Transmission Line), and 4 road/trail corridors. The historic roads/trails are the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway.

Historic Properties Listed in the National Register of Historic Places

The Class I and NRHP records search identified Fort Fred Steele Historic Site (48CR480) along Alternative WYCO-F in Wyoming. Fort Fred Steele was listed in the NRHP in April 16, 1969, and designated a Wyoming State Historic Site in 2010. This historic property is in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

Traces of the Cherokee and Overland historic trails have been documented along Alternative WYCO-F in Wyoming. With regard to the Cherokee Historic Trail, the alternative route intersects the historic trail in numerous locations. Link W302 crosses one segment of the trail that follows the valley of Colloid Draw, an east trending ephemeral drainage, located to the northeast of the Cherokee Basin, in Sweetwater County, Wyoming. This segment of the trail was evaluated as noncontributing to the overall NRHP eligibility of the Cherokee Historic Trail (Johnson 2011). In addition, Link W124 crosses one segment of the Cherokee Historic Trail located along the east edge of Sand Creek, a broad ephemeral tributary of the Little Snake River, in Sweetwater County, Wyoming. This segment of the trail was evaluated as contributing to the overall NRHP eligibility of the Cherokee Historic Trail (Johnson 2011 [Table1]). Link 120 crosses the historic corridor between Blue Gap Draw and Robbers Gulch, west of Wyoming Highway 789 in Carbon County, Wyoming. This segment of the trail was evaluated as noncontributing to the overall NRHP eligibility of the Cherokee Historic Trail (Johnson 2008).

Two consecutive segments of the Overland Historic Trail are located in a high cultural resource intensity zone, and cross the alternative route (Link W108) at Wamsutter-Dad Road, approximately 3.0 miles north of the confluence of Coal Gulch and Little Coal Gulch, Carbon County, Wyoming. These segments of the

trail were evaluated as contributing (west of the alternative route centerline) and noncontributing (east of the alternative route centerline) to the overall NRHP eligibility of the Overland Historic Trail (Johnson et al. 2005 [Table 1]).

Additional segments of the Cherokee and Overland historic trails have also been identified in both low and moderate cultural resource intensity zones to the east and west of the Project APE. The NPS is conducting a feasibility study to evaluate the addition of the Cherokee Historic Trail and the Overland Historic Trail to the California NHT (NPS 2012). These previously recorded segments of the Cherokee and Overland historic trails are included in the Class I data but are reiterated due to their historical significance.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Wyoming segment of Alternative WYCO-F.

Environmental Consequences (Wyoming)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-F has the third highest miles of high cultural resource intensity. In Wyoming, there are 30 miles of high, 16.4 miles of moderate, and 107.1 miles of low cultural resource intensity (Table 3-264). Most of the sites located in the Project APE along this alternative route occur in Wyoming. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 30 miles of high cultural resource intensity in Wyoming are the result of 108 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative WYCO-F in Wyoming include Fort Fred Steele Historic Site (48CR480), the Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road. These resources are in the Project APE, except for the NRHP-listed property. Although Fort Fred Steele Historic Site (48CR480) is located beyond the Project APE, it could be subject to indirect effects.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B in Wyoming would be employed.

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative WYCO-F in Colorado are the same as those identified for Alternative WYCO-B, as both alternative routes follow the same path through the state (Table 3-264).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative WYCO-F are the same as the sites identified for Alternative WYCO-B.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative WYCO-F.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative WYCO-F.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-F.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-F has the third highest miles of high cultural resource intensity. Because Alternative WYCO-F in Colorado follows the same route as Alternative WYCO-B, these alternative routes have the same levels of cultural resource intensity (Table 3-264). The key resources identified along Alternative WYCO-F in Colorado are the same as those identified for Alternative WYCO-B. Without mitigation, the type of potential impacts would be the same as those described for Alternative WYCO-B in Colorado. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative WYCO-B in Colorado would be employed.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

The baseline resource inventory and initial impacts for the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes are presented in Table 3-265.

TABLE 3-265
ALTERNATIVE ROUTE COMPARISON FOR CULTURAL RESOURCES INVENTORY DATA AND INITIAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Cultural Resource Type (Number)					Initial Impacts (miles)		
		Class I Site	Class I Cultural-Visual Sites[1]	National Register of Historic Places Listed Property	National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
COUT BAX-B	279.9	1,598	161	28	1	4	151.6	14.1	114.2
Colorado	*87.0*	*865*	*55*	*2*	*1*	*0*	*56.9*	*10.8*	*19.3*
Utah	*192.9*	*733*	*106*	*26*	*1*	*4*	*94.7*	*3.3*	*94.9*
COUT BAX-C	290.4	1,610	166	28	1	1	173.1	15.6	101.7
Colorado	*87.0*	*865*	*171*	*2*	*1*	*0*	*56.9*	*10.8*	*19.3*
Utah	203.4	*745*	*116*	*26*	*1*	*1*	*116.2*	*4.8*	*82.4*

TABLE 3-265
ALTERNATIVE ROUTE COMPARISON FOR CULTURAL RESOURCES INVENTORY DATA AND INITIAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO BAXTER PASS TO CLOVER (COUT BAX) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Cultural Resource Type (Number)					Initial Impacts (miles)		
		Class I Site	Class I Cultural-Visual Sites[1]	National Register of Historic Places Listed Property	National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
COUT BAX-E	292.2	1,856	144	8	1	1	188.4	15.9	87.9
Colorado	*87.0*	*865*	*55*	*2*	*1*	*0*	*56.9*	*10.8*	*19.3*
Utah	*205.2*	*991*	*89*	*6*	*1*	*1*	*131.5*	*5.1*	*68.6*

NOTE:
[1]The number of Class I Sites for the COUT BAX segment in Colorado and Utah include National Register of Historic Places listed properties (in that column) that have Smithsonian numbers
[2]The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the study corridor
[3] Includes the Old Spanish National Historic Trail, which is located in the vicinity of the study corridor in Colorado

Alternative COUT BAX-B

Affected Environment (Colorado)

Class I Sites

A total of 865 sites were identified in the Class I inventory conducted for Alternative COUT BAX-B in Colorado, including 497 prehistoric sites, 307 historic sites, and 61 multi-component sites (Table 3-265). Of the site, approximately 84 percent (n=723) are in the low cultural resource intensity zone; 9 percent (n=79) are in the moderate cultural resource intensity zone; and 7 percent (n=63) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 8 prehistoric lithic and artifact scatters, 7 prehistoric rock art sites (e.g., Fremont and Ute elements), 2 prehistoric rock shelters, 3 prehistoric campsites and hunting blind, 7 historic artifact scatters, 8 historic campsites, 3 homesteads, the Carbonera Town site, 1 fence segment, 1 livestock enclosure, 1 boiler, 2 prehistoric campsites and historic artifact scatters, 1 prehistoric lithic scatter and historic artifact scatter, and 1 prehistoric habitation with a historic component. The remaining sites include 17 segments of 9 historic linear sites (i.e., road/trail, railroad, canal, and telephone line). One of the historic linear sites, the D&RGW Railway, was found in association with a railroad station (Excelsior Station). The D&RGW Railway, the Uintah Railway, and the Dragon to Rangely Stage/Freight Road are in the Project APE along this alternative route. The D&RGW Railway is crossed by Link C270; the Uintah Railway is crossed by Links C196 and C197; and the Dragon to Rangely Stage/Freight Road is crossed by Link C195.

Cultural-Visual Resources

A total of 55 historic properties associated with Alternative COUT BAX-B in Colorado are identified as visually sensitive. Sites include 2 NRHP-listed properties (Carrot Men Pictograph Site [5RB106] and Canyon Pintado National Historic District [5RB984]), 9 prehistoric rock art sites (e.g., Fremont and

unknown styles), 4 prehistoric rock shelters/rock art (e.g., Fremont and unknown styles), 1 prehistoric rock shelter, 1 campsite with Fremont rock art, 2 Fremont storage structures, 6 historic rock art sites (e.g., historic Ute, Hispanic, and European-American elements), 3 reservoirs, 5 habitations (homesteads and tent platform), 1 livestock enclosure, 1 water tower/wye, 1 dam, 1 bridge, the Gilbert Webb ditch, the Uintah Railway (including the railroad town of Atchee [5GF642_2]), the D&RGW Railway/Excelsior Station, and 8 historic road/trail corridors. Some of the roads are the Dragon to Rangely Stage/Freight Road, the Midland Trail automobile Highway, the U.S. Highway 6, and the Dragon-Douglas Trail. Multi-component sites include 6 prehistoric rock art sites and 1 prehistoric rock shelter/rock art site with historic elements (e.g., artifact scatters, hearth features, livestock enclosure, and inscriptions).

Although no segments of the Old Spanish NHT have been formally documented along this alternative route in Colorado, a known segment of the Old Spanish NHT (North Branch) is located in proximity to Alternative COUT BAX-B.

Historic Properties Listed in the National Register of Historic Places

The Class I and NRHP records search identified two NRHP-listed properties (Canyon Pintado National Historic District [5RB984] and Carrot Men Pictograph Site [5RB106]) along Alternative COUT BAX-B in Colorado. Both NRHP-listed properties are located south of Rangely in Rio Blanco County, Colorado. The Canyon Pintado National Historic District (5RB984) was listed in the NRHP in October 6, 1975 and was established to protect the myriad cultural resources throughout the canyon. Cultural resources include hundreds of archaeological sites such as open lithic scatters, rock shelters, granaries, and rock art sites from the Fremont and Ute occupations of the area (Costales and Knight 1973a). Carrot Men Pictograph Site (5RB106) was listed in the NRHP on August 22, 1975; it is a fine example of a Fremont open campsite and rock art (Costales and Knight 1973b). These historic properties are in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

Although no segments have been formally documented along Alternative COUT BAX-B in Colorado, the Old Spanish NHT (North Branch) is located in proximity to the alternative route. The trail route is located south of the alternative route (Link C270) in the vicinity of Rabbit Valley and northwest of the northern margin of the Colorado River corridor in Mesa County, Colorado.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components located along the Colorado segment of Alternative COUT BAX-B.

Environmental Consequences (Colorado)

In Colorado, there are 19.3 miles of high, 10.8 miles of moderate, and 56.9 miles of low cultural resource intensity (Table 3-265). Most of the sites located in the Project APE along this alternative route occur in Utah and not in Colorado. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 19.3 miles of high cultural resource intensity in Colorado are the result of 63 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site

integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources identified along Alternative COUT BAX-B in Colorado include two NRHP-listed properties (Carrot Men Pictograph Site [5RB106], Canyon Pintado National Historic District [5RB984]), the U.S. Highway 6, the Dragon to Rangely Stage/Freight Road, the Dragon-Douglas Trail, the Uintah Railway, and the D&RGW Railway. Except for the NRHP-listed properties and the U.S. Highway 6, all of these resources are in the Project APE. The Old Spanish NHT (North Branch) also is a key resource identified in proximity to the alternative route (Link C270). Although the two NRHP-listed properties, the U.S. Highway 6, and the Old Spanish NHT are located beyond the Project APE, they could be subject to indirect effects.

If this alternative route is selected, a complete Class III intensive pedestrian inventory would be conducted along the entire alternative route as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP, and sites in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity will also be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions; and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Affected Environment (Utah)

Class I Sites

A total of 733 sites were identified in the Class I inventory conducted for Alternative COUT BAX-B in Utah, including 360 prehistoric sites, 325 historic sites, and 48 multi-component sites (Table 3-265). Of the sites, approximately 90 percent (n=657) are in the low cultural resource intensity zone; 5 percent (n=37) are in the moderate cultural resource intensity zone; and 5 percent (n=39) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 9 prehistoric lithic and artifact scatters, 1 prehistoric wickiup, 1 historic campsite, 1 mine camp, 1 railroad camp (possibly associated with the D&RGW Railway), 1 water control system, 1 homestead, 1 prehistoric rock shelter and historic inscription, 1 prehistoric campsite and homestead, and 1 rock art site with both historic and prehistoric elements. The remaining sites include 21 segments of 17 historic linear sites (i.e., power line, telephone line, canal, railroad, and road). The D&RGW Railway, the Buckhorn Flat Railroad, and the U.S. Highway 6 are located in the Project APE along this alternative route. The D&RGW Railway is crossed by Links U486, U487, and U490; the Buckhorn Flat Railroad is crossed by Links U729 and U730; and the U.S. Highway 6 is crossed by Link U487.

Based on information obtained from the BLM regarding NHTs, several segments of the Old Spanish NHT have been identified and formally documented in the study corridor. Although the Old Spanish NHT has been listed in the NRHP and records of previously recorded segments of the trail are on file at the SHPO, the SHPO database has not been updated to reflect results of the latest research on the trail (refer to Horn et al. 2011). Thus, the Old Spanish NHT is not included in the Class I counts and is identified separately.

Cultural-Visual Resources

A total of 106 historic properties associated with Alternative COUT BAX-B in Utah are identified as visually sensitive. These sites include 25 NRHP-listed properties, 10 prehistoric rock art sites, 5 prehistoric habitations (i.e., rock shelters and room block structures with rock art), 9 homesteads, 5 military test facilities, 3 oil drilling camps, 1 Mormon pioneer monument, 2 bridges, 1 feedlot and tramway, 1 kiln, 1 historic art site, 1 prospect, 3 railroad-related sites (i.e., camp, yard, and a station of the D&RGW Railway), 1 town site, 1 meteorological station, 1 telephone line, and 1 watering system/military test facility. Sites with both prehistoric and historic components include 3 rock art sites with both prehistoric and historic elements, 1 prehistoric rock shelter and historic inscription, 1 military test facility with a prehistoric component, and 1 prehistoric campsite and homestead. The remaining sites include 13 canals, 7 railroads, and 6 roads. Some of the historic linear sites are the Moroni and Mount Pleasant Canal, the Huntington Canal, the D&RGW Railway, the D&RGW Railroad, the Uintah Railway, the Buckhorn Flat Railroad, the Ballard and Thompson Railroad, the U.S. Highway 6, and the Moab to Thompson State Highway/U.S. Highway 450. The Old Spanish NHT also is a visually sensitive cultural resource along this alternative route.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT BAX-B in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

The NRHP records search identified 26 NRHP-listed properties along Alternative COUT BAX-B in Utah. Twenty-four of these historic properties, as well as the estimated times they were constructed or completed, include Cyrus Wheelock House/Madsen House (1860), William Stuart Seeley House (Mount Pleasant Pioneer Historical Association Relic Home) (1861), Alma Staker House (1870), John H. Seeley House (1870), Watkins-Tholman-Larsen Farmstead (1870), Andrew Barentsen House (1874), Morten Rasmussen House (1875), Ole Arlisen House (1875), Mount Pleasant Commercial Historic District (1875), Hans Peter Olsen House (1877), James B. Staker House (1880), Denver and Rio Grande Lime Kiln (Buckhorn Flat Lime Kiln) (1881), Frederick C. Jensen House (1891), Juab County Jail (1892), N. S. Nielson House (1892), Edwin Robert Booth House (1893), Oscar M. Booth House (1893), the Wasatch Academy (1893), George Carter Whitmore Mansion/Colonial Villa (1898), Mount Pleasant Carnegie Library (1917), Fountain Green Hydroelectric Plant Historic District (1922), Nephi Main Post Office (1931), Mount Pleasant High School Mechanical Arts Building (1935), and Mount Pleasant National Guard Armory (1936). All of these historic properties are in the low cultural resource intensity zone beyond the Project APE.

The two remaining NRHP-listed properties located along this alternative route are Buckhorn Wash Rock Art Sites (42EM1122) and Nephi Mounds (42JB2), which contained significant archaeological resources. The Buckhorn Wash Rock Art Sites (42EM1122) are located in Buckhorn Draw in the northern part of the San Rafael Swell in Emery County, Utah. Sites consist of several panels of petroglyphs and pictographs that display multiple, highly elaborate, and in some instances, superimposed elements representing discrete styles (Barrier Canyon, San Rafael Fremont, and Basketmaker). This cultural landmark was listed in the NRHP on August 1, 1980. The Nephi Mounds site (42JB2), located northwest of Nephi in Juab Valley, was a fine example of a Fremont agricultural village. The site contained several habitation and storage structures as well as thermal features, ceramics, and lithic artifacts (Sammons 1979; Slaughter 1999). The site revealed reliance on both upland fauna and horticultural resources. This site was listed in the NRHP on September 9, 1975. The site has been destroyed by decades of plowing. The Buckhorn Wash Rock Art Sites (42EM1122) and Nephi Mounds (42JB2) are located in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

The Old Spanish NHT is located in all of the cultural resource intensity zones along Alternative COUT BAX-B in Utah. Segments of the Northern Route have been identified along Links U478, U728, U729, U730, U731, and U732 (northern portion of the San Rafael Swell); and segments of the Northern Branch have been recorded along Links U486, U487, and U490 (south of the Book Cliffs and alongside the state highway corridor). This alternative route crosses contributing segments of the Old Spanish NHT at Links U728, U729, and U730. Noncontributing segments of the trail are crossed at Links U487, U730, and U732.

Areas of Critical Environmental Concern with Cultural Components

The record search identified four cultural resources designated as ACECs along Alternative COUT BAX-B in Utah: Big Hole, Cottonwood Canyon, Smith Cabin, and Tidwell Draw. Two of the four cultural areas (Big Hole and Cottonwood Canyon) are located in the designated Rock Art ACEC and have also been identified as parts of the San Rafael National Heritage Area. The remaining resources are in the Heritage ACEC (Smith Cabin) and the Uranium Mining Districts ACEC (Tidwell Draw).

With regard to the Rock Art ACEC, Big Hole and Cottonwood Canyon consist of two rock art sites located in the eastern edge of the San Rafael Swell between the Price and San Rafael rivers in Emery County, Utah. They contain a cluster of highly elaborate petroglyph panels, which are fine examples of prehistoric rock art on the Colorado Plateau. Portions of Big Hole Rock Art ACEC (western half) are in the high cultural resource intensity zone along this alternative route and are traversed by Link U730. In addition, Cottonwood Canyon ACEC is located west of Link U730, in the low cultural resource intensity zone beyond the Project APE.

One of the sites maintained by the Heritage Sites ACEC is Smith Cabin, a fine example of attempted homesteading on public lands in the San Rafael region. This cultural resource is situated immediately west of Tidwell Draw and west of the Gunnison Valley in Emery County, Utah. The Smith Cabin ACEC is located west of Link U730 in the low cultural resource intensity zone beyond the Project APE. Tidwell Draw is a mining-related site associated with uranium exploration during the Cold War period near the margins of the Green and San Rafael river basins in the San Rafael region. The extreme northeastern corner of Tidwell Draw ACEC is situated west of Link U730 in the low cultural resource intensity zone beyond the Project APE.

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-B has the highest miles of high cultural resource intensity. In Utah, there are 94.9 miles of high, 3.3 miles of moderate, and 94.7 miles of low cultural resource intensity (Table 3-265). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 94.9 miles of high cultural resource intensity in Utah are the result of 39 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads, and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative COUT BAX-B in Utah include 26 NRHP-listed properties, the Old Spanish NHT (Northern Route and Northern Branch), the U.S. Highway 6, the D&RGW Railway, the Buckhorn Flat Railroad, the Ballard and Thompson Railroad, and 4 areas designated as ACECs (Big Hole, Cottonwood Canyon, Smith Cabin, and Tidwell Draw). Of these resources, the NRHP-listed properties and three ACECs (Cottonwood Canyon, Smith Cabin, and Tidwell Draw) are outside of the Project APE. Although these resources are located beyond the Project APE, they could be subject to indirect effects.

The Little Denmark Heritage District is a key area identified along the alternative route. Of the cultural resources identified in the boundaries of this heritage district, the majority are prehistoric lithic and artifact scatters, prehistoric and historic campsites and habitations, historic artifact scatters, waterworks, and transportation and utility corridors. Sites have been identified in all of the cultural resource intensity zones along this alternative route. All of the NRHP-listed properties identified in the portion of the Little Denmark Heritage District, crossed by the Project, are concentrated in the towns of Nephi, Fountain Green, Mount Pleasant, and Huntington, Utah, outside of the Project APE. Although these resources are located beyond the Project APE, they could be subject to indirect effects. There is a high potential for unrecorded archaeological and historic sites to occur in this area.

If this alternative route is selected, a complete Class III intensive pedestrian inventory would be conducted along the entire alternative route as part of the Class III study. All sites located in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity will also be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Alternative COUT BAX-C

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative COUT BAX-C in Colorado are the same as those identified for Alternative COUT BAX-B as both alternative routes follow the same path through the state (Table 3-265).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT BAX-C are the same as the sites identified for Alternative COUT BAX-B.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP, and located along Alternative COUT BAX-C in Colorado, are the same as those identified for Alternative COUT BAX-B.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT BAX-C. Nonetheless, although no segments have been formally documented along Alternative COUT BAX-C in Colorado, the Old Spanish NHT (North Branch) is located in proximity to the alternative route (Link C270).

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT BAX-C.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-C has the second highest miles of high cultural resource intensity. Because Alternative COUT BAX-C in Colorado follows the same route as Alternative COUT BAX-B, these alternative routes have the same levels of cultural resource intensity (Table 3-265). Key resources identified along Alternative COUT BAX-C in Colorado are the same as those identified for Alternative COUT BAX-B. Without mitigation, the type of potential impacts would be the same as those described for Alternative COUT BAX-B in Colorado. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT BAX-B in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 745 sites were identified in the Class I inventory conducted for Alternative COUT BAX-C in Utah, including 356 prehistoric sites, 352 historic sites, and 48 multi-component sites (Table 3-265). Of the sites, 90 percent (n=676) are in the low cultural resource intensity zone; 5 percent (n=36) are in the moderate cultural resource intensity zone; 6 percent (n=44) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 8 prehistoric lithic and artifact scatters, 1 prehistoric wickiup, 1 historic campsite, 1 historic artifact scatter, 1 homestead, 1 mine camp, 1 railroad camp (possibly associated with the D&RGW Railway), 2 water control systems, 1 prehistoric rock shelter and historic inscription, 1 prehistoric campsite and homestead, and 1 rock art site with both prehistoric and historic elements. The remaining sites include 25 segments of 17 historic linear features (i.e., power line, canal, railroad, telegraph line, and road). The D&RGW Railway, the Buckhorn Flat Railroad, and the U.S. Highway 6 are in the Project APE along this alternative route. The D&RGW Railway is crossed by Links U486, U487, and U490; the Buckhorn Flat Railroad is crossed by Links U730 and U734; and the U.S. Highway 6 is crossed by Links U487, U488, and U734.

Based on information obtained from the BLM regarding NHTs, several segments of the Old Spanish NHT have been identified and formally documented in the study corridor. Although the Old Spanish NHT has been listed in the NRHP and records of previously recorded segments of the trail are on file at the SHPO, the SHPO database has not been updated to reflect results of the latest research on the trail (refer to Horn et al. 2011). The Old Spanish NHT is thus not included in the Class I counts, and is identified separately.

Cultural-Visual Resources

A total of 116 historic properties associated with Alternative COUT BAX-C in Utah are identified as visually sensitive. These sites include 25 NRHP-listed properties, 15 prehistoric rock art sites, 5 prehistoric habitations (room block and rock shelters with rock art), 11 historic habitations (e.g.,

homesteads and room structures), 3 oil drilling camps, 5 military test facilities, 2 dams, 1 feedlot and tramway, 2 bridges, 1 kiln, 1 Mormon pioneer monument, 1 historic rock art site, 1 prospect, 3 railroad-related sites (i.e., camp, yard, and a station of the D&RGW Railway), 1 town site, 1 watering system/military test facility, 1 telephone line, 5 rock art sites with both prehistoric and historic elements, 1 prehistoric campsite and homestead, 2 military testing facilities with prehistoric components, and 1 prehistoric rock shelter and historic rock art. The remaining sites include 15 canals, 6 railroads, and 5 roads. Some of the historic linear sites are the Moroni and Mount Pleasant Canal, the D&RGW Railway, the Buckhorn Flat Railroad, the Ballard and Thompson Railroad, the U.S. Highway 6, and the Moab to Thompson State Highway/U.S. Route 450. The Old Spanish NHT also is a visually sensitive cultural resource along this alternative route.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT BAX-C in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP and located along Alternative COUT BAX-C in Utah are the same as those identified for Alternative COUT BAX-B.

National Historic Trails/Potential National Historic Trails

The Old Spanish NHT is located in all of the cultural resource intensity zones along this alternative route. Segments of the Northern Route have been identified along Links U487, U488, U731, U732, and U733 (northern portion of the San Rafael Swell); and segments of the Northern Branch have been recorded along Links U486, U487, and U490 (south of the Book Cliffs and alongside the state highway corridor). This alternative route crosses noncontributing segments of the Old Spanish NHT at Links U487, U488, and U732.

Areas of Critical Environmental Concern with Cultural Components

The record search identified one cultural resource (Big Hole) designated as an ACEC along Alternative COUT BAX-C in Utah. Big Hole Rock Art ACEC (eastern half) is located south of Link U734, in the low cultural resource intensity zone beyond the Project APE.

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-C has the second highest miles of high cultural resource intensity. In Utah, there are 82.4 miles of high, 4.8 miles of moderate, and 116.2 miles of low cultural resource intensity (Table 3-265). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 82.4 miles of high cultural intensity in Utah are the result of 44 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative COUT BAX-C in Utah include the 26 NRHP-listed properties, the Old Spanish NHT (Northern Route and Northern Branch), the D&RGW Railway, the Buckhorn Flat Railroad, the Ballard and Thompson Railroad, the U.S. Highway 6, and the Big Hole Rock Art ACEC. Of these key resources, the NRHP-listed properties and Big Hole Rock Art ACEC are outside of the Project APE. Although these resources are located beyond the Project APE, they could be subject to indirect effects.

In addition to the baseline inventory data, the Book Cliffs Archaeological Sites and Rock Art are key resources identified in proximity to the alternative route. A portion of this substantial cultural resource area is located along the southern terminus of the West Tavaputs Plateau, generally east-northeast of Price in Carbon County, Utah, and north of I-70 in Grand County, Utah, east and northeast of Links U488 and U489, and outside of the Project area. The Little Denmark Heritage District also is a key area along this alternative route. Sites identified in the boundaries of this heritage district are the same as the sites identified for Alternative COUT BAX-B in Utah as they follow the same path through this portion of the study corridor. There is a high potential for unrecorded archaeological and historic sites to occur in these areas.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT BAX-B in Utah would be employed.

Alternative COUT BAX-E

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative COUT BAX-E in Colorado are the same as those identified for Alternative COUT BAX-B as both alternative routes follow the same path through the state (Table 3-265).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT BAX-E are the same as the sites identified for Alternative COUT BAX-B.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP, and located along Alternative COUT BAX-E in Colorado are the same as those identified for Alternative COUT BAX-B.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT BAX-E. Nonetheless, although no segments have been formally documented along Alternative COUT BAX-E in Colorado, the Old Spanish NHT (North Branch) is located in proximity to the alternative route (Link C270).

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT BAX-E.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-E has the fewest miles of high cultural resource intensity. Because Alternative COUT BAX-E in Colorado follows the same route as Alternative COUT BAX-B, these alternative routes have the same levels of cultural resource intensity (Table 3-265). Key resources identified along Alternative COUT BAX-E in Colorado are the same as those identified for Alternative COUT BAX-B. Without mitigation, the type of potential impacts would be the same as those described for COUT-BAX-B in Colorado. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT BAX-B in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 991 sites were identified in the Class I inventory conducted for Alternative COUT BAX-E in Utah, including 404 prehistoric sites, 510 historic sites, and 77 multi-component sites (Table 3-265). Of the sites, 88 percent (n=874) are in the low cultural resource intensity zone; 5 percent (n=49) are in the moderate cultural resource intensity zone; and 7 percent (n=68) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 15 prehistoric lithic and artifact scatters, 1 prehistoric campsite, 1 prehistoric lithic procurement area, 1 prehistoric wickiup, 5 historic habitations (e.g., homesteads and foundations), 4 historic artifact scatters, 2 dendroglyphs, 1 historic campsite, 1 mine camp, 1 railroad camp (possibly associated with the D&RGW Railway), 2 water control systems, 2 prehistoric lithic scatters and historic artifact scatters, 1 prehistoric rock shelter and historic inscriptions, 1 prehistoric campsite and homestead, 1 prehistoric lithic procurement area and historic artifact scatter, 1 prehistoric campsite and livestock enclosure/driveline, 1 prehistoric lithic scatter and homestead, and 1 rock art site with both prehistoric and historic elements. The remaining sites include 26 segments of 21 historic linear sites (i.e., power line, canal, railroad, telegraph, and road). The D&RGW Railway, the Utah and Pleasant Valley Railway, and the U.S. Highway 6 are in the Project APE along this alternative route. The D&RGW Railway is crossed by Links U486, U487, and U490; the Utah and Pleasant Valley Railway is crossed by Link U600; and the U.S. Highway 6 is crossed by Links U487 and U488.

Based on information obtained from the BLM regarding NHTs, several segments of the Old Spanish NHT have been identified and formally recorded in the study corridor. Although the Old Spanish NHT has been listed in the NRHP and records of previously recorded segments of the trail are on file at the SHPO, the SHPO database has not been updated to reflect results of the latest research on the trail (refer to Horn et al. 2011). The Old Spanish NHT is thus not included in the Class I counts but is identified separately.

Cultural-Visual Resources

A total of 89 historic properties associated with Alternative COUT BAX-E in Utah are identified as visually sensitive. These sites include 5 NRHP-listed properties, 3 prehistoric rock art sites, 4 prehistoric rock shelters/rock art sites, 11 railroad-related sites (i.e., camps, yard, and a station of the D&RGW Railway), 8 historic habitations (e.g., homesteads and log cabins), 2 historic artifact scatters, 2 town sites, 2 military test facilities, 1 bridge, 1 CCC campground, 1 feedlot and tramway, 1 hotel/bar building, 3 mining-related sites (i.e., mine camp, prospect, and isolated shaft), 3 oil drilling camps, 1 meteorological station, 2 military testing facilities with prehistoric components, 2 prehistoric lithic scatters and railroad camps, 1 prehistoric campsite and historic homestead, 1 prehistoric lithic scatter and historic homestead, 1 prehistoric lithic scatter and historic water tank, 1 rock art site with both prehistoric and historic elements, and 1 prehistoric rock shelter and historic rock art site. The remaining sites include 11 canals, 7 roads, 11 railroads, 1 telephone line, and 1 aqueduct. Some of the historic linear sites are the Mona Irrigation Ditch System, Carbon Canal, D&RGW Railway, the Uintah Railway, the Utah and Pleasant Valley Railway,

the Ballard and Thompson Railroad, the Buckhorn Flat Railroad, the National Coal Railway, and the U.S. Highway 6. The Old Spanish NHT also is a visually sensitive cultural resource along this alternative route.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT BAX-E in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

The NRHP records search identified six NRHP-listed properties along Alternative COUT BAX-E in Utah. Five of the six historic properties, as well as the estimated times they were constructed or completed, include Juab County Jail (1892), Edwin Robert Booth House (1893), Oscar M. Booth House (1893), George Carter Whitmore Mansion/Colonial Villa (1898), and Nephi Main Post Office (1931). The remaining NRHP- listed property located along this alternative route, the Nephi Mounds (42JB2), contained significant archaeological resources. The site, located northwest of Nephi in Juab Valley, was a fine example of a Fremont agricultural village. The site contained several habitation and storage structures, as well as thermal features, ceramics, and lithic artifacts (Slaughter 1999; Taylor 1948). The site revealed reliance on both upland fauna and horticultural resources. This site was listed in the NRHP in September 9, 1975. As previously mentioned, this site has been destroyed by decades of plowing. All of the NRHP-listed properties are in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

The Old Spanish NHT is located in all of the cultural resource intensity zones along this alternative route. Segments of the Northern Route have been identified along Links U486, U487, and U490 (northern portion of the San Rafael Swell); and segments of the Northern Branch have been recorded along Links U487 and U490 (south of the Book Cliffs and alongside the state highway corridor). This alternative route crosses noncontributing segments of the Old Spanish NHT at Links U487 and U488.

Areas of Critical Environmental Concern with Cultural Components

The record search identified one cultural resource (Grassy Trail) designated as an ACEC along Alternative COUT BAX-E in Utah. Grassy Trail ACEC is located in the designated Rock Art ACEC and also has been identified as part of the San Rafael National Heritage Area. Grassy Trail is a rock art site located approximately 20 miles southeast of Price, near Grassy Trail Creek in Emery County, Utah. It contains a cluster of highly elaborate petroglyph panels, fine examples of prehistoric rock art (Barrier Canyon style) on the Colorado Plateau. Grassy Trail ACEC is located west of Link U489, in the low cultural resource intensity zone beyond the Project APE.

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-E has the fewest miles of high cultural resource intensity. In Utah, there are 68.6 miles of high, 5.1 miles of moderate, and 131.5 miles of low cultural resource intensity (Table 3-265). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 68.6 miles of high cultural resource intensity in Utah are the result of 68 known sites in the Project APE along the alternative route. Potential impacts on sites in the APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource

intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative COUT BAX-E in Utah include 6 NRHP-listed properties, the Old Spanish NHT (Northern Route and Northern Branch), the U.S. Highway 6, the D&RGW Railway, the Buckhorn Flat Railroad, the National Coal Railway, the Utah and Pleasant Valley Railway, the Ballard and Thompson Railroad, and the Grassy Trail ACEC. These resources are in the Project APE, except for the NRHP-listed properties (the Buckhorn Flat Railroad, and the National Coal Railway), which are outside of the Project APE. Sites located beyond the Project APE could be subject to indirect effects.

In addition to the baseline inventory data, the Book Cliffs Archaeological Sites and Rock Art are key resources identified in proximity to the alternative route. A portion of this substantial cultural resource area is located along Links U488 and U489, and outside of the Project area. The Little Denmark Heritage District is also identified along this alternative route. Of the sites identified in the boundaries of this heritage district, the majority are prehistoric lithic and artifact scatters, prehistoric and historic campsites and habitations, historic artifact scatters, waterworks, and transportation and utility corridors. Sites have been identified in all of the cultural resource intensity zones along this alternative route. All of the NRHP-listed properties identified in the portion of the Little Denmark Heritage District, crossed by the Project, are concentrated in the towns of Nephi, Fountain Green, Fairview, Clear Creek, and Helper, Utah, outside of the Project APE. Although these historic properties are located beyond the Project APE, they could be subject to indirect effects. There is a high potential for unrecorded archaeological and historic sites to occur in these areas.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT BAX-B in Utah would be employed.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

The baseline resource inventory and initial impacts for the Colorado to Utah – U.S. Highway 40 to Central to Clover (COUT) alternative routes are presented in Table 3-266.

Alternative COUT-A

Affected Environment (Colorado)

Class I Sites

A total of 138 sites were identified in the Class I inventory conducted for Alternative COUT-A in Colorado, including 107 prehistoric sites, 21 historic sites, and 10 multi-component sites (Table 3-266). Of the sites, 94 percent (n=130) are in the low cultural resource intensity zone; 2 percent (n=3) are in the moderate cultural resource intensity zone; and 4 percent (n=5) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 2 prehistoric lithic and artifact scatters, 1 slab-lined hearth, 1 homestead, and 1 mine complex.

Cultural Visual Resources

A total of 4 historic properties associated with Alternative COUT-A in Colorado are identified as visually sensitive. These sites include 1 Fremont sandstone wall structure, 1 prehistoric rock shelter with Fremont rock art, 1 bridge, and the Old Victory Highway.

TABLE 3-266
ALTERNATIVE ROUTE COMPARISON FOR CULTURAL RESOURCES INVENTORY DATA AND INITIAL IMPACTS FOR THE COLORADO TO UTAH – U.S. HIGHWAY 40 TO CENTRAL TO CLOVER (COUT) ALTERNATIVE ROUTES

Alternative Route	Total Miles	Cultural Resource Type (Number)					Initial Impacts (miles)		
		Class I Site	Class I Cultural-Visual Sites[1]	National Register of Historic Places Listed Property	National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
COUT-A	207.9	691	59	6	0	0	195	9.7	3.2
Colorado	*24.3*	*138*	*4*	*0*	*0*	*0*	*23.1*	*0.4*	*0.8*
Utah	*183.6*	*553*	*55*	*6*	*0*	*0*	*171.9*	*9.3*	*2.4*
COUT-B	218.2	809	91	6	0	0	201.1	10.9	6.2
Colorado	*24.3*	*138*	*4*	*0*	*0*	*0*	*23.1*	*0.4*	*0.8*
Utah	*193.9*	*671*	*87*	*6*	*0*	*0*	*178*	*10.9*	*6.2*
COUT-C (Agency and Applicant Preferred Alternative)	208.2	1,146	59	6	0	1	196.5	5.6	6.1
Colorado	*25.0*	*152*	*5*	*0*	*0*	*0*	*23.4*	*0.4*	*1.2*
Utah	*183.2*	*994*	*55*	*6*	*0*	*1*	*173.1*	*5.2*	*4.9*
COUT-H	200.6	1,405	92	10	0	1	181.2	8.9	10.5
Colorado	*25.0*	*152*	*5*	*0*	*0*	*0*	*23.4*	*0.4*	*1.2*
Utah	*175.6*	*1,253*	*87*	*10*	*0*	*1*	*157.8*	*8.5*	*9.3*
COUT-I	240.2	1,513	100	24	0	1	218.1	10.3	11.8
Colorado	*25.0*	*152*	*5*	*0*	*0*	*0*	*23.4*	*0.4*	*1.2*
Utah	*215.2*	*1,360*	*95*	*24*	*0*	*1*	*194.7*	*9.9*	*10.6*

NOTE:
[1]The number of Class I Sites for the COUT segment in Utah include National Register of Historic Places listed properties (in that column) that have Smithsonian numbers
[2]The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the study corridor

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative COUT-A.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Colorado segment of Alternative COUT-A.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-A.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-A has the fewest miles of high cultural resource intensity. In Colorado, there are 0.8 miles of high, 0.4 mile of moderate, and 23.1 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah and not in Colorado. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 0.8 miles of high cultural resource intensity in Colorado are the result of 5 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

A key resource along this alternative route is the Old Victory Highway. Although this historic linear site is located beyond the Project APE, it could be subject to indirect effects.

If this alternative route is selected, a complete Class III intensive pedestrian inventory would be conducted along the entire alternative route as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity will also be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions; and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Affected Environment (Utah)

Class I

A total of 553 sites were identified in the Class I inventory conducted for Alternative COUT-A in Utah, including 239 prehistoric sites, 281 historic sites, and 33 multi-component sites (Table 3-266). Of the sites, 93 percent (n=514) are in the low cultural resource intensity zone; 5 percent (n=26) are in the moderate cultural resource intensity zone; and 2 percent (n=13) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 3 prehistoric lithic and artifact scatter, 1 historic artifact scatter, 1 homestead, and 8 historic linear sites (i.e., canal, railroad, and road). The Sevier Railway/Marysvale Branch of the D&RGW Railway is in the Project APE along this alternative route. This historic railway is crossed by Link U625.

Cultural-Visual Resources

A total of 55 historic properties associated with Alternative COUT-A in Utah are identified as visually sensitive. These sites include 5 NRHP-listed properties, 1 designated TCP (Ute vision quest site [42UT395]), 2 prehistoric rock art sites, 1 prehistoric rock shelter and rock art, 1 prehistoric artifact scatter, 14 historic habitations (e.g., homesteads and foundations), 1 historic cairn, 1 military hospital

complex, Mill Fork Cemetery, 1 CCC dam/livestock enclosure, 1 stock driveway sign, 1 feedlot and tramway, and 1 homestead with a prehistoric component. The remaining sites include 16 canals, 4 railroads, and 4 roads. Some of the historic linear sites are the Sevier Railway/Marysvale Branch of the D&RGW Railway, the Utah and Pleasant Valley Railway, the Old Victory Highway, and the U.S. Highway 6.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT-A in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Of particular importance, the Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT-A in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP and located along Alternative COUT-A in Utah, are the same as the sites identified for Alternative COUT BAX-E.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Utah segment of Alternative COUT-A.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Utah segment of Alternative COUT-A.

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-A has the fewest miles of high cultural resource intensity. In Utah, there are 2.4 miles of high, 9.3 miles of moderate, and 171.9 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 2.4 miles of high cultural resource intensity in Utah are the result of 13 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative COUT-A in Utah include 6 NRHP-listed properties, 1 designated TCP (Ute vision quest site), the Utah and Pleasant Valley Railway, the Sevier Railway/Marysvale Branch of the D&RGW Railway, the U.S. Highway 6, and the Old Victory Highway. These resources are outside of the APE, except for the Sevier Railway/Marysvale Branch of the D&RGW Railway, which is in the Project APE. Sites located beyond the Project APE could be subject to indirect effects.

The Little Denmark Heritage District is a key area identified along the alternative route. Of the cultural resources identified in the boundaries of this heritage district, the majority are prehistoric lithic and

artifact scatters, prehistoric and historic campsites and habitations, historic artifact scatters, waterworks, and transportation and utility corridors. Sites have been identified in all of the cultural resource intensity zones along this alternative route. All of the NRHP-listed properties identified in the portion of the Little Denmark Heritage District, crossed by the Project, are concentrated in the towns of Nephi and Fountain Green, Utah, outside of the Project APE. Although these historic properties are located beyond the Project APE, they could be subject to indirect effects. There is a high potential for unrecorded archaeological and historic sites to occur in this area.

If this alternative route is selected, a complete Class III intensive pedestrian inventory would be conducted along the entire alternative route as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and evaluated for eligibility for the NRHP and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity will also be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Alternative COUT-B

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative COUT-B in Colorado are the same as those identified for Alternative COUT-A as the alternative routes follow the same path through the state (Table 3-266).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT-B are the same as the sites identified for Alternative COUT-A.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative COUT-B.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT-B.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-B.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-B has the third highest miles of high cultural resource intensity. Because Alternative COUT-B in Colorado follows the same route as Alternative COUT-A, these alternative routes have the same levels of cultural resource intensity (Table 3-266). The key resources identified along Alternative COUT-B in Colorado are the same as those identified for Alternative COUT-A. Without mitigation, the type of potential impacts would be

the same as those described for COUT-A in Colorado. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I

A total of 671 sites were identified in the Class I inventory conducted for Alternative COUT-B in Utah, including 278 prehistoric sites, 352 historic sites, and 41 multi-component sites (Table 3-266). Of the sites, approximately 90 percent (n=602) are in the low cultural resource intensity zone; 6 percent (n=38) are in the moderate cultural resource intensity zone; and 4 percent (n=31) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 3 prehistoric lithic and artifact scatters, 1 prehistoric storage site, 5 historic artifact scatters, 2 homesteads, 1 livestock enclosure, 1 oil drilling camp, 1 historic quarry/staging area, 1 prehistoric artifact scatter and livestock enclosure, and 16 historic linear sites (i.e., canal, aqueduct, road, and railroad). The Sevier Railway/Marysvale Branch of the D&RGW Railway and the U.S. Highway 6 are in the Project APE along this alternative route. The historic railway is crossed by Link U625 and the historic road corridor is crossed by Link U527.

Cultural-Visual Resources

A total of 87 historic properties associated with Alternative COUT-B in Utah are identified as visually sensitive. These sites include 5 NRHP-listed properties, 1 designated TCP (Ute vision quest site [42UT395]), 1 prehistoric rock shelter/rock art site, 24 historic habitation sites (e.g., homesteads and foundations), 2 cairns, 2 town sites (Soldier Summit and Gilluly), 1 military hospital complex, the Mill Fork Cemetery, 1 CCC dam/livestock enclosure, 1 bridge, 1 historic burial, 1 feedlot and tramway, 1 aqueduct (exposed wooden and ceramic pipes), 2 pipelines (exposed wooden pipes), 1 telephone line, 1 water diversion system, 1 stock driveway sign, 1 prehistoric campsite and homestead, 27 canals (one built by the CCC), 5 roads, 5 railroads, and 2 railroad spurs of the D&RG Railroad. Some of the historic linear sites are the Old Victory Highway, the U.S. Highway 6, the Sevier Railway/Marysvale Branch of the D&RGW Railway, and the Utah and Pleasant Valley Railway.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT-B in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP, and located along Alternative COUT-B in Utah, are the same as those identified for Alternative COUT BAX-E.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Utah segment of Alternative COUT-B.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Utah segment of Alternative COUT-B.

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-B has the third highest miles of high cultural resource intensity. In Utah, 5.4 miles of high, 10.5 miles of moderate, and

178 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 5.4 miles of high cultural resource intensity in Utah are the result of 31 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility; and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative COUT-B in Utah include 6 NRHP-listed properties, 1 designated TCP (Ute vision quest site), the Utah and Pleasant Valley Railway, the Old Victory Highway, and the Emma Park Road. Although these resources are beyond the Project APE, they could be subject to indirect effects. Two additional key resources along this alternative route are the Sevier Railway/Marysvale Branch of the D&RGW Railway and the U.S. Highway 6, which are in the Project APE.

In addition to the baseline inventory data, Argyle Canyon Rock Art is a key resource identified along the alternative route. This cultural resource is situated between Argyle Ridge to the south and Bad Land Cliff to the north, south of Duchesne, Utah along Links U431 and U432 adjacent to and in the Project APE. There are numerous rock art panels in the canyon, as well as prehistoric lithic/artifact scatters, habitations, and ceremonial sites. The Little Denmark Heritage District also is a key area along this alternative route. Sites identified in the boundaries of this heritage district are the same as the sites identified for Alternative COUT-A in Utah as they follow the same path through this portion of the study corridor. There is a high potential for unrecorded archaeological and historic sites to occur in these areas.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Utah would be employed.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Affected Environment (Colorado)

Class I Sites

A total of 152 sites were identified in the Class I inventory conducted for Alternative COUT-C in Colorado, including 116 prehistoric sites, 26 historic sites, and 10 multi-component sites (Table 3-266). Of the sites, 90 percent (n=137) are in the low cultural resource intensity zone; 4 percent (n=7) are in the moderate cultural resource intensity zone; and 6 percent (n=9) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 6 prehistoric lithic and artifact scatters, 1 prehistoric slab-lined hearth, 1 rock shelter, and 1 mine complex.

Cultural-Visual Resources

A total of 5 historic properties associated with Alternative COUT-C in Colorado are identified as visually sensitive. These sites include 1 Fremont sandstone wall structure, 1 Ute rock art site, 1 prehistoric rock shelter with Fremont rock art, 1 bridge, and the Old Victory Highway.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative COUT-C.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT-C.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-C.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-C has the second fewest miles of high cultural resource intensity. In Colorado, there are 1.2 miles of high, 0.4 miles of moderate, and 23.4 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah and not in Colorado. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 1.2 miles of high cultural resource intensity in Colorado are the result of nine known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

A key resource along this alternative route is the Old Victory Highway. Although this historic linear site is located beyond the Project APE, it could be subject to indirect effects.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 994 sites were identified in the Class I inventory conducted for Alternative COUT-C in Utah, including 541 prehistoric sites, 408 historic sites, 41 multi-component sites, 4 ethnographic sites (Table 3-266). Of the sites, 93 percent (n=922) are in the low cultural resource intensity zone; 4 percent (n=42) are in the moderate cultural resource intensity zone; and 3 percent (n=32) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 7 prehistoric lithic and artifact scatters, 6 prehistoric campsites, 2 prehistoric rock shelters, 3 historic artifact scatters, 2 historic campsites, 1 cairn, 2 historic habitations (tent foundation and homestead), 1 oil drilling camp, 1 prehistoric artifact scatter and livestock enclosure, and 1 prehistoric campsite and historic inscriptions. The remaining sites include 4 historic linear sites (i.e., road and railroad). The Sevier Railway/Marysvale Branch of the D&RGW Railway and the Utah Southern Railroad/Union Pacific Railroad are located in Project APE along this alternative route. The historic railway is crossed by Link U625. Historic roads are the Ninemile Canyon Road and Jensen to Mormon Gap Road.

Cultural-Visual Resources

A total of 55 historic properties associated with Alternative COUT-C in Utah are identified as visually sensitive. These sites include 5 NRHP-listed properties, 1 designated TCP (Ute vision quest site [42UT395]), 3 prehistoric rock art sites (primarily Fremont styles), 6 historic habitations (e.g.,

homesteads and foundations), 5 historic rock art sites (e.g., Hispanic and Ute elements), 3 stock drivelines/stock driveway sign, 2 mine camps and 1 mine complex, 2 railroad habitation sites, 2 town sites (Soldier Summit and Gilluly), 1 way station, 1 water well, Mill Fork Cemetery, 1 bridge, and 1 feedlot and tramway. The remaining sites include 2 pipelines, 5 canals, 6 roads, 5 railroads, 1 railroad spur, and 1 aqueduct. Some of the historic linear sites are the Sevier Railway/Marysvale Branch of the D&RGW Railway, the Utah and Pleasant Valley Railway, the abandoned Road from Colton to Duchesne and Helper, and the U.S. Highway 6.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT-C in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP and located along Alternative COUT-C in Utah, are the same as those identified for Alternative COUT BAX-E.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Utah segment of Alternative COUT-C.

Areas of Critical Environmental Concern with Cultural Components

The record search identified one cultural resource area, Nine Mile Canyon, designated as an ACEC along the Utah segment of Alternative COUT-C. The southern boundary of the ACEC (in the BLM Vernal Field Office) coincides with the Duchesne-Carbon county line, encompassing the majority of the canyon and side canyons, and extending eastward into the Green River. It encompasses significant Archaic, Fremont, and Ute rock art sites, habitation and open campsites, storage facilities, and artifacts scatters; historically significant farming and ranching resources; and a historic U.S. Army outpost. Hundreds of archaeological resources have been identified and documented along Nine Mile Canyon and side canyons. Nine Mile Canyon ACEC is located along Links U401 and U413 in the low cultural resource intensity zone beyond the Project APE. A portion of the Nine Mile Canyon ACEC is situated along Links U400 and U404 in the Project APE (more than 126 feet from the referenced centerline).

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-C has the second fewest miles of high cultural resource intensity. In Utah, there are 4.9 miles of high, 5.2 miles of moderate, and 173.1 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 4.9 miles of high cultural intensity in Utah are the result of 32 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along Alternative COUT-C in Utah include 6 NRHP-listed properties, 1 designated TCP (Ute vision quest site [42UT395]), the U.S. Highway 6, the Emma Park Road, the Utah and Pleasant Valley Railway, and Nine Mile Canyon ACEC. Although these resources are located beyond the Project APE, they could be subject to indirect effects. One additional key resource along this alternative route is the Sevier Railway/ Marysvale Branch of the D&RGW Railway, which is in the Project APE.

In addition to the baseline inventory data, Argyle Canyon Rock Art is a key resource identified along the alternative route. This cultural resource is situated along Links U404 and U406, adjacent to and in the Project APE. The Little Denmark Heritage District also is a key area along this alternative route. Sites identified in the boundaries of this heritage district are the same as the sites identified for Alternative COUT-A in Utah as they follow the same path through this portion of the study corridor. There is a high potential for unrecorded archaeological and historic sites to occur in these areas.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Utah would be employed.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

Affected Environment

A total of 41 sites were identified in the Class I inventory conducted for the 345kV Bears Ears to Bonanza transmission line relocation under Alternative COUT-C. Sites consist of 24 prehistoric sites, 14 historic sites, and 3 multi-component sites; 20 of the sites are in Colorado and 21 are in Utah. Of the sites, 83 percent (n=34) are in the low cultural resource intensity zone; 7 percent (n=3) are in the moderate cultural resource intensity zone; and 10 percent (n= 4) are in the high cultural resource intensity zone in the Project APE. Sites in the low cultural resource intensity zone include 11 prehistoric lithic and artifact scatter, 5 prehistoric campsites, 3 prehistoric rock shelters, 1 prehistoric lithic procurement area, 6 historic artifact scatters, 3 habitations (homestead, rock-lined dugout, and foundation), 1 historic campsite, 1 historic Ute rock art site, and 3 lithic scatters with historic components (log cabin, and artifact scatters/dumps). Sites in the moderate cultural resource intensity zone include 2 prehistoric lithic and artifact scatters and 1 prehistoric campsite. Sites in the Project APE include 1 prehistoric lithic scatter, 1 historic artifact scatter, 1 earthen dam/reservoir, and the Jensen to Mormon Gap Road.

There are no NRHP-listed properties, NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components in this portion of the study corridor.

Environmental Consequences

All of the cultural resource sites associated with the 345kV Bears Ears to Bonanza transmission line relocation are in low and moderate cultural resource intensity zones, except for four sites, which are in the Project APE. Sites in the Project APE along this portion of Alternative COUT-C occur in Utah. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

If the Project goes forward, a complete Class III intensive pedestrian inventory would be conducted as part of the Class III study. All sites in the high cultural resource intensity zone would be documented and

evaluated for eligibility for the NRHP; and sites located in the low and moderate cultural resource intensity zones that meet the criteria established for potential visual sensitivity also would be documented and evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance, direct and indirect long-term visual and auditory intrusions, and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Alternative COUT-H

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative COUT-H in Colorado are the same as those identified for Alternative COUT-C as the alternative routes follow the same path through the state (Table 3-266).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT-H are the same as the sites identified for Alternative COUT-C.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Colorado segment of Alternative COUT-H.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT-H.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-H.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-H has the second highest miles of high cultural resource intensity. Because Alternative COUT-H in Colorado follows the same route as Alternative COUT-C, these alternative routes have the same levels of cultural resource intensity (Table 3-266). The key resources identified along Alternative COUT-H in Colorado are the same as those identified for Alternative COUT-C. Without mitigation, the type of potential impacts would be the same as those described for COUT-C. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 1,253 sites were identified in the Class I inventory conducted for Alternative COUT-H in Utah, including 600 prehistoric sites, 598 historic sites, 4 ethnographic sites, and 51 multi-component sites (Table 3-266). Of the sites, 88 percent (n=1,100) are in the low cultural resource intensity zone; 6 percent (n=71) are in the moderate cultural resource intensity zone; and 6 percent (n=82) are in the high cultural

resource intensity zone in the Project APE. Sites in the Project APE include 10 prehistoric lithic and artifact scatters, 7 prehistoric campsites, 2 prehistoric rock shelters, 1 Ute rock art site, 1 Fremont burial, 1 prehistoric lithic procurement area, 12 historic artifact scatters, 8 historic habitations (e.g., homestead and foundations), 2 historic berms, 1 livestock enclosure, 2 historic campsites, 2 unknown structural sites, 2 dendroglyphs, 4 mining-related sites (mine camps, mine complex, and coal refuse), 1 dam, 1 historic cairn, 1 railroad camp (possibly associated with the Utah Railway), 1 prehistoric lithic scatter and historic artifact scatter, 1 prehistoric artifact scatter and historic rock art, 1 prehistoric lithic procurement area and historic artifact scatter, 1 prehistoric campsite and livestock enclosure/driveline, and 20 segments of 18 historic linear sites (i.e., canal, road, pipeline, power line, and railroad). The Utah and Pleasant Valley Railway and the U.S. Highway 6 are in the Project APE along this alternative route. The historic railway is crossed by Link U600 and the historic road corridor is crossed by Link U545.

Cultural-Visual Resources

A total of 87 historic properties associated with Alternative COUT-H in Utah are identified as visually sensitive. These sites include 9 NRHP-listed properties, 6 prehistoric rock art sites, 14 historic habitations (e.g., homesteads and dugouts), 8 mining-related sites (i.e., mine camps and complexes), 5 historic rock art sites, 1 CCC campground, 4 historic stock drivelines, 1 livestock enclosure, 2 water wells, 2 town sites (Heiner [Carbon] and Coal City), 1 way station, 1 historic dugout, 1 WPA erosion control system, 1 feedlot and tramway, 1 railroad boarding house complex, 1 standing structure (wall and garage), and 1 prehistoric rock shelter/rock art and historic campsite. The remaining sites include 13 canals, 8 railroads, 4 roads, 2 telegraph/telephone line, and 1 pipeline. Some of the historic linear site are the Utah and Pleasant Valley Railway, the Utah Railway, the old State Route 6, and the U.S. Highway 6.

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT-H in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

The NRHP records search identified 10 NRHP-listed properties along Alternative COUT-H in Utah. Nine of these properties, as well as the estimated times they were constructed or completed, include Juab County Jail (1892), Edwin Robert Booth House (1893), Oscar M. Booth House (1893), Helper Commercial District (1896), George Carter Whitmore Mansion/Colonial Villa (1898), Helper Main Post Office (1900), Clerico Commercial Building (1914), Martin Millarich Hall/Slovenian National Home (1922), and Nephi Main Post Office (1931). The remaining NRHP-listed property located along this alternative route is the Nephi Mounds (42JB2). All of the historic properties are located in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Utah segment of Alternative COUT-H in Utah.

Areas of Critical Environmental Concern with Cultural Components

The ACEC with cultural components located along the Utah segment of Alternative COUT-H is the same as that identified for Alternative COUT-C. Nine Mile Canyon ACEC is located along Links U401 and U413 in the low cultural resource intensity zone beyond the Project APE. A portion of the Nine Mile Canyon ACEC is situated along Links U400 and U404 in the Project APE (more than 126 feet from the referenced centerline).

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-H has the second highest miles of high cultural resource intensity. In Utah, there are 9.3 miles of high, 8.5 miles of moderate, and 157.8 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah. The mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 9.3 miles of high cultural resource intensity in Utah are the result of 82 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along this alternative route include 10 NRHP-listed properties, Heiner (Carbon) Town site, the Utah and Pleasant Valley Railway, the National Coal Railway, the U.S. Highway 6, the Emma Park Road, and Nine Mile Canyon ACEC. Of these resources, the NRHP-listed properties, the Emma Park Road, and Nine Mile Canyon ACEC are outside of the Project APE. Although these resources are located beyond the Project APE, they could be subject to indirect effects.

In addition to the baseline inventory data, Argyle Canyon Rock Art is a key resource identified along the alternative route. This cultural resource is located along Links U404 and U406 adjacent to and in the Project APE. The Little Denmark Heritage District also is a key area along this alternative route. Sites identified in the boundaries of this heritage district are the same as the sites identified for Alternative COUT BAX-E in Utah as they follow the same path through this portion of the study corridor. There is a high potential for unrecorded archaeological and historic sites to occur in this area.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Utah would be employed.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The affected environment and environmental consequences of the 345kV Bears Ears to Bonanza relocation would be the same as Alternative COUT-C.

Alternative COUT-I

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative COUT-I in Colorado are the same as those identified for Alternative COUT-C as both routes follow the same path through the state (Table 3-266).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT-I are the same as the sites identified for Alternative COUT-C.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP located along the Colorado segment of Alternative COUT-I.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Colorado segment of Alternative COUT-I.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-I.

Environmental Consequences (Colorado)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-I has the highest miles of high cultural resource intensity. Because Alternative COUT-I in Colorado follows the same route as Alternative COUT-C, these alternative routes have the same levels of cultural resource intensity (Table 3-266). The key resources identified along Alternative COUT-I in Colorado are the same as those identified for Alternative COUT-C. Without mitigation, the type of potential impacts would be the same as those described for COUT-C in Colorado. If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 1,360 sites were identified in the Class I inventory conducted for Alternative COUT-I in Utah, including 709 prehistoric sites, 603 historic sites, 4 ethnographic sites, and 44 multi-component sites (Table 3-266). Of the sites, 90 percent (n=1,230) are in the low cultural resource intensity zone; 5 percent (n=69) are in the moderate cultural resource intensity zone; and 5 percent (n=61) are in the high cultural resource intensity zone in the Project APE. Sites in the Project APE include 10 prehistoric lithic and artifact scatters, 15 prehistoric campsites, 3 prehistoric habitations (i.e., rock shelters and pithouse), 5 historic artifact scatters, 1 historic campsite, 3 homesteads, 1 mine camp, 2 mine complexes, 1 cairn, 1 dam, 1 CCC retaining wall, 1 prehistoric lithic scatters and historic artifact scatter, 1 prehistoric single-room structure and historic campsite, and 16 segments of 14 historic linear sites (e.g., canal, telephone, railroad, and road). The U.S. Highway 6 is in the Project APE along this alternative route; it is crossed by Link U494.

Cultural-Visual Resources

A total of 95 historic properties associated with Alternative COUT-I in Utah are identified as visually sensitive. These sites include 23 NRHP-listed properties, 5 prehistoric rock art sites, 1 prehistoric wickiup, 12 historic habitations (e.g., homesteads and foundations), 5 historic art sites (European-American and Hispanic elements), 3 mine camps, 1 mine complex, 3 historic stock drivelines, the mining town of Mohrland, 1 bridge, 1 way station, 1 Mormon pioneer monument, 1 CCC erosion control system, 1 CCC check dam, 1 water well, 1 feedlot and tramway, 1 kiln, and 1 prehistoric lithic scatter and homestead. The remaining sites include 16 canals, 6 railroads, 9 roads, and 2 telegraph/telephone lines. Some of the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Railway, the Utah Southern Railroad, the U.S. Highway 6, U.S. Highway 91, the Price-Myton Freight Road, and a CCC road (Jeep Trail) depicted on the 7.5' USGS Quadrangle Deadman Canyon, Utah (1972).

The Nephi Mounds site (42JB2), which is one of the NRHP-listed properties located along Alternative COUT-H in Utah, is not included under this category. Despite its eligibility status, this site has been destroyed by decades of plowing.

Historic Properties Listed in the National Register of Historic Places

The NRHP records search identified 24 NRHP-listed properties along Alternative COUT-I in Utah. Twenty-three of these historic properties, as well as the estimated times they were constructed or completed, include Cyrus Wheelock House/Madsen House (1860), William Stuart Seeley House (Mount Pleasant Pioneer Historical Association Relic Home) (1861), Alma Staker House (1870), John H. Seeley House (1870), Watkins-Tholman-Larsen Farmstead (1870), Andrew Barentsen House (1874), Morten Rasmussen House (1875), Ole Arlisen House (1875), Mount Pleasant Commercial Historic District (1875), Hans Peter Olsen House (1877), James B. Staker House (1880), Frederick C. Jensen House (1891), Juab County Jail (1892), N. S. Nielson House (1892), Edwin Robert Booth House (1893), Oscar M. Booth House (1893), the Wasatch Academy (1893), George Carter Whitmore Mansion/Colonial Villa (1898), Mount Pleasant Carnegie Library (1917), Fountain Green Hydroelectric Plant Historic District (1922), Nephi Main Post Office (1931), Mount Pleasant High School Mechanical Arts Building (1935), and Mount Pleasant National Guard Armory (1936). The remaining NRHP-listed property located along this alternative route is the Nephi Mounds (42JB2). All of the NRHP-listed properties are in the low cultural resource intensity zone beyond the Project APE.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Utah segment of Alternative COUT-I.

Areas of Critical Environmental Concern with Cultural Components

The ACEC with cultural components located along the Utah segment of Alternative COUT-I is the same as that identified for Alternative COUT-C. Nine Mile Canyon ACEC is located along Links U401 and U413 in the low cultural resource intensity zone beyond the Project APE. A portion of the Nine Mile Canyon ACEC is situated along Links U400 and U404 in the Project APE (more than 126 feet from the referenced centerline).

Environmental Consequences (Utah)

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-I has the highest miles of high cultural resource intensity. In Utah, there are 10.6 miles of high, 9.9 miles of moderate, and 194.7 miles of low cultural resource intensity (Table 3-266). Most of the sites located in the Project APE along this alternative route occur in Utah. It is important to note that the mileages of cultural resource intensity do not correlate directly with an equal number of miles in impacts on cultural resources. The 10.6 miles of high cultural resource intensity in Utah are the result of 61 known sites in the Project APE along the alternative route. Potential impacts on sites in the Project APE could be direct and permanent ground disturbance associated with the construction of tower locations and access roads and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of new or improved access roads). Potential impacts on sites in the low and moderate cultural resource intensity zones could be direct and indirect permanent disturbances due to changes in public accessibility and direct and indirect long-term visual, atmospheric, and auditory intrusions that could compromise aspects of site integrity, such as setting, feeling, and association, which are components of NRHP eligibility. These types of disturbance could damage or destroy cultural resources if not mitigated.

Key resources along this alternative route include 24 NRHP-listed properties, the D&RGW Railway, the Buckhorn Flat Railroad, the Emma Park Road, and Nine Mile Canyon ACEC. Although these resources

are located beyond the Project APE, they could be subject to indirect effects. One additional key resource is the U.S. Highway 6, which is in the Project APE.

In addition to the baseline inventory data, Argyle Canyon Rock Art is a key resource identified along the alternative route. This cultural resource is located along Links U404 and U406 adjacent to and in the Project APE. The Little Denmark Heritage District also is a key area along this alternative route. Sites identified in the boundaries of this heritage district are the same as the sites identified for Alternative COUT BAX-B in Utah as they follow the same path through this portion of the study corridor. There is a high potential for unrecorded archaeological and historic sites to occur in these areas.

If this alternative route is selected, the same Class III intensive pedestrian inventory and reporting procedures outlined for Alternative COUT-A in Utah would be employed.

Bears Ears to Bonanza 345-kilovolt Transmission Line Relocation

The affected environment and environmental consequences of the 345kV Bears Ears to Bonanza relocation would be the same as Alternative COUT-C.

3.2.20.5.6 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Siting Area A – Powder Wash

Affected Environment

A total of 191 cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area A under Alternative WYCO-B in Wyoming and Colorado. These sites, broken down by state, consist of 101 prehistoric sites, 4 historic sites, and 5 multi-component sites in Wyoming and 68 prehistoric sites, 5 historic sites, and 8 multi-component sites in Colorado.

In Wyoming, sites include 61 prehistoric campsites, 27 prehistoric lithic and artifact scatters, 9 prehistoric isolated features (hearths, fire-cracked rock, and stained sediments), 1 prehistoric cairn, 1 prehistoric lithic procurement area, 1 prehistoric lithic landscape (Washakie Basin Lithic Landscape), 1 prehistoric campsite with human remains, 3 historic campsites and shelter, 1 prehistoric hunting blind and historic campsite, 1 prehistoric campsite and homestead, 1 prehistoric campsite and historic artifact scatter, 1 prehistoric campsite and livestock enclosure, 1 prehistoric thermal feature and historic artifact scatter, and the Cherokee Historic Trail. Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

In Colorado, sites include 39 prehistoric campsites, 24 prehistoric lithic and artifact scatters, 3 prehistoric habitation sites (unknown structure, pithouse, and wickiups), 1 prehistoric thermal feature, 1 prehistoric storage cist, 2 historic habitation sites (homestead and habitation structures), 2 historic artifact scatters, 1 historic campsite, and 8 prehistoric campsites and lithic scatters with historic components (homestead, artifact scatters, short-term campsite, and brush shelter). Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 191 known sites (110 in Wyoming and 81 in Colorado) potentially would be affected by a proposed series compensation station in Siting Area A under Alternative WYCO-B. Potential impacts on these sites could be direct and permanent ground disturbance associated with the construction of the series compensation station and access roads, direct and indirect long-term visual and auditory intrusion and direct and indirect permanent disturbances due to changes in public accessibility (i.e., the introduction of

new or improved access roads). These types of disturbance could damage or destroy cultural resources if not mitigated.

If a series compensation station is constructed in Siting Area A, a complete Class III intensive pedestrian inventory would be conducted for the proposed location as part of the Class III study. All sites would be documented and evaluated for eligibility for the NRHP. All site information would be provided in the Class III inventory report that would be reviewed by the agencies, tribes who have signed the Programmatic Agreement or who have signed a data sharing agreement with the BLM, and the SHPOs, who would then determine if the Project has the potential to have an adverse effect (i.e., direct and permanent ground disturbance; direct and indirect long-term visual, atmospheric, and auditory intrusions; and direct and indirect permanent disturbances due to changes in public accessibility) on these sites. Prior to construction activities in the area, any adverse effects on the sites would need to be resolved per 36 CFR Part 800.6.

Siting Area B – Nine Mile Basin

Affected Environment

A total of 18 sites were identified in the Class I inventory conducted for proposed Siting Area B under Alternative WYCO-B in Colorado. These sites include 10 prehistoric lithic and artifact scatters, 3 prehistoric lithic procurement areas, 3 prehistoric campsites, 1 prehistoric thermal feature, and 1 Fremont pithouse. Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 18 known sites potentially would be affected by a proposed series compensation station in Siting Area B under Alternative WYCO-B in Colorado. Without mitigation, the type of potential impacts would be the same as those described for Siting Area A under Alternative WYCO-B. If this siting area is constructed, the same Class III intensive pedestrian inventory and reporting procedures outlined for Siting Area A under Alternative WYCO-B would be employed.

Siting Area C – Maybell

Affected Environment

A total of 60 sites were identified in the Class I inventory conducted for proposed Siting Area C under Alternative WYCO-B in Colorado. These sites, broken down by type, consist of 54 prehistoric sites, 4 historic sites, and 2 multi-component sites. Site types include 30 prehistoric lithic and artifact scatters, 17 prehistoric campsites, 4 prehistoric habitations (rock shelter, single room, and pithouses), 2 prehistoric lithic procurement areas, 1 prehistoric thermal feature, 1 historic homestead, 1 irrigation ditch, 1 historic dugout, 1 segment of Brown's Park Road, and 2 prehistoric lithic scatters with historic components (habitation structures). Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Unrecorded segments of the Old Victory Highway and the Deerlodge Road (issue identified for analysis during Project scoping) also occur within the limits of proposed Siting Area C in the Project APE.

Environmental Consequences

A total of 60 known sites potentially would be affected by a proposed series compensation station in Siting Area C under Alternative WYCO-B in Colorado. Without mitigation, the type of potential impacts would be the same as those described for Siting Area A under Alternative WYCO-B. If a series

compensation station was constructed in Siting Area C, the same Class III intensive pedestrian inventory and reporting procedures outlined for Siting Area A under Alternative WYCO-B would be employed.

Alternative WYCO-C

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-C would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternative WYCO-D

Siting Area D – Bell Rock

Affected Environment

A total of 14 sites were identified in the Class I inventory conducted for a proposed series compensation station in Siting Area D under Alternative WYCO-D in Colorado. These sites, broken down by type, consist of 8 prehistoric sites and 6 historic sites. They include 5 prehistoric campsites, 3 prehistoric lithic and artifact scatters, 4 historic habitations sites (homesteads and habitation structures), 1 irrigation canal, and 1 early 1900s grave. Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 143 known sites potentially would be affected by a proposed series compensation station in Siting Area D under Alternative WYCO-D in Colorado. Without mitigation, the type of potential impacts would be the same as those described for Siting Area A under Alternative WYCO-B. If a series compensation station is constructed, the same Class III intensive pedestrian inventory and reporting procedures outlined for Siting Area A under Alternative WYCO-B would be employed.

Alternative WYCO-F

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area A as Alternative WYCO-B.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area B as Alternative WYCO-B.

Siting Area C – Maybell

Affected Environment and Environmental Consequences

Alternative WYCO-F would have the same affected environment and environmental consequences for Siting Area C as Alternative WYCO-B.

Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E

Siting Area G – Green River

A total of 7 sites were identified in the Class I inventory conducted for proposed Siting Area G under the COUT BAX alternative routes in Utah. These sites, broken down by type, consist of 1 prehistoric site and 6 historic sites. Site types include 1 Fremont artifact scatter, 2 historic artifact scatters, the D&RGW Railway, the D&RGW Railroad, the U.S. Highway 6, and U.S. Highway 24. Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of seven known sites potentially would be affected by a proposed series compensation station in Siting Area G under the COUT BAX alternative routes in Utah. Without mitigation, the type of potential impacts would be the same as those described for Siting Area A under Alternative WYCO-B. If this siting area is constructed, the same Class III intensive pedestrian inventory and reporting procedures outlined for Siting Area A under Alternative WYCO-B would be employed.

Alternative COUT-A

Siting Area F – Roosevelt

Affected Environment

A total of 71 sites were identified in the Class I inventory conducted for proposed Siting Area F under Alternative COUT-A in Utah. These sites, broken down by type, consist of 29 prehistoric sites, 39 historic sites, and 3 multi-component sites. Site types include 12 prehistoric lithic and artifact scatters, 10 prehistoric campsites, 4 prehistoric lithic procurement areas, 3 prehistoric habitation sites (rock shelter and wikiups), 12 historic artifact scatters, 12 historic habitation sites (homestead, wickiup, and cabin), 10 canals/ditches, 1 unnamed historic road, 1 historic shed structure, 1 historic depression of unknown function, 1 late nineteenth century military hospital complex, 1 prehistoric lithic scatter and historic artifact scatter, 1 prehistoric lithic procurement and historic artifact scatter, and 1 prehistoric campsite and homestead. Cultural resources are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 71 known sites potentially would be affected by a proposed series compensation station in Siting Area F under Alternative COUT-A in Utah. Without mitigation, the type of potential impacts would be the same as those described for Siting Area A under Alternative WYCO-B. If this siting area is constructed, the same Class III intensive pedestrian inventory and reporting procedures outlined for Siting Area A under Alternative WYCO-B would be employed.

Alternative COUT-B

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

Alternative COUT-B would have the same affected environment and environmental consequences for Siting Area F as Alternative COUT-A.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Siting Area E – Bonanza

A total of 264 sites were identified in the Class I inventory conducted for proposed Siting Area E under Alternative COUT-C in Utah. These sites, broken down by type, consist of 162 prehistoric sites, 94 historic sites, and 8 multi-component sites. Site types include 90 prehistoric lithic and artifact scatters, 58 prehistoric campsites, 11 prehistoric lithic procurement areas, 2 prehistoric rock shelters, 1 prehistoric thermal feature (concentration of fire-cracked rock), 50 historic artifact scatters, 12 historic campsites, 8 historic cairns, 4 gilsonite mine-related sites (isolated mines, camps, and mine complex), 5 historic habitations (tent platform and foundations), 4 livestock enclosures, 1 way station, 2 stock drivelines, 1 water well, 1 grazing allotment boundary sign, 1 dismantled telegraph/telephone line, 1 windmill, 4 roads, 4 prehistoric lithic and artifact scatters with historic components (trash and farming/ranching-related structures), 3 prehistoric campsites with historic components (trash and livestock enclosure), and 1 prehistoric storage cist and historic artifact scatter. Sites are in the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 264 known sites potentially would be affected by a proposed series compensation station in Siting Area E under Alternative COUT-C in Utah. Without mitigation, the type of potential impacts would be the same as those described for Siting Area A under Alternative WYCO-B. If this siting area is constructed, the same Class III intensive pedestrian inventory and reporting procedures outlined for Siting Area A under Alternative WYCO-B would be employed.

Alternatives COUT-H and COUT-I

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

Alternatives COUT-H and COUT-I have the same affected environment and environmental consequences for Siting Area E as Alternative COUT-C.

3.2.21 Fire Ecology and Management

3.2.21.1 Introduction and Regulatory Framework

Wildland fire is defined as non-structure fire that occurs in areas lacking substantial development, although roads, railroads, and linear utilities may be present. This definition includes unplanned fires that may be managed to benefit resources, as well as prescribed fires, which are intentionally set to achieve specific resource management goals. This section addresses potential impacts on wildland fire ecology and management resulting from the No Action Alternative and various alternative routes during construction, operation, and maintenance.

Implementation of the Project would be consistent with statutes, regulations, plans, programs, and policies of federal agencies, affiliated tribes, and state and local governments.

3.2.21.1.1 Regulatory Framework

Federal

Wildland fire management on federal lands, including control, suppression, and use of prescribed fire, is the responsibility of each land-management agency. However, interagency guidance has been developed at the national level through several complementary efforts to ensure that fire management is conducted across jurisdictions to provide for the safety of human life and property, while maintaining a healthy ecosystem. Various national planning efforts have also increasingly focused on cooperation with state and local fire agencies in recognition of the ongoing expansion of the Wildland-Urban Interface that often brings human habitation into proximity with undeveloped federal lands.

During much of the early twentieth century, nearly all wildland fires were fully suppressed as rapidly as possible (Littell et al. 2009). As negative effects of fire suppression became apparent through the increasing frequency of large, uncontrollable fires supported by heavy fuel accumulation, fire management has changed to encompass a greater range of options. The *Federal Wildland Fire Management Policy* was developed in 1995 with the goal of directing federal land-management agencies to conduct collaborative fire management and planning and to consider wildfire as a natural process that can be important for the maintenance of healthy ecosystems. This policy continues to be updated, and has provided the framework for additional guidance at the national level as wildfire frequency and severity continue to increase.

The *Federal Land Assistance, Management and Enhancement Act of 2009* required the development of a national cohesive wildland fire management strategy (Wildland Fire Leadership Council 2011). This strategy provides goals to be met by land-management agencies, including reducing the risk to landscapes, life, and property. The National Fire Plan, developed in 2000, included as one of its components a requirement that all federal land-management agencies prepare and update Fire Management Plans (FMP) for all areas of burnable vegetation. The following FMPs, along with other documents, address fire management on federal lands in the Project area:

- Wyoming High Desert District Fire Management Plan (BLM 2011i)
  - Rawlins Field Office
- Northwest Colorado Fire Management Program Fire Management Plan (BLM 2012p)
  - Little Snake and White River Field Offices
  - Browns Park NWR
- Fire Management Plan for the Colorado National Monument and BLM Grand Junction Field Office (BLM 2008j)
- Ashley National Forest Fire Management Plan (USFS 2012b)
- Manti-La Sal National Forest Fire Management Plan (USFS 2012c)
- Uinta-Wasatch-Cache National Forest Fire Management Plan (USFS 2012d)
- Utah Land-use Plan Amendment for Fire and Fuels Management (BLM 2005b)
  - Moab, Richfield, and Salt Lake Field Offices
- Central Utah Interagency Fire Management Plan (BLM and USFS 2010)
  - Richfield and Fillmore Field Offices
  - Fishlake National Forest
- Richfield Fire Management Plan Environmental Assessment (BLM 2005c)
- Moab Fire District Fire Management Plan Environmental Assessment (BLM 2005d)
  - Moab and Price Field Offices
- Vernal Fire Management Plan Environmental Assessment (BLM 2005e)
- Salt Lake District Proposed Fire Management Plan Amendment (BLM 1998a)
- Salt Lake Field Office Fire Management Plan (BLM 2004a)

The following documents provide guidance for interagency fire management coordination and response.

- Northern Utah Interagency Fire Center 2014 Annual Operating Plan (BLM et al. 2014)
  - Uinta-Wasatch-Cache National Forest
  - Utah FFSL
- Moab Interagency Fire Danger Operating and Preparedness Plan (BLM et al. 2013)
  - Moab Field Office
  - Manti-La Sal National Forest
  - Utah FFSL
- Uintah Basin Interagency Fire Management Fire Program Analysis Charter (Uintah Basin Interagency Fire Management 2007)
  - Vernal Field Offices
  - Ashley National Forest
  - Dinosaur National Monument, National Park Service
  - Ouray NWR
  - Uintah and Ouray Agency, Bureau of Indian Affairs

Federal and state laws and policies described in Section 3.2.5 are intended to maintain or restore healthy, natural vegetation communities and, as such, typically consider the role fire may play in each vegetation community. Noxious weed policies often address weed species that may create or benefit from unnatural fire regimes. Thus, all laws and policies described in Section 3.2.5 are directly or indirectly related to fire management.

State

Each state in the Project area is typically responsible for vegetation management and fire suppression on state trust lands, but also may participate in fire suppression on adjacent lands under cooperative agreements with federal agencies as noted above.

Wyoming

- The Wyoming State Forestry Division is responsible for wildland fire management on state trust lands and cooperates in wildland fire management on other lands in the Project area under an interagency cooperative agreement (Wyoming State Forestry Division 2010).

Colorado

- The Colorado State Forest Service is responsible for vegetation management on state trust lands. However, responsibility for wildland fire management was transferred in 2012 to the Colorado Department of Public Safety, Division of Fire Prevention and Control (Colorado State University 2012). Fire suppression and interagency coordination is conducted as directed by the Colorado State Emergency Operations Plan (State of Colorado 2010).

Utah

- The Utah FFSL is responsible for wildland fire management on state trust land, and cooperates in wildland fire management on other lands in the Project area (UDNR et al. 2009).

3.2.21.2 Regional Setting

Where land cover is integral to the discussion of fire ecology and management, vegetation communities discussed in this section are as described in Section 3.2.5.4, which consolidated 86 land-cover categories

mapped by GAP into 16 primary vegetation communities (Appendix J, Table J-1). Data regarding fire ecology were accessed primarily from LANDFIRE (also known as Landscape Fire and Resource Management Planning Tools), which is a uniform nationwide interagency source of information on vegetation, fire behavior, and fuels. LANDFIRE is intended to be used at the regional scale but is not intended for use at fine site-specific scales due to the limitations of remote-sensing data and modeling approaches. Thus, where LANDFIRE data are presented with respect to the Project area or any alternative route, the information provides a general description of the existing environment but does not indicate that a particular condition exists at any one point along an alternative route.

3.2.21.3 Issues Identified for Analysis

The following issues were identified during scoping for analysis of impacts on fire ecology and management.

- Construction and operation of the Project may directly or indirectly increase the risk of wildfire.
  - Construction activities may cause ignitions.
  - Future recreational use of the right-of-way may cause ignitions.
  - Contact between energized conductors and vegetation, or failure of Project components, may cause ignitions.
  - Ground disturbance associated with the Project may facilitate the spread of invasive plants, potentially altering fire ecology and behavior.
- The presence of the Project may affect the ability of land-management agencies to manage wildland fire for land-management plan objectives.
- The presence of the Project may add constraints to fire management planning, such as reducing the suitability of an area for fire as a vegetation treatment or narrowing the range of suitable conditions for conducting prescribed burns.
- The presence of the Project may positively or negatively affect fire suppression goals.
  - Fire suppression may be restricted or precluded near an energized transmission line for the safety of ground personnel and aircraft.
  - Vegetation management associated with a transmission line right-of-way may create a fuel break that could facilitate fire containment.

3.2.21.3.1 Regional Fire Ecology

Fire regimes are a measure of the average frequency of fires and their typical effects on the vegetation community. A fire cycle is the process of burning and regrowth through the occurrence of a subsequent fire, and the average length of that period is referred to as the fire return interval. Fire regimes are assigned to the following five fire regime groups, based on the fire return interval and typical severity. Vegetation communities typical of a given fire regime are noted as examples, although many of these communities can occur across a range of conditions (BLM n.d. [b]).

- Group I: Less than 35-year fire return interval, low and mixed severity
  - Ponderosa pine woodlands, some pinyon-juniper and sagebrush steppe communities
- Group II: Less than 35-year fire return interval, replacement severity
  - Grasslands, some shrub or shrub-steppe communities
- Group III: 35- to 200-year fire return interval, low and mixed severity
  - Some shrub-steppe and montane shrub communities
- Group IV: 35- to 200-year fire return interval, replacement severity
  - Some montane forests, including aspen, and some big sagebrush

- Group V: Greater than 200-year fire return interval, any severity
  - Sparsely vegetated or barren communities, including pinyon-juniper woodlands without continuous fine fuels

Grasslands are perhaps the most fire-dependent of vegetation communities in the Project area. When fire is prevented or suppressed in grasslands, higher shrub and tree survival may convert the landscape to shrub-steppe or juniper savanna. This process may be facilitated by selective foraging of grazing livestock. Fires historically occurred with lower frequency in big sagebrush and shrub-steppe communities but would typically take place at a stand-replacing intensity. Recovery of big sagebrush following a fire may take several decades before habitat features required by sagebrush-dependent wildlife are present (Baker 2006). However, exclusion of fire in some sagebrush-steppe communities appears to allow juniper encroachment (Miller and Rose 1999).

Moderately frequent, low-intensity fires maintained an open understory structure in Ponderosa pine and other montane woodlands. However, where fire suppression has allowed a buildup of ground fuels and small-diameter trees, fires now often take place at a higher stand-replacing intensity. These events do not typically occur in the study area to the extent that takes place elsewhere, such as the Sierra Nevada, Arizona, New Mexico, and central Colorado, where major montane fires are frequent. Ponderosa pine forests make up a relatively small portion of the Project area, as described in Section 3.2.5.

Riparian woodlands rarely burn; however, when fire-prone invasive species are present or during drought conditions, riparian areas can be more susceptible to fire. Fire in riparian systems followed by rainfall can result in high rates of erosion and downcutting of stream channels as occurred after the Diamond Creek Fire (Grand County, Utah) in the Project area in 2002 (Bissonette 2008). Downcutting of stream channels, whether as a result of fire or other erosion-inducing events, can lower the water table, slowing or preventing the recovery of riparian vegetation.

Nearly all of the Project area is in fire regime groups III to V, representing vegetation communities that typically experience very infrequent fires. Table 3-267 presents the total acreages of each fire regime group in the Project area.

TABLE 3-267
FIRE REGIME GROUPS IN THE PROJECT AREA
(PERCENT)

Area	Group I	Group II	Group III	Group IV	Group V	Other[1]
Wyoming	0.5	0.1	6.0	87.4	0.5	5.5
Colorado	4.2	0.0	37.5	47.2	8.1	3.0
Utah	6.9	0.0	31.1	30.6	18.5	13.0
Total (Project area)	4.4	0.0	25.1	51.3	10.8	8.5

SOURCE: Landscape Fire and Resource Management Planning Tools [LANDFIRE] 2012
NOTE: [1]This column includes land-cover classes where wildland fire is not likely to occur: Agriculture, Barren, Snow/Ice, Sparsely Vegetated, Urban, Not Calculated, and Water.

Vegetation Condition Class (VCC) is used to describe the current state of existing vegetation, relative to the assumed historical reference conditions. In the arid West, changes from reference conditions are often related to either increased or decreased fire frequency. Class 1 represents areas in the typical range of variability for the reference vegetation conditions; Class 2 represents a moderate departure from the reference vegetation conditions (deviating by more than one fire cycle); and Class 3 represents a major departure from reference vegetation conditions (deviating by two or more fire cycles). However, VCC does not describe the direction of the departure, whether fires have become more or less frequent. Table 3-268 presents the total acreages of each VCC in the Project area.

TABLE 3-268
VEGETATION CONDITION CLASSES IN THE PROJECT AREA
(PERCENT)

Area	Class 1	Class 2	Class 3	Other[1]
Wyoming	8.7	45.0	42.7	3.7
Colorado	29.0	56.9	10.4	3.7
Utah	19.7	38.8	31.2	10.3
Total (Project area)	18.5	44.8	20.9	6.8

SOURCE: Landscape Fire and Resource Management Planning Tools [LANDFIRE] 2012
NOTE: [1]Other includes areas where wildland fire would not occur: Agriculture, Barren, Snow/Ice, Sparsely Vegetated, Urban, Not Calculated, and Water. The area mapped as Other differs from that in Table 3-267 due to mapping differences in the source data, including the Not Calculated category.

VCC in the Project area is shown on Map 3-17. Lands mapped as Class 3, where fire regimes have changed to the greatest extent, are concentrated in the lower elevations of the Project area. Large areas mapped as Class 3 include much of the big sagebrush and shrub steppe communities in Wyoming, the Little Snake and Yampa river valleys in Colorado, and the Uinta Basin and valleys surrounding the San Rafael Swell in Utah. In some locations, these changes are driven by the spread of cheatgrass, which can cause frequent stand-replacing fires in big sagebrush and shrub-steppe communities, converting them to non-native annual grasslands. Fire-prone invasive plants introduced with agriculture and other human activities also may contribute to vegetation changes in many of the major river valleys in the Project area. Invasive species that support and benefit from fire may create positive feedback where increased fire frequency allows invasive plants to outcompete native plants that are less fire-tolerant (Zouhar et al. 2008). Most pinyon-juniper and montane vegetation communities are Class 1 or 2 and are closer to reference conditions than lower-elevation vegetation communities in the Project area.

The Geospatial Multi-agency Coordination Group maintains a nationwide fire history database that uses remote sensing infrared data as well as field reports to generate spatial data for wildfire perimeters and behavior. The following discussion refers to wildfires occurring in the Project area between 2000 (the first year of the mapping project and database) and 2014 (USFS 2011e, 2015a). Prescribed fires and some small or short-lived fires are not included in the database.

Per Geospatial Multi-Agency Coordination Group data, fires from 2000 to the end of the fire season in 2014 burned approximately 2.3 percent of the Project area. Few fires occurred in the Project area in Wyoming; a large number of smaller fires burned in Colorado where much of the vegetation is VCC 1 or 2; and fewer but much larger fires burned in Utah. Precipitation in the Project area was near or above normal in 2011 but below normal in 2012. Approximately 28 percent of the total acreage burned from 2000 to 2014 was a result of fires in 2012. The largest single fire in the Project area was the Diamond Creek fire of 2002, which burned approximately 88,400 acres in Grand County, Utah. Table 3-269 provides information about the acres burned and the numbers of fires from 2000 to 2012, as well as the average fire acreage.

TABLE 3-269
ACRES BURNED AND THE NUMBER OF FIRES IN THE PROJECT AREA

Area	Acres Burned from 2000 to 2014	Number of Fires from 2000 to 2014	Average Fire Acreage
Wyoming	2,626	21	125
Colorado	169,044	267	633
Utah	437,401	251	1,743
Project area	**609,071**	**539**	**1,130**