

3.2.10 Land Use

3.2.10.1 Introduction and Regulatory Framework

Land use resources include existing land use, future land use, 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 3.2.10.4). Other land use related resources in the Project area are identified and evaluated in the following sections:

- Parks, Preservation, and Recreation Resources (Section 3.2.11)
- Transportation and Access (Section 3.2.12)
- Special Designations and Other Management Areas (Section 3.2.13)
- Wilderness Areas, Wilderness Study Areas, and Non-wilderness Study Area Lands with Wilderness Characteristics (Section 3.2.14)
- Inventoried Roadless Areas and Unroaded/Undeveloped Areas (3.2.15)

3.2.10.1.1 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 occurring in the Project area are managed by direction provided in 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.

Within each respective state in the Project area, state-owned lands are managed under the Wyoming State Office of Lands and Investment, the Colorado State Land Board, and the SITLA as applicable. In addition, some State of Utah owned lands are managed by the UDWR, who also manage lands as WMAs (Section 3.2.13), 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 by CPW (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.

3.2.10.2 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; 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 identified in Tables 3-137 and 3-139.

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 3-137 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 Project alternative routes and route variations
Airports and landing strips	Towers interfering with airport and landing strip operations	Throughout the study corridors	All Project alternative routes and route variations
Commercial	Reduced property value	Throughout the study corridors	All Project alternative routes and route variations
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 Project alternative routes and route variations
Grazing allotments and rangeland areas (fences, cattle guards, other related infrastructure)	Project interference with grazing allotments and operation of associated infrastructure	Throughout the study corridors	All Project alternative routes and route variations
Industrial	Project interference with industrial land uses and operation	Throughout the study corridors	All Project alternative routes and route variations
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 impact 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 Project alternative routes and route variations

TABLE 3-137 EXISTING LAND USE ISSUES			
Issue Raised	Concern	General Location/Description	Relevant Alternative Routes
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 alternative routes and route variations
Oil and gas projects	Project impacting the Anadarko and Chevron oil and gas fields and the Greater Natural Buttes Project	Located in north-east Utah, south of the City of Vernal	All COUT BAX and COUT alternative routes and route variations
Pipeline projects (water and other resources)	Siting the Project near existing underground utilities and impacts on the property	Throughout the study corridors	All Project alternative routes and route variations
Prisons	Project crossing in proximity to the Wyoming State Penitentiary	South of Rawlins, Wyoming and Interstate 80	All WYCO alternative routes and route variations
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 Project alternative routes and route variations
Schools	Project in the vicinity of schools and other educational facilities	Throughout the study corridors	All Project alternative routes and route variations
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 alternative routes and route variations
Transportation and access	Siting the Project near existing transportation routes and additional access needed for the Project	Throughout the study corridors	All Project alternative routes and route variations

TABLE 3-137 EXISTING LAND USE ISSUES			
Issue Raised	Concern	General Location/Description	Relevant Alternative Routes
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 alternative routes
Project would be outside of designated utility corridor or in a corridor designated as underground or pipeline	If the Project is located outside of designated utility corridor crossing federal land, plan amendment may be required	Refer to Tables 3-165, 3-169, and 3-173) for information regarding Land Ownership, Parallel Linear Facilities, and Utility Corridors, related to the study corridors	All Project alternative routes and route variations

Issues Related to Future Land Use

TABLE 3-138 FUTURE LAND USE ISSUES			
Issue Raised	Concern	General Location/Description	Relevant Alternative Routes
Conflicts with future land use (proposed and planned 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 Project alternative routes and route variations
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 Project alternative routes and route variations
Conflicts with future reservoirs and water projects	Project could limit development of the Narrows Dam and Reservoir	Sanpete County, Utah	COUT BAX-E, COUT-H
Proposed nuclear power plant	Project could affect the proposed Blue Castle Holdings project	Near City of Green River, Utah	All COUT BAX alternative routes

Issues Related to Zoning and General Plan Management Direction

TABLE 3-139 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 Project alternative routes and route variations

3.2.10.3 Regional Setting

Diverse land uses occur in the Project area. Typical development patterns within 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 within the study corridors are federally administered lands, managed by the BLM or USFS.

3.2.10.3.1 Wyoming

The predominant land uses within 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.

3.2.10.3.2 Colorado

The study corridors within 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 within 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.

3.2.10.3.3 Utah

Similar to Colorado, the study corridors within 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 within 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, heavily wooded, and contains 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.

3.2.10.4 Study Methodology

This section discusses the study methodologies used for the major land use categories analyzed within the 2-mile-wide alternative route study corridors:

- Existing land use
- Future land use
- Zoning and general plan management direction

All land use categories were inventoried within 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 and 2011. Authorized projects were also 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 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 within the right-of-way are listed for each alternative. Authorized projects are also 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 that are 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 within 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 were also 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 3.2.13)
- 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
- 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; future land use; and zoning and general plan management direction, refer to MV-13 through MV-15. Further information on data inventoried is discussed below.

3.2.10.4.1 Inventory

This section discusses the inventory of land uses occurring within the 2-mile-wide alternative route study corridors. Although the following inventory lists many resources within 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 3.2.10.5.

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 within the 2-mile-wide alternative route study corridors are listed in Tables 3-140 and 3-142.

TABLE 3-140 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	–
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 3-141 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	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	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

TABLE 3-141 STATE LAND JURISDICTION AND OWNERSHIP	
Department	Management Responsibility
Utah Department of Transportation	State highways, roads, bridges, repairs, and maintenance
Utah Division of Wildlife Resources	State wildlife, hunting and fishing opportunities and wildlife management areas

TABLE 3-142 LOCAL LAND JURISDICTION AND OWNERSHIP	
County	Cities/Towns
Wyoming	
Carbon	Town of Hanna City of Rawlins
Sweetwater	None
Colorado	
Garfield	None
Mesa	None
Moffat	Town of Dinosaur
Rio Blanco	Town of Rangely
Routt	None
Utah	
Carbon	Helper City
Duchesne	Roosevelt City
Emery	City of Green River
Grand	None
Juab	Nephi City
Sanpete	Mount Pleasant City
Uintah	Town of Ballard
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 in the Results section (refer to Section 3.2.10.5). 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 2012a). 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 3.0 million acres of surface land and 4.0 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 3-143 displays the state trust lands found in the study corridors for the Project:

TABLE 3-143 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 are managed as state trust lands. Typical state trust land leases include rights-of-way, oil and gas leases, and coal and hard rock leases.	All WYCO alternative routes and route variations
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; Gulport Energy Corporation; QUP Energy Company; Yates Petroleum Corporation	All Project alternative routes and route variations
Bakers Peak	Used for hunting Pronghorn antelope, mule deer, elk, sage-grouse, rabbit, and coyote (12,393 acres)	WYCO-D, WYCO-D-1
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 alternative routes and route variations, except Alternative WYCO-D and Route Variation WYCO-D-1
Cedar Springs	Used for hunting Pronghorn antelope, mule deer, elk, and small game (640 acres)	WYCO-D, WYCO-D-1
Elk Springs #1	Used for hunting Pronghorn antelope, mule deer, mountain lion, and small game (640 acres)	All WYCO alternative routes and route variations

TABLE 3-143 STATE TRUST LANDS AND STATE INSTITUTIONAL TRUST LANDS ADMINISTRATION BY STATE		
Name	Description	Relevant Alternative Routes
Fortification	Exchange of use on the land, part private land and part state trust land; State trust land used for hunting cow elk only (866 acres)	WYCO-D, WYCO-D-1
Pole Gulch	Used for hunting big game and small game (11,026 acres)	WYCO-D, WYCO-D-1
Sagebrush Draw	Exchange of use on the land, part private land and part state trust land; state trust land used for hunting mule deer, elk, pronghorn antelope, rabbit, sage-grouse, and dove (640 acres)	All WYCO alternative routes and route variations
Simsberry Draw	Used for hunting elk, mule deer, pronghorn antelope, and small game (640 acres)	All WYCO alternative routes and route variations except Alternative WYCO-D and Route Variation WYCO-D-1
South Nipple Rim	Used for hunting elk, mule deer, pronghorn antelope, and coyote (19,962 acres)	All WYCO alternative routes and route variations except Alternative WYCO-D and Route Variation WYCO-D-1
Thornburg Draw	Used for hunting elk, mule deer, pronghorn antelope, and small game (640 acres)	WYCO-D, WYCO-D-1
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, WYCO-D-1
Yampa River	State trust land used for hunting mule deer, elk, grouse, and rabbit (2,006 acres)	WYCO-D, WYCO-D-1
Utah – State Institutional Trust Lands Administration		
Coal Contracts	One coal related contract or lease is crossed	COUT BAX-B, COUT BAX-C, COUT-I
Mineral Contracts	Mineral related contracts including limestone, potash metalliferous minerals, and humic shale; as few as 2 and as many as 13 leases occur along the various alternative routes	All COUT BAX and COUT alternative routes and route variations
Oil and Gas Contracts	Oil and gas related contracts and/or leases; as few as 72 and as many as 184 leases occur along the various alternative routes	All COUT BAX and COUT alternative routes and route variations
Oil Shale Contracts	27 oil shale related contracts and/or leases are crossed	COUT-C, COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, COUT-C-5, COUT-H, COUT-I
Range Improvement Contracts	These contracts include activities such as lop and scatter and stock watering lines; There are as few as 3 and as many as 7 leases that occur along the various alternative route	All COUT BAX alternative routes and COUT-C, COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, COUT-C-5, COUT-H, COUT-I
Sand and Gravel Contracts	Four sand and gravel contracts and/or leases are crossed	All COUT BAX alternative routes and COUT-I
Special Use Contracts	Special use contracts include industrial uses, development pre-designation, 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 and route variations

Parallel Linear Energy Facilities

Existing linear energy-related facilities in the study corridors include transmission lines and pipelines. Table 3-144 provides a description of the major transmission line rights-of-way (230kV and greater) relevant to the study corridors. Table 3-145 provides a description of the owners of the major pipelines (greater than 6 inches) paralleled by the Project (refer to Maps 2-1a, 2-1b, and Map 3-6 for the locations of these facilities.).

TABLE 3-144 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 alternative routes and route variations
Miners to Foote Creek 230kV	W22	WYCO-D, WYCO-D-1
Miners to Sinclair 230kV	W21, W22, W30, W35, W36	All WYCO alternative routes and route variations
Sinclair to Bar X 230kV	W30, W32, W101, W102, W109, W125, W128	All WYCO alternative routes and route variations
Hayden to Craig 230kV	C101, C105	WYCO-D, WYCO-D-1
Craig to Ault 345kV	C101, C105	WYCO-D, WYCO-D-1
Craig to Bears Ears 345kV	C101, C105	WYCO-D, WYCO-D-1
Craig to Rifle 230kV	C101, C105	WYCO-D, WYCO-D-1
Craig to Rifle 345kV	C101, C105, C106,	WYCO-D, WYCO-D-1
Bears Ears to Bonanza 345kV	C91, C92, C101, C105, C106, C170, C171, C172, C173, C174, C175, C177, C186, C187, C188, U242, U280, U285, U300	All Project Alternatives
Camp Williams to Sigurd Reroute 1 and 2 - 345kV	U650	All COUT BAX and COUT alternative routes and route variations
Mona to Bonanza 345kV	U241, U280, U285, U300, U310, U390, U391, U410, U420, U421, U424, U425, U426, U427, U428, U429, U430, U433, U539, U460, U621, U625, U631, U636, U637, U638, U639, U650	All COUT BAX and COUT alternative routes and route variations
Spanish Fork to Emery 345kV	U433, U460, U498, U530, U537, U539, U544, U548, U585, U586, U587, U600, U628, U731, U765	All COUT BAX and COUT alternative routes and route variations
Spanish Fork to Huntington 345kV	U433, U460, U498, U530, U537, U539, U544, U548, U585, U586, U587, U600, U628, U629, U765	All COUT BAX and COUT alternative routes and route variations
Mona to Huntington 345kV	U629, U630, U631, U636, U637, U638, U639, U650	All COUT BAX and COUT alternative routes and route variations
Mona to Intermountain 345kV	U650	All COUT BAX and COUT alternative routes and route variations
Mona to Oquirrh 500kV	U650	All COUT BAX and COUT alternative routes and route variations
Sigurd to Mona 345kV	U650	All COUT BAX and COUT alternative routes and route variations
Huntington to Pinto 345kV	U487, U488, U498, U628, U629, U728, U729, U730, U732, U733, U734, U765	All COUT BAX alternative routes, COUT-I
Huntington to Emery 345kV	U498, U628, U629, U731, U765	All COUT BAX alternative routes and COUT-I

TABLE 3-145 OWNERS OF MAJOR PIPELINES PARALLELED BY THE ALTERNATIVE ROUTES												
Owner	Relevant Alternative Routes											
	WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D and Route Variation	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A and Route Variation	COUT-B and Route Variations	COUT-C and Route Variations	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

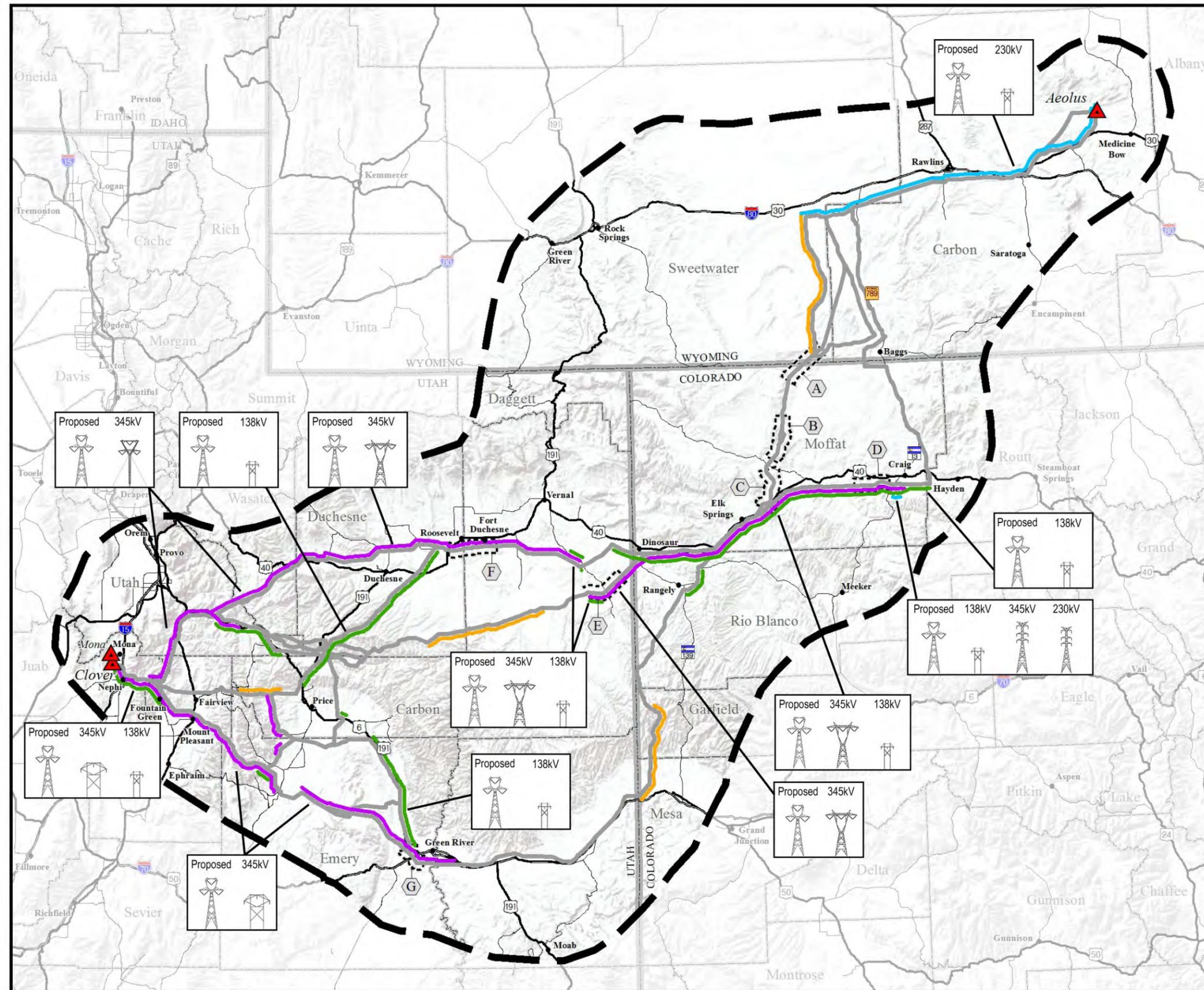
There are two types of designated utility corridors in the study corridors: the DOE WWEC and individual federal agency RMP corridors. These corridors are shown on Maps 2-1a and 2-1b.

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 15926⁴, 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 Fillmore Field office did not amend the House Range RMP, due to a moratorium on planning.

⁴ P.L. 109-58, title III, §368, Aug. 8, 2005, 119 Stat. 727.



Map 3-6
Alternative Routes Parallel to Existing Transmission Lines or Pipelines

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Alternative Routes Parallel to Existing Transmission Lines or Pipelines¹

- 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
- ⊙ Series Compensation Station Siting Area
- ▲ Substation (Project Terminal)

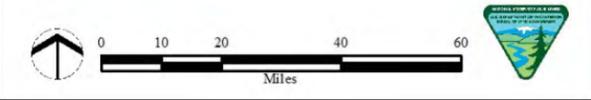
General Reference

- City or Town
- Interstate Highway
- ▭ State Boundary
- U.S. Highway
- ▭ County Boundary
- State Highway

SOURCES:
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009; Series Compensation Station Siting Areas, Rocky Mountain Power 2013; City or Town, ESRI 2010; State and County Boundaries, ESRI 2008; National Transportation Atlas Database, USDOT 2008; Utah Highways and Roads, AGRC 2012

NOTES:
¹Alternative 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: April 1, 2013
DRAFT EIS: February 2014



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-fired power in the West and, in several areas, ignored or underserved renewable energy resources (DOE and BLM 2008).

The settlement requires that 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 that are currently located within the corridors of concern (Table 3-146) will require additional assessment to ensure all impacts are addressed. Other Project alternative routes are being analyzed in addition to the alternative routes within the WWECs.

TABLE 3-146 WEST-WIDE ENERGY CORRIDORS OF CONCERN COINCIDING WITH PROJECT ALTERNATIVE ROUTES			
Concern(s)	General Location	Relevant Alternative Routes	Reason for Locating Alternative Route within 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 Wilderness Study Area, Utah-proposed Wilderness, critical habitat; adjacent to Arches National Park	Grand and Carbon counties, Utah	All COUT BAX alternative routes, COUT-B-5, COUT-C-5, COUT-H, COUT-I	To be located within Moab and Price Field Offices 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 and COUT-B alternative routes and route variations	To parallel existing 345kV transmission line
Corridor Number 66-259			
Access to coal-fired power plant	Wasatch and Utah counties, Utah	COUT-A, COUT-A-1	To be located within Salt Lake Bureau of Land Management Field Office and Uintah National Forest designated utility corridor/window and parallel existing 345kV transmission line
SOURCE: Exhibit A to Settlement Agreement, <i>The Wilderness Society et al. v. United States Department of the Interior et al.</i> , 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 and 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 WVECs, the BLM and USFS have utility corridors designated under their related RMPs and LRMPs. Within 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 and Price 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 overhead utilities only, underground utilities only, and overhead and underground utilities. These corridors are shown on Maps 2-1a and 2-1b.

Existing Land Use

General Developed Land Uses

Table 3-147 lists the types of general development within the 2-mile-wide alternative route study corridors by alternative that could potentially be affected by the Project.

TABLE 3-147 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 Project alternative routes and route variations
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 Project alternative routes and route variations
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 Project alternative routes and route variations
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 Project alternative routes and route variations

TABLE 3-147 GENERAL DEVELOPED LAND USES		
Type of Development	Description	Relevant Alternative Routes
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 utilizing irrigation, spraying for weeds, etc.)	All Project alternative routes and route variations
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 Project alternative routes and route variations
Residential Mixed Use (Authorized)	Residential Mixed Use (Authorized) in the study corridors includes subdivisions that have been authorized and are moving forward with construction.	All COUT BAX and COUT alternative routes and route variations
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, WYCO-D-1, all COUT BAX, and all COUT alternative routes and route variations
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 Project alternative routes and route variations
NOTE: ¹ For the purpose of this inventory, residential densities were defined as: <ul style="list-style-type: none"> • 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 		

Authorized Projects

Authorized Residential/Mixed-use Residential Subdivisions

Table 3-148 lists authorized residential and mixed-use residential subdivisions within the 2-mile-wide alternative route study corridors by alternative that could potentially be affected by the Project.

TABLE 3-148 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, located on the western edge of the City of Roosevelt	COUT-A and COUT-B alternative routes and route variations

TABLE 3-148 AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS		
Subdivision Name	Description¹	Relevant Alternative Routes
Arch View Ranchettes Subdivision	5 lots for mixed-use residential and recreational development located approximately 15 miles west of the City of Duchesne; no residences have been built to date	COUT-A, COUT-A-1
Brad Knight Subdivision	5 lots to be used for residential development with 4 existing residences, approximately 2 miles south of Roosevelt City	COUT-A and COUT-B and route variations
Castle Gate Addition Subdivision	Residential subdivision that a majority of the lots have been built out, located 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, COUT-A-1
Cedar Mountain No. 8 Subdivision	33 lots of mixed-use residential and recreational development approximately 6 miles west of Duchesne	COUT-A, COUT-A-1
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, COUT-A-1
Clear Creek Subdivision	Residential subdivision located approximately 4 miles south of the Town of Scofield	COUT BAX-E, COUT-H
Dale Gines Subdivision	10 lots of residential development with 5 existing residences located approximately 6 miles north of Duchesne	COUT-A, COUT-A-1
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 alternative routes and route variations
Deer Field Subdivision	8 lots of residential development with 1 existing residence approximately 25 miles west of Duchesne	COUT-A, COUT-A-1
Elk Tracks at Golden Eagle Subdivision	Mixed-use residential development with a few existing structures located approximately 5 miles northwest of Duchesne	COUT-A, COUT-A-1
Fitch's Subdivision	Residential subdivision located on the western portion of the city limits of Helper	COUT-H

TABLE 3-148 AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS		
Subdivision Name	Description¹	Relevant Alternative Routes
Fruitland Ranchettes Subdivision	4 lots of residential development, with 1 existing building being used as sales office approximately 5 miles northwest of Duchesne	COUT-A, COUT-A-1
Giocoletto Subdivision	Residential subdivision located on the northern portion of the city limits of Helper	COUT-H
Golden Eagle Subdivision	9 40-acre lots, one existing residence; located approximately 24 miles west of Duchesne	COUT-A, COUT-A-1
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, COUT-A-1
Hidden Meadow Subdivision	38 lot residential development with 1 existing residence and a large riding arena, approximately 24 miles west of Duchesne	COUT-A, COUT-A-1
Highland Estates Subdivision	9 lot residential development, approximately 1 acre each with 5 existing residences; approximately 2 miles south of Roosevelt City	COUT-A and COUT-B and route variations
Ioka Meadows Subdivision	12 lot residential development with 6 existing residences; approximately 2 miles southwest of Roosevelt City	COUT-A and COUT-B and route variations
Lazy JP Ranchettes Subdivision	14 lot residential development with 2 existing residences; approximately 23 miles west of Duchesne	COUT-A, COUT-A-1
Ledge Rock Cove Subdivision	6 lot residential development with 3 existing residences; approximately 6 miles west of Roosevelt City	COUT-A, COUT-A-1
Moondance Ranch Phases I and II Subdivision	Residential and recreational development, 40-acre lot size; located approximately 6 miles southeast of Duchesne	COUT-B and route variations
Mount Baldy Subdivision	Residential development with existing structures; located approximately 7 miles northeast of Fountain Green	COUT-A, COUT-B, and COUT-C and route variations
New Helper Townsite Subdivision	Residential development located on the northern portion of the city limits of Helper	COUT-H
Pheasant Run Subdivision	11 lots of residential development, approximately 1-acre lots; located approximately 3 miles from Roosevelt City	COUT-A and COUT-B and route variations

TABLE 3-148 AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS		
Subdivision Name	Description¹	Relevant Alternative Routes
Soldier Summit Estates Subdivision	Residential development with 1 existing residence; located approximately 13 miles north of Scofield	COUT-A, COUT-B, and COUT-C and route variations
River Breeze Estates Subdivision	4 lots of residential development; 1 existing residence located approximately 5 miles north of Duchesne.	COUT-A, COUT-A-1
Robbers Roost Subdivision	46 lots, with 4 developed lots, mainly vacant; located approximately 25 miles west of Duchesne	COUT-A, COUT-A-1
Silver Moon Subdivision	Residential and recreational subdivision with a few existing structures; located approximately 5 miles southeast of Duchesne	COUT-B and route variations
Sundown Ridge Subdivision	25 lot residential development with 12 existing residences; located approximately 26 miles west of Duchesne	COUT-A, COUT-A-1
Sunrise Estates	34 lots with 12 developed lots and 2 existing residences; located approximately 4 miles southwest of Roosevelt City	COUT-A and COUT-B and route variations
Tabby Shadows Subdivision	Residential and recreational subdivision with a few existing structures; located approximately 15 miles west-northwest of Duchesne	COUT-A, COUT-A-1
Uintah Haven Subdivision	8 lot residential development with no existing structures; located approximately 5 miles north of Duchesne	COUT-A, COUT-A-1
Valle Del Padre Subdivision	Residential and recreational subdivision; located approximately 25 miles west of Duchesne	COUT-A, COUT-A-1
View Subdivision	Residential (1/2-acre lot size) subdivision; located approximately 2 miles south of Roosevelt City	COUT-A and COUT-B and route variations
Vista Valley Subdivision	Residential (1/5-acre lot size) and recreational development with a few existing structures; located approximately 18 miles west of Duchesne	COUT-A, COUT-A-1
Vonsville Subdivision	Residential and commercial development; located approximately 1 mile southwest of Roosevelt City	COUT-A and COUT-B and route variations

TABLE 3-148 AUTHORIZED RESIDENTIAL AND MIXED-USE RESIDENTIAL SUBDIVISIONS		
Subdivision Name	Description¹	Relevant Alternative Routes
Wasatch Meadow Subdivision	11 lots of residential development with 1 existing residence; located approximately 26 miles west of Duchesne	COUT-A, COUT-A-1
West Star Properties Subdivision	Mixed-use residential development with 3 lots and one existing residence; located approximately 20 miles west of Duchesne	COUT-A, COUT-A-1
Young Meadows Subdivision	31 lot residential development with 2 existing residences; located approximately 20 miles west of Duchesne	COUT-A, COUT-A-1
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 3-149 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 in Section 3.2.10.5.

TABLE 3-149 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 alternative routes and route variations
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 and route variations
Bill Barrett Corporation Blacktail Ridge Exploration and Development Agreement	Oil and/or gas development west of Duchesne, Utah	COUT-A, COUT-A-1
Bill Barrett Corporation Lake Canyon Exploration and Development Agreement	Oil and/or gas development south of Fruitland, Utah	COUT-A, COUT-A-1
Blue Mountain Energy Inc. Deserado Mine	Coal mine near the Moffat and Rio Blanco county lines	All COUT BAX 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

TABLE 3-149 AUTHORIZED PROJECTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR		
Project Name	Description	Relevant Alternative Routes
Encana North Chapita Wells Natural Gas Development	Oil and/or gas development 6 miles northwest of Bonanza, Utah	COUT-C and route variations, COUT-H, COUT-I
Enterprise Mid-America Pipeline Western Expansion II Project	Pipeline that crosses Baxter Pass in Colorado and turns west and proceeds along Interstate 70 to Thompson Springs, Utah	All COUT BAX alternative routes
EOG Resources Inc. Chapita Wells-Stagecoach Area Natural Gas Development	Oil and/or gas development 10 miles southeast of Ouray, Colorado	COUT-C and route variations, COUT-H, COUT-I
Flatirons Resource LLC No. 1-4 Helium Well Project Pipeline	Industrial pipeline 15 miles southwest of Mack, Colorado	All COUT BAX alternative routes
Gasco Energy Inc. Uinta Natural Gas Development Project	Oil and/or gas development T9-11S, R14-19E	COUT-C and route variations, 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 and route variations, COUT-H, COUT-I
Newfield Gusher Development	Oil and/or gas development 5 miles northeast of Randlett, Utah	COUT-A and COUT-B and route variations
Coal and Non-Coal Mine Development	Throughout the Wyoming and Utah portion of the Project Study Area	All Project alternative routes
Oil and gas development leases (BLM)	Throughout the Bureau of Land Management (BLM) White River Field Office	All WYCO alternative routes and route variations and all COUT BAX alternative routes
	Throughout the BLM Little Snake Field Office	WYCO-D, WYCO-D-1
	Throughout the BLM Grand Junction Field Office	All COUT BAX alternative routes
	Throughout the BLM Vernal Field Office	All COUT alternative routes
	Throughout the BLM Richfield Field Office	All COUT BAX alternative routes, COUT-H, and COUT-I
	Throughout the BLM Price Field Office	All COUT BAX alternative routes, COUT-H, and COUT-I
	Throughout the BLM Moab Field Office	All COUT BAX alternative routes
Oil and gas development leases (State)	Throughout the Wyoming portion of the Project Study Area	All WYCO alternative routes and route variations
	Throughout the Colorado portion of the Project Study Area	All WYCO alternative routes and route variations and all COUT alternative routes and route variations

TABLE 3-149 AUTHORIZED PROJECTS IN THE ALTERNATIVE ROUTE STUDY CORRIDOR		
Project Name	Description	Relevant Alternative Routes
Oil and gas development leases (State)	Throughout the Utah portion of the Project Study Area	All COUT alternative routes and route variations and all COUT BAX alternative routes
Oil Shale and/or Tar Sands development leases	Throughout the Utah portion of the Project Study Area	COUT-C and route variations, COUT-H, COUT-I
PacifiCorp Seven Mile Hill Wind Energy Facility	Wind energy facility 42 miles northeast of Rawlins, Wyoming	All WYCO alternative routes and route variations
PacifiCorp Standpipe Substation	Substation 2 miles southeast of Hanna, Wyoming	WYCO-D, WYCO-D-1
Petro-Canada Resources (USA) Inc. Rye Patch Environmental Assessment	Oil and/or gas development 21 miles south of Duchesne, Utah	COUT-C and route variations, COUT-H, COUT-I
Power Company of Wyoming Chochecherry and Sierra Madre Wind Farm	Wind energy facility south of Interstate 80 and Rawlins, Wyoming	WYCO alternative routes and route variations
Questar Exploration and Production Company Greater Deadman Bench	Oil and/or gas development 8 miles northeast of Ouray, Colorado	COUT-A and COUT-B and route variations
Roosevelt Pipeline	Pipeline which extends from Roosevelt, Utah, to the west 9 miles	COUT-A, COUT-A-1
Seep Ridge Road	Highway/road from Ouray, Colorado to Uintah county line	COUT-C and route variations, 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
White Sands Missile Launch Facility	Military training/testing site near Green River, Utah	All COUT BAX alternative routes
XTO Energy Riverbend Directional Infill	Oil and/or gas development T10S, R19-20E	COUT-C and route variations, COUT-H, COUT-I

Grazing Allotments

Grazing allotments cover large areas of BLM- and USFS-administered lands within 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 2012b). 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 2012b).

USFS range management objectives are similar to BLM objectives, with the earliest publication of grazing controls on USFS land dating back to 1905. USFS (2005) 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 3-150 identifies the grazing allotments by jurisdiction.

TABLE 3-150 GRAZING ALLOTMENTS WITHIN 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	56	1,870,978	374,511	All WYCO alternative routes and route variations
Wyoming State Land				
Wyoming Office of State Lands and Investments	29	18,934	12,312	All WYCO alternative routes and route variations
Colorado Bureau of Land Management Field Offices				
Grand Junction Field Office	3	120,607	26,971	All COUT BAX alternative routes
Little Snake Field Office	40	585,230	120,340	All WYCO alternative routes and route variations
White River Field Office	24	780,338	121,757	All Project alternative routes and route variations
Colorado State Land				
Colorado State Land Board	140	53,010	36,384	All WYCO alternative routes and route variations
Utah Bureau of Land Management Field Offices				
Fillmore Field Office	2	5,823	620	All COUT BAX and COUT alternative routes and route variations
Moab Field Office	13	774,382	93,988	All COUT BAX alternative routes
Richfield Field Office	4	9,174	8,300	All COUT BAX and COUT alternative routes and route variations

TABLE 3-150 GRAZING ALLOTMENTS WITHIN THE ALTERNATIVE ROUTE STUDY CORRIDOR				
Managing Agency	Number of Allotments Crossed by Project	Total Allotment Acres	Total Acres Affected by Project	Relevant Alternative Routes
Price Field Office	66	800,095	268,847	All COUT BAX alternative routes and Alternatives COUT-H and COUT-I
Salt Lake Field Office	4	956	665	COUT-A, COUT-B, and COUT-C and route variations
Vernal Field Office	34	1,030,783	169,174	All COUT alternative routes and route variations
Utah State Land				
State Institutional Trust Lands Administration	119	188,602	111,205	All COUT BAX and COUT alternative routes and route variations
National Forests				
Ashley National Forest	10	134,626	24,649	All COUT alternative routes and route variations
Manti-La Sal National Forest	29	216,149	44,659	All COUT BAX alternative routes, COUT-A, COUT-A-1, COUT-H, COUT-I
Uinta National Forest	13	190,219	31,219	All COUT BAX and COUT alternative routes and route variations
NOTE: The unit in Uinta-Wasatch-Cache National Forest called “Watershed Closure” is not included in the numbers above. The unit in the White River Field Office called “Unallotted” is also not included in the numbers above.				

Communication Facilities

Numerous types of communication facilities, including Antenna Structure Registration, cellular towers, FM radio towers, LM communication towers, LM private communication towers, microwave towers, TV NTSC towers, and other communication facilities were identified during the detailed land use inventory (Table 3-151, MV-13). Communication facilities are owned and operated by several public and private companies.

TABLE 3-151 COMMUNICATION FACILITIES BY STATE																																									
Link	Number of Facilities	Relevant Alternative Routes																																							
		WYCO-B	WYCO-B-1	WYCO-B-2	WYCO-B-3	WYCO-C	WYCO-C-1	WYCO-C-2	WYCO-C-3	WYCO-D	WYCO-D-1	WYCO-F	WYCO-F-1	WYCO-F-2	WYCO-F-3	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-A-1	COUT-B	COUT-B-1	COUT-B-2	COUT-B-3	COUT-B-4	COUT-B-5	COUT-C	COUT-C-1	COUT-C-2	COUT-C-3	COUT-C-4	COUT-C-5	COUT-H	COUT-I							
C13	5				✓					✓	✓																														
C172	7				✓					✓					✓																										
C173	7	✓	✓			✓	✓																																		
C174	7	✓	✓		✓	✓	✓																																		
C175	7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																											
C177	3														✓	✓	✓																								
C185	22														✓	✓	✓																								
C186	2																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
C187	3																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
C195	21														✓	✓	✓																								
C196	9														✓	✓	✓																								
C197	9														✓	✓	✓																								
C31	1	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓																											
C93	7			✓						✓			✓																												
Utah																																									
U241	5																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
U242	1																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
U280	3																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
U285	3																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
U300	11																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
U310	1																			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
U400	6																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U401	7																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U410	16																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U420	6																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U421	1																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
U425	1																											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

		TABLE 3-151 COMMUNICATION FACILITIES BY STATE																																					
Link	Number of Facilities	Relevant Alternative Routes																																					
		WYCO-B	WYCO-B-1	WYCO-B-2	WYCO-B-3	WYCO-C	WYCO-C-1	WYCO-C-2	WYCO-C-3	WYCO-D	WYCO-D-1	WYCO-F	WYCO-F-1	WYCO-F-2	WYCO-F-3	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-A-1	COUT-B	COUT-B-1	COUT-B-2	COUT-B-3	COUT-B-4	COUT-B-5	COUT-C	COUT-C-1	COUT-C-2	COUT-C-3	COUT-C-4	COUT-C-5	COUT-H	COUT-I					
U426	7																	<	<																				
U427	3																		<	<																			
U430	8																				✓	✓	✓	✓	✓	✓													
U435	9																																			✓			
U460	8																	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
U486	35														✓	✓	✓																						
U487	22														✓	✓	✓																						
U488	7															✓	✓	✓																			✓		
U489	12																																						
U490	9																																						
U492	1																																				✓		
U493	1																																				✓	✓	
U494	3																																				✓	✓	
U495	2																																				✓	✓	
U496	1																																					✓	
U511	4																						✓	✓			✓			✓	✓	✓							
U513	4																						✓	✓					✓	✓	✓								
U515	2																						✓	✓		✓			✓	✓			✓						
U516	3																										✓										✓		
U520	4																							✓			✓			✓	✓								
U524	1																							✓				✓											
U527	8																							✓				✓											
U530	9																						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
U537	1																																					✓	
U539	11																							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
U544	2																																						
U545	22																																					✓	

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 3-152 provides a description of the allowable collection of forestry and woodland products on the lands managed by each agency’s RMP.

TABLE 3-152 FORESTRY AND WOODLAND PRODUCTS BY STATE			
Managing Agency	Plan Source Information	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 within the 1.3 million acres managed by the Little Snake Field Office	Firewood, Christmas trees, and timber
BLM White River Field Office	White River RMP	27,000	Timberland – A total of 400 acres would be available for harvest at a 100-year rotation rate. Woodland – A total of 27,600 acres would be 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	Controls harvest of forest and woodland products through permitting. Permits will specify area, timing, and type of product according to the prescriptions of the Forest and Woodlands Management Plan.	Fuel-wood, timber, posts, nuts, and Christmas trees
BLM Richfield Field Office	Richfield RMP	Provide 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 non-Wilderness Study Area lands with wilderness characteristics (78,600 acres), and suitable Wild and Scenic River corridors would be closed to commercial and noncommercial use of forest and woodland products.	Fuel-wood, timber, posts, pine nuts, and Christmas trees

TABLE 3-152 FORESTRY AND WOODLAND PRODUCTS BY STATE			
Managing Agency	Plan Source Information	Acres Available	Products
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 shall not be allowed anywhere on public land within the Pony Express Resource Area except for maintenance practices such as thinning, disease control, wildlife improvements, and watershed enhancement. The harvest of pinyon pine for use as Christmas trees, either commercially or individually, shall be at the discretion of the Authorized Officer. All other areas of juniper forest on public land within the Pony Express Resource Area shall 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.	Christmas trees, firewood, fence posts
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 will be implemented primarily to address forest health concerns, such as insect and disease infestations and hazardous fuels.

Minerals and Mining

There are many types of mineral and mining operations within 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 within 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 are also present in the study corridors. Claims would be identified once a preferred route is selected.

Superfund and Hazardous Waste Sites

A superfund site is identified by the Environmental Protection Agency (EPA) as an uncontrolled or abandoned place where hazardous waste is located which may possibly affect local ecosystems or people. There are no EPA listed superfund or hazardous waste sites located within the 2-mile-wide alternative route study corridors (EPA 2012g).

Future Land Use

Future land uses within 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 3-153 and include both approved and proposed projects. For subdivisions that are partially built out, the number of structures that were existing as of November 2011 also are mentioned in the table.

TABLE 3-153 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 terminate in Nevada	All Project alternative routes and route variations
Gateway West Transmission Project	A proposed approximately 1,000-mile long, 500-kilovolt 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 alternative routes and route variations
Wyoming		
BP Continental Divide-Creston Natural Gas Project	Oil and/or gas development 25 miles west of Rawlins, Wyoming within Carbon and Sweetwater counties	All WYCO alternative routes and route variations
Rosebud Mine	Proposed coal mine northeast of the Town of Hanna, Wyoming; proposed by Ambre Energy; exploratory drilling planned in the existing re-claimed mine area	All WYCO alternative routes and route variations

TABLE 3-153 FUTURE LAND USE BY STATE		
Project Name	Description of Project	Relevant Alternative Route(s)
Whirlwind I	Wind energy facility 2 miles southwest of Rawlins, Wyoming	All WYCO alternative routes and route variations
Colorado		
Clouse No. 1 and No. 2 Simple Land Divisions	Proposed land division in Mesa County; Clouse No. 1 exemption plat is directly attached to Clouse No. 1 Simple Land Division	All COUT BAX alternative routes
Utah		
Bill Barrett Corporation Blacktail Ridge	Oil and/or gas development in Duchesne County, eight miles east of Fruitland, Utah, and two miles north of U.S. Highway 40	COUT-A, COUT-A-1
Duchesne County Victory Pipeline	Approximately 29 miles long; a water pipeline in Duchesne County; Designed to transport water from the Starvation Reservoir Water Treatment Plant to Roosevelt, Utah	All COUT-A and COUT-B route variations
Emery County Potential Wind Farm	Location of possible wind farm in Emery County	COUT BAX-C
Flat Canyon Coal Lease Tract	Coal mine 5 miles west of Clear Creek, Utah	COUT BAX-E, COUT-H
Green River Industrial	Utah School and Institutional Trust Lands Administration lease for the Blue Castle Project, a proposed 2-unit nuclear power plant near the City of Green River	All COUT BAX alternative routes
Juab County Loop Road	Proposed loop/belt route type extension for Interstate 15	All COUT BAX and COUT alternative routes and route variations
Mona South Pumped Storage Project	Pumped storage project located in Wide Canyon, 4 miles southwest of Mona, Utah	All COUT BAX and COUT alternative routes and route variations
Narrows Proposed Reservoir and associated facilities	Bureau of Reclamation and Sanpete Water Conservancy District proposed this reservoir and associated facilities; approximately 669 acres	All COUT BAX alternative routes, COUT-H, COUT-I
Shalom Fuels Project	Vegetation management project 3 miles west of Clear Creek, Utah	COUT BAX-E, COUT-H
Sheep Creek Trail	Recreation trail located 9 miles east of Thistle, Utah	All COUT alternative routes and route variations
Strawberry Highlands Subdivision	Residential subdivision with a golf course; located approximately 30 miles west of Duchesne	COUT-A, COUT-A-1
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
Woodside Carbon Sequestration Site	Potential carbon-sequestration site and associated facilities	COUT BAX-C, COUT BAX-E, COUT-H

Zoning and General Plan Management Direction

To determine management direction from local municipalities within the study corridor, general/comprehensive plan and zoning ordinances were reviewed. Zoning and general plan uses, within 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 within the 2-mile-wide alternative route study corridors reviewed for data inventory. Cities within the alternative route study corridors are located under the applicable County their within. 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 within the 2-mile-wide alternative route study corridors are listed in Table 3-154.

Energy Zones

Several counties in the Project Study Area have created energy zones within their jurisdictions to maximize efficient and responsible development of energy and mineral resources. Uintah, Carbon, 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 within this EIS because they are irrelevant to the proposed action.

TABLE 3-154 ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE WITHIN 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-B-1	WYCO-B-2	WYCO-B-3	WYCO-C	WYCO-C-1	WYCO-C-2	WYCO-C-3	WYCO-D	WYCO-D-1	WYCO-F	WYCO-F-1	WYCO-F-2	WYCO-F-3	COU BAX-B	COU BAX-C	COU BAX-E	COU T-A	COU T-A-1	COU T-B	COU T-B-1	COU T-B-2	COU T-B-3	COU T-B-4	COU T-B-5	COU T-C	COU T-C-1	COU T-C-2	COU T-C-3	COU T-C-4	COU T-C-5	COU T-H	COU T-I	
Wyoming																																			
Carbon County Zoning Resolution (2004, 2009, 2010, and 2011)																																			
C-1 (Neighborhood Commercial)	Commercial										✓	✓																							
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																						
Colorado																																			
Garfield County Land Use Resolution (2008)																																			
PL (Public Lands)	Public/Quasi-public																✓	✓	✓																
R (Rural)	Residential																✓	✓	✓																
Mesa County Land Development Code (2011)																																			
LL R/A 35+ (Large lot, residential/agricultural, 35+ acres)	Agriculture																✓	✓	✓																
R/A 35+ (Large lot residential/agriculture)	Agriculture																✓	✓	✓																
The Moffat County Zoning and Resolution Map (1995)																																			
A (Agriculture)	Agriculture	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
B (Business)	Commercial										✓	✓								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
HI (Heavy Industrial)	Industrial										✓	✓																							
LI (Light 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																✓	✓	✓																
Native	Parks/Preservation																✓	✓	✓																
Suburban	Residential																✓	✓	✓																
Town	Residential																✓	✓	✓																
Urban	Residential																✓	✓	✓																
Rio Blanco County Land Use Resolution (2002)																																			
A (Agriculture)	Agriculture																✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MC (Mixed Commercial)	Commercial																✓	✓	✓																

TABLE 3-154 ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE WITHIN 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-B-1	WYCO-B-2	WYCO-B-3	WYCO-C	WYCO-C-1	WYCO-C-2	WYCO-C-3	WYCO-D	WYCO-D-1	WYCO-F	WYCO-F-1	WYCO-F-2	WYCO-F-3	COU BAX-B	COU BAX-C	COU BAX-E	COU-T-A	COU-T-A-1	COU-T-B	COU-T-B-1	COU-T-B-2	COU-T-B-3	COU-T-B-4	COU-T-B-5	COU-T-C	COU-T-C-1	COU-T-C-2	COU-T-C-3	COU-T-C-4	COU-T-C-5	COU-T-H	COU-T-I			
R (Residential, Residential High Density, Residential Medium Density)	Residential															✓	✓	✓																			
RR (Rural Residential)	Residential															✓	✓	✓																			
Utah																																					
Ballard City Land Use Ordinances (2009)																																					
A (Agriculture)	Agriculture																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
OS (Open Space)	Parks/Preservation																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
HI (Heavy Industrial)	Industrial																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
MI (Medium Industrial)	Industrial																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
MUI (Mixed Use)	Mixed Use																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
LDR (Low Density Residential)	Residential																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
LMDR (Low to Medium Density Residential)	Residential																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
MDR (Medium Density Residential)	Residential																		✓	✓	✓	✓	✓	✓	✓	✓	✓										
RR (Rural 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																																		✓		
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																																			✓	✓
1 Acre Zone	Residential																																			✓	✓
Industrial	Industrial																																			✓	✓
Native American Reservations; Authority possessed by tribe	Not included in the generalized zoning layer																																		✓	✓	

TABLE 3-154 ZONING AND GENERAL PLAN MANAGEMENT DIRECTION BY STATE WITHIN 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-B-1	WYCO-B-2	WYCO-B-3	WYCO-C	WYCO-C-1	WYCO-C-2	WYCO-C-3	WYCO-D	WYCO-D-1	WYCO-F	WYCO-F-1	WYCO-F-2	WYCO-F-3	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A	COUT-A-1	COUT-B	COUT-B-1	COUT-B-2	COUT-B-3	COUT-B-4	COUT-B-5	COUT-C	COUT-C-1	COUT-C-2	COUT-C-3	COUT-C-4	COUT-C-5	COUT-H	COUT-I	
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																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Wasatch County Land Use and Development Code (2004)																																			
HS (Highway Services)	Commercial																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
P-160 (Preservation)	Parks/Preservation																		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
SR (Strawberry Recreation Zone)	Residential Mixed Use																		✓	✓															

3.2.10.4.2 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)
- Increased access into areas not suitable for vehicular travel due to new access roads constructed for the Project (long-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)
- Diminishment of open space in areas zoned for open space conservation, as well as non-designated open space 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 3-155 to 3-157). The assessment of impacts on each category of existing land use, future land use, and zoning and general plan management direction 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 associated with implementing the Project generally includes:

- Identifying the types of potential effects on existing land use, future land use, and zoning and general plan management direction that could result from construction, operation, and maintenance of the proposed transmission line and associated facilities
- Classifying the relative level of impacts on existing land use, future land use, and zoning and general plan management direction to potential environmental effects
- Developing criteria for assessing the level of a potential effect on existing land use, future land use, and zoning and general plan management direction
- Assessing the initial impacts on the existing land use, future land use, and zoning and general plan management direction
- 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 existing land use, future land use, and zoning and general plan management direction (refer to Tables 3-155 to 3-157 for details)

Existing Land Use

TABLE 3-155 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON EXISTING LAND USE	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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 3-156 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON FUTURE LAND USE	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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

TABLE 3-157 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON ZONING AND GENERAL PLAN MANAGEMENT DIRECTION	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ▪ Areas where the project would conflict with specific applicable adopted policy or goals of the affected land-management agency (on a case-by-case basis)
Moderate	<ul style="list-style-type: none"> ▪ Areas where the Project would require new right-of-way or expansion of the existing right-of-way area in areas zoned or designated for residential, public/quasi-public, school/educational, parks/preservation, or air facility use
Low	<ul style="list-style-type: none"> ▪ Areas with compatible uses, such as linear features or existing or proposed utilities ▪ Areas where the Project would not conflict with zoning or general plan designations
<p>NOTE: Impacts analyzed for zoning and general plan management direction are reported in the Results section. The potential impacts relate to the generalized definitions of the zone or general plan designation found within each municipality's zoning ordinance or general/comprehensive plan. Other uses may occur or be allowed on the land within these zones or designations (e.g., residences located within 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.</p>	

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 3-155 to 3-157.

Mitigation Planning and Effectiveness

In addition to the design features of the proposed action (Table 2-8), selective mitigation measures (Table 2-13) would also be used to minimize adverse impacts on land use resources; these are described in Tables 3-158 to 3-160.

TABLE 3-158 SELECTIVE MITIGATION FOR EXISTING LAND USE		
Mitigation Number	Description of Mitigation	Example of Application
1	Minimize disturbance to sensitive soils and vegetation	Existing access roads/trails would not be widened or otherwise upgraded for construction and maintenance in areas where soils and vegetation are particularly sensitive to disturbance such as farmland, irrigated farmland, and center-pivot farmland
6	Tower design modification	Used to address site-specific constraints on airports, airstrips, heliports, and other air facilities
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 3-159 SELECTIVE MITIGATION FOR FUTURE LAND USE		
Mitigation Number	Description of Mitigation	Example of Application
1	Minimize disturbance to sensitive soils and vegetation	Existing access roads/trails would not be widened or otherwise upgraded for construction and maintenance in areas where soils and vegetation are particularly sensitive to disturbance such as planned or proposed farmland (irrigated and center-pivot irrigated)
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
6	Tower design modification	Used to address site-specific constraints on planned or proposed airports, airstrips, heliports, and other planned or proposed air facilities

TABLE 3-159 SELECTIVE MITIGATION FOR FUTURE 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 planned residential subdivision, commercial area, industrial project, school, or other proposed project
9	Maximize the span between the transmission towers	Locate structures the maximum distance possible across planned roads, railroads, and recreation sites
11	Minimize right-of-way clearance	Clearing of the right-of-way would be minimized to avoid sensitive features such as planned or proposed farmland (irrigated and center-pivot)

TABLE 3-160 SELECTIVE MITIGATION FOR ZONING AND GENERAL PLAN MANAGEMENT DIRECTION		
Mitigation Number	Description of Mitigation	Example of Application
4	Minimize tree clearing	Minimizing disturbance to vegetated areas within areas zoned or designated for parks/preservation.
5	Minimize new and improved accessibility	Relocating a portion of an alternative route to avoid an area zoned or designated for a recreational use or parks/preservation.
7	Span and/or avoid sensitive features	Placing structures in a manner that would span over an area that conflicts with an agricultural use (e.g., pivot irrigation)
11	Minimize right-of-way clearance	Clearing of the right-of-way would be minimized to avoid sensitive features such as areas zoned or designated for parks/preservation, state parks, or regional parks

Residual Impacts

Tables 3-161 to 3-163 summarize the initial impacts on existing land use, future land use, and zoning and general plan management direction, the selective mitigation measures listed in Table 2-13, are applied to mitigate potentially adverse effects on those resources, and the remaining residual impacts. Section 3.2.10.5 reports on the high or moderate residual impact mileages that would occur after selective mitigation is applied. Tables 3-161 to 3-163 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 3-161 SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON EXISTING LAND USE			
Resource¹	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Agriculture			
Center-pivot irrigated agriculture	High	1, 7, 11	Moderate
Dryland farmland	Moderate	1, 7, 11	Low
Irrigated agriculture	High	1, 7, 11	Moderate
Outstructures	Moderate	7	Low
Farm complex (non-residential)	High	7	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 necessary)	Low	–	Low
Industrial (general, light)	Low	7	Low
Landfill	Moderate	7	Low
Oil/gas extraction	High	7	Low
Pipeline and pipeline pump station	High	7	Low
Power substation (selective mitigation measures not necessary)	Low	–	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)	Low	–	Low
Vacant/undeveloped (selective mitigation measures not necessary)	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.			

TABLE 3-162 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
Gas extraction (final plat)	Moderate	7	Low
Industrial (final plat)	Low	7	Low
Mining extraction (preliminary plat) (selective mitigation measures not necessary)	Low	–	Low
Mining extraction (final plat)	Moderate	7	Low
Non-developable open space (preliminary plat)	Moderate	5, 7	Low
Pipeline (approved/concept plan) (selective mitigation measures not necessary)	Low	–	Low
Recreation trail (final plat)	Moderate	5, 7, 9	Low
Transmission line (preliminary plat) (selective mitigation measures not necessary)	Low	–	Low
Transmission line (final plat)	Low	–	Low

TABLE 3-162 SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON FUTURE LAND USE			
Resource ^{1,2}	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Utilities (final plat, preliminary plat, approved/concept plan) (selective mitigation measures not necessary)	Low	–	Low
Vegetation Habitat Management (final plat)	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: <ul style="list-style-type: none"> • 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). 			

TABLE 3-163 SUMMARY OF INITIAL AND RESIDUAL IMPACTS ON ZONING AND GENERAL PLAN MANAGEMENT DIRECTION			
Resource ¹	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Agriculture	Moderate	7, 11	Low
Commercial (selective mitigation measures not necessary)	Low	–	Low
Industrial (selective mitigation measures not necessary)	Low	–	Low
Parks/preservation	Moderate	4, 5, 7, 11	Low
Public/quasi-public (selective mitigation measures not necessary)	Low	–	Low
Rangeland	Moderate	7, 11	Low
Recreation	Moderate	5, 7	Low
Residential (selective mitigation measures not necessary)	Moderate	–	Moderate
Residential (mixed use) (selective mitigation measures not necessary)	Moderate	–	Moderate
NOTES: ¹ Only resources crossed by the alternative routes are listed in this table.			

3.2.10.5 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, future land uses, and zoning and general plan management direction. Reference centerline also refers to impacts within the Project’s associated 250-foot-wide right-of-way. When

discussing where the reference centerline crosses an existing land use, future land use, or zoning and general plan management direction the term crossing also includes where the reference centerline may be adjacent to a project or facility.

3.2.10.5.1 No Action Alternative

Under this alternative, existing and future land uses would remain as they presently exist, and no impacts would occur from the Project.

3.2.10.5.2 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 permits, 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. The socioeconomic impacts on grazing are discussed in Section 3.2.20.

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 within each of the alternative route study corridors would be low after the application of the 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-managing 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 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 within pre-designated 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-managing 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 through 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-managing 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 pre-designated 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 pre-disturbed 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 3-164 identifies the amount of disturbance (in acres) anticipated for each alternative and the percentage of the grazing allotments disturbed (refer to Appendix G 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 within the Project right-of-way and/or within 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 3-164					
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 Disturbance¹	Acres of Permanent Disturbance²	Percent of Allotment Disturbed³
Alternative WYCO-B (Applicant Preferred Alternative)					
BLM Total	1,651,911	198.5	2,283	973	0.0
State Total	26,967	14.8	170	72	0.0
Grand Total	1,661,948	201.6	2,318	988	0.0
Route Variation WYCO-B-1					
BLM Total	1,651,911	198.9	2,288	955	0.0
State Total	23,706	13.8	158	66	0.0
Grand Total	1,659,325	202.0	2,323	970	0.0
Route Variation WYCO-B-2 (Agency Preferred Alternative)					
BLM Total	1,673,802	198.2	2,259	951	0.0
State Total	26,967	14.8	168	71	0.0
Grand Total	1,683,199	201.2	2,294	966	0.0
Route Variation WYCO-B-3					
BLM Total	1,651,911	198.5	2,283	973	0.0
State Total	26,967	14.8	170	72	0.0
Grand Total	1,661,948	201.6	2,318	988	0.0
Alternative WYCO-C					
BLM Total	1,793,637	204.5	2,351	961	0.0
State Total	27,442	15.0	172	70	0.0
Grand Total	1,803,674	207.5	2,386	975	0.0
Route Variation WYCO-C-1					
BLM Total	1,793,637	204.9	2,356	963	0.0
State Total	24,181	14.0	161	66	0.0
Grand Total	1,801,051	208.0	2,392	978	0.0
Route Variation WYCO-C-2					
BLM Total	1,815,529	204.1	2,327	959	0.0
State Total	27,442	15.0	171	70	0.0
Grand Total	1,824,926	207.2	2,362	974	0.0
Route Variation WYCO-C-3					
BLM Total	1,793,637	204.5	2,352	961	0.0
State Total	27,442	15.0	172	70	0.0
Grand Total	1,803,674	207.6	2,387	976	0.0

TABLE 3-164 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 Disturbance¹	Acres of Permanent Disturbance²	Percent of Allotment Disturbed³
Alternative WYCO-D					
BLM Total	1,406,797	205.4	2,341	924	0.0
State Total	39,639	25.0	285	112	0.0
Grand Total	1,425,227	215.7	2,459	971	0.0
Route Variation WYCO-D-1					
BLM Total	1,406,797	205.4	2,342	945	0.0
State Total	39,639	25.0	285	115	0.0
Grand Total	1,425,227	215.7	2,459	992	0.0
Alternative WYCO-F					
BLM Total	1,780,321	212.9	2,427	1,000	0.0
State Total	27,768	14.9	169	70	0.0
Grand Total	1,790,369	215.9	2,461	1,015	0.0
Route Variation WYCO-F-1					
BLM Total	1,780,321	213.3	2,453	981	0.0
State Total	24,507	13.9	159	64	0.0
Grand Total	1,787,747	216.4	2,489	995	0.0
Route Variation WYCO-F-2					
BLM Total	1,802,212	212.6	2,423	978	0.0
State Total	27,768	14.9	169	68	0.0
Grand Total	1,811,621	215.6	2,458	992	0.0
Route Variation WYCO-F-3					
BLM Total	1,780,321	212.9	2,448	1,001	0.0
State Total	27,768	14.9	171	70	0.0
Grand Total	1,790,369	216.0	2,484	1,015	0.0
Alternative COUT BAX-B					
BLM Total	1,386,840	217.7	2,482	1,263	0.0
USFS Total	89,963	20.0	228	116	0.0
State Total	93,504	28.3	322	164	0.0
Grand Total	1,502,421	239.5	2,730	1,389	0.0
Alternative COUT BAX-C					
BLM Total	1,530,524	228.2	2,601	1,255	0.0
USFS Total	89,963	20.0	228	110	0.0
State Total	96,625	30.9	352	170	0.0
Grand Total	1,645,002	250.0	2,850	1,375	0.0
Alternative COUT BAX-E					
BLM Total	1,523,442	238.7	2,745	1,170	0.0
USFS Total	31,339	11.3	130	55	0.0
State Total	84,023	20.9	241	103	0.0
Grand Total	1,595,145	252.8	2,907	1,239	0.0
Alternative COUT-A					
BLM Total	371,993	64.8	751	447	0.0
USFS Total	156,859	20.2	235	140	0.0
State Total	11,071	8.2	95	57	0.0
Grand Total	531,423	85.0	986	587	0.0

TABLE 3-164 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
Route Variation COUT-A-1					
BLM Total	371,993	64.8	738	460	0.0
USFS Total	161,461	19.8	226	141	0.0
State Total	11,071	8.2	93	58	0.0
Grand Total	536,025	845.0	9,633	6,000	0.0
Alternative COUT-B					
BLM Total	410,633	74.8	868	501	0.0
USFS Total	159,473	17.5	203	117	0.0
State Total	22,484	13.3	154	89	0.0
Grand Total	580,150	95.3	1,105	639	0.0
Route Variation COUT-B-1					
BLM Total	403,205	75.8	879	516	0.0
USFS Total	200,768	19.5	227	133	0.0
State Total	18,495	9.9	114	67	0.0
Grand Total	610,306	96.6	1,121	657	0.0
Route Variation COUT-B-2					
BLM Total	403,205	75.8	879	515	0.0
USFS Total	195,163	19.1	222	130	0.0
State Total	23,778	12.7	147	86	0.0
Grand Total	610,502	98.1	1,138	667	0.0
Route Variation COUT-B-3					
BLM Total	403,205	76.0	881	517	0.0
USFS Total	159,473	17.5	203	119	0.0
State Total	23,778	11.8	137	80	0.0
Grand Total	574,815	95.9	1,112	652	0.0
Route Variation COUT-B-4					
BLM Total	403,205	75.8	879	515	0.0
USFS Total	195,163	19.1	222	130	0.0
State Total	23,778	11.8	137	80	0.0
Grand Total	610,502	97.2	1,128	661	0.0
Route Variation COUT-B-5					
BLM Total	403,205	76.0	874	555	0.0
USFS Total	159,473	17.5	201	128	0.0
State Total	23,778	12.7	146	93	0.0
Grand Total	574,815	96.8	1,113	707	0.0
Alternative COUT-C					
BLM Total	861,446	122.1	1,392	940	0.0
USFS Total	138,487	5.5	63	42	0.0
State Total	33,203	18.4	209	141	0.0
Grand Total	1,012,329	129.5	1,476	997	0.0
Route Variation COUT-C-1					
BLM Total	859,139	127.5	1,466	994	0.0
USFS Total	179,782	7.5	87	59	0.0
State Total	31,347	16.0	184	125	0.0
Grand Total	1,049,680	136.1	1,565	1,062	0.0

TABLE 3-164					
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
Route Variation COUT-C-2					
BLM Total	859,139	127.4	1,465	994	0.0
USFS Total	174,177	7.1	82	55	0.0
State Total	33,491	18.8	217	147	0.0
Grand Total	1,046,797	137.7	1,584	1,074	0.0
Route Variation COUT-C-3 (Agency Preferred Alternative)					
BLM Total	859,139	127.6	1,468	1,021	0.0
USFS Total	138,487	5.5	63	44	0.0
State Total	33,491	18.8	217	151	0.0
Grand Total	1,011,110	136.3	1,567	1,090	0.0
Route Variation COUT-C-4					
BLM Total	859,139	127.0	1,461	940	0.0
USFS Total	174,177	7.1	82	53	0.0
State Total	35,749	20.8	239	154	0.0
Grand Total	1,047,803	137.3	1,579	1,016	0.0
Route Variation COUT-C-5					
BLM Total	859,139	127.3	1,464	942	0.0
USFS Total	138,487	5.5	63	41	0.0
State Total	35,749	20.8	239	154	0.0
Grand Total	1,012,115	135.9	1,563	1,006	0.0
Alternative COUT-H (Applicant Preferred Alternative)					
BLM Total	879,383	134.2	1,530	940	0.0
USFS Total	31,339	11.3	129	79	0.0
State Total	30,546	17.7	202	124	0.0
Grand Total	922,312	146.7	1,672	1,027	0.0
Alternative COUT-I					
BLM Total	954,029	154.8	1,764	1,037	0.0
USFS Total	89,963	20.0	228	134	0.0
State Total	64,261	33.0	376	221	0.0
Grand Total	1,070,971	183.7	2,094	1,231	0.0
<p>NOTES:</p> <p>¹Temporary 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).</p> <p>²Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures (pads), communication regeneration stations, substations and series compensation stations, and permanent access roads (refer to Table 2-2).</p> <p>³All 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.</p> <p>BLM = Bureau of Land Management USFS = U.S. Forest Service</p>					

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 3.2.2.1.2 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 within the right-of-way identified.

Impacts on oil and/or gas and other mineral extraction are also discussed by alternative in Section 3.2.10.5.4.

3.2.10.5.3 345-kilovolt Ancillary Transmission Components

The 345kV ancillary transmission components of the Project (Segments 4a, 4b, and 4c) would cross a grazing allotment for 5.9 miles on Links U640, U642, U643, and U644 in the Fillmore Field Office 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 to 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.

3.2.10.5.4 500-kilovolt Transmission Line Components

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

Table 3-165 reports land jurisdiction, state trust lands, parallel linear facilities within 1,500 feet of the alternative route, and utility corridors for WYCO alternative routes. The baseline resource inventory and residual impacts on the four WYCO alternative routes considered are presented in Tables 3-166 to 3-168.

TABLE 3-165 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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
Alternative WYCO-B and Route Variations															
WYCO-B (Applicant Preferred Alternative)	204.5	125.8	0.0	0.0	14.7	0.0	64.0	11.6	0.0	18.3	2.5	21.3	38.7	15.3	18.5
Wyoming	138.1	77.9	0.0	0.0	3.9	0.0	56.3	2.6	0.0	0.0	2.5	0.0	30.9	1.0	2.2
Colorado	66.4	47.9	0.0	0.0	10.8	0.0	7.7	9.0	0.0	18.3	0.0	21.3	7.8	14.3	16.3
WYCO-B-1	204.9	127.3	0.0	0.0	13.7	0.0	63.9	10.9	0.0	18.3	2.5	21.3	38.7	15.3	18.5
Wyoming	138.1	77.9	0.0	0.0	3.9	0.0	56.3	2.6	0.0	0.0	2.5	0.0	30.9	1.0	2.2
Colorado	66.8	49.4	0.0	0.0	9.8	0.0	7.6	8.3	0.0	18.3	0.0	21.3	7.8	14.3	16.3
WYCO-B-2 (Agency Preferred Alternative)	204.5	124.1	0.0	0.1	14.7	0.0	65.6	11.6	0.0	12.8	2.5	15.8	38.7	13.5	17.3
Wyoming	138.1	77.9	0.0	0.0	3.9	0.0	56.3	2.6	0.0	0.0	2.5	0.0	30.9	1.0	2.2
Colorado	66.4	46.2	0.0	0.1	10.8	0.0	9.3	9.0	0.0	12.8	0.0	15.8	7.8	12.5	15.1
WYCO-B-3	204.5	125.4	0.0	0.0	14.7	0.0	64.4	11.6	0.0	14.9	2.5	17.9	38.7	14.9	18.9
Wyoming	138.1	77.9	0.0	0.0	3.9	0.0	56.3	2.6	0.0	0.0	2.5	0.0	30.9	0.9	2.2
Colorado	66.4	47.5	0.0	0.0	10.8	0.0	8.1	9.0	0.0	14.9	0.0	17.9	7.8	14.0	16.7

TABLE 3-165 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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
Alternative WYCO-C and Route Variations															
WYCO-C	210.4	127.3	0.0	0.0	15.0	0.0	68.1	11.8	0.0	18.3	6.6	21.3	60.4	43.0	24.1
Wyoming	144.0	79.4	0.0	0.0	4.2	0.0	60.4	2.8	0.0	0.0	6.6	0.0	52.6	28.7	7.8
Colorado	66.4	47.9	0.0	0.0	10.8	0.0	7.7	9.0	0.0	18.3	0.0	21.3	7.8	14.3	16.3
WYCO-C-1	210.8	128.8	0.0	0.0	14.0	0.0	68.0	11.1	0.0	18.3	6.6	21.3	60.4	43.0	24.1
Wyoming	144.0	79.4	0.0	0.0	4.2	0.0	60.4	2.8	0.0	0.0	6.6	0.0	52.6	28.7	7.8
Colorado	66.8	49.4	0.0	0.0	9.8	0.0	7.6	8.3	0.0	18.3	0.0	21.3	7.8	14.3	16.3
WYCO-C-2	210.4	125.6	0.0	0.1	1.0	0.0	69.7	11.8	0.0	12.8	6.6	15.8	60.4	41.2	22.9
Wyoming	144.0	79.4	0.0	0.0	4.2	0.0	60.4	2.8	0.0	0.0	6.6	0.0	52.6	28.7	7.8
Colorado	66.4	46.2	0.0	0.1	10.8	0.0	9.3	9.0	0.0	12.8	0.0	15.8	7.8	12.5	15.1
WYCO-C-3	210.4	126.9	0.0	0.0	15.0	0.0	68.5	11.8	0.0	14.9	6.6	17.9	60.4	42.7	24.5
Wyoming	144.0	79.4	0.0	0.0	4.2	0.0	60.4	2.8	0.0	0.0	6.6	0.0	52.6	28.7	7.8
Colorado	66.4	47.5	0.0	0.0	10.8	0.0	8.1	9.0	0.0	14.9	0.0	17.9	7.8	14.0	16.7
Alternative WYCO-D and Route Variation															
WYCO-D	250.0	105.8	0.0	0.0	25.3	0.0	118.9	23.7	0.0	53.1	24.2	56.4	54.8	59.8	66.5
Wyoming	135.0	67.1	0.0	0.0	6.4	0.0	61.5	4.2	0.0	0.0	24.1	0.0	27.7	24.0	31.1
Colorado	115.0	38.7	0.0	0.0	18.9	0.0	57.4	19.5	0.0	53.1	0.1	56.4	27.1	35.8	35.4
WYCO-D-1	250.0	105.4	0.0	0.0	26.3	0.0	119.3	23.7	0.0	49.7	24.2	53.0	54.8	59.4	66.5
Wyoming	135.0	67.1	0.0	0.0	6.4	0.0	61.5	4.2	0.0	0.0	24.1	0.0	27.7	24.0	31.1
Colorado	115.0	38.3	0.0	0.0	18.9	0.0	57.8	19.5	0.0	49.7	0.1	53.0	27.1	35.8	35.4

TABLE 3-165 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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
Alternative WYCO-F and Route Variations															
WYCO-F	218.9	140.7	0.0	0.0	14.9	0.0	63.3	11.7	0.0	18.3	2.5	21.3	41.7	15.4	18.6
Wyoming	152.5	92.8	0.0	0.0	4.1	0.0	55.6	2.7	0.0	0.0	2.5	0.0	33.9	1.1	2.3
Colorado	66.4	47.9	0.0	0.0	10.8	0.0	7.7	9.0	0.0	18.3	0.0	21.3	7.8	14.3	16.3
WYCO-F-1	219.3	142.2	0.0	0.0	13.9	0.0	63.2	11.0	0.0	18.3	2.5	21.3	41.7	15.4	18.6
Wyoming	152.5	92.8	0.0	0.0	4.1	0.0	55.6	2.7	0.0	0.0	2.5	0.0	33.9	1.1	2.3
Colorado	66.8	49.4	0.0	0.0	9.8	0.0	7.6	8.3	0.0	18.3	0.0	21.3	7.8	14.3	16.3
WYCO-F-2 (Agency Preferred Alternative)	218.9	139.0	0.0	0.1	14.9	0.0	64.9	11.7	0.0	12.8	2.3	15.8	41.7	13.6	17.4
Wyoming	152.5	92.8	0.0	0.0	4.1	0.0	55.6	2.7	0.0	0.0	2.5	0.0	33.9	1.1	2.3
Colorado	66.4	46.2	0.0	0.1	10.8	0.0	9.3	9.0	0.0	12.8	0.0	15.8	7.8	12.5	15.1
WYCO-F-3	218.9	140.3	0.0	0.0	14.9	0.0	63.7	11.7	0.0	14.9	2.5	17.9	41.7	15.0	19.0
Wyoming	152.5	92.8	0.0	0.0	4.1	0.0	55.6	2.7	0.0	0.0	2.5	0.0	33.9	1.1	2.3
Colorado	66.4	47.5	0.0	0.0	10.8	0.0	8.1	9.0	0.0	14.9	0.0	17.9	7.8	13.9	16.7
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 Project centerline.															
kV = Kilovolt															

TABLE 3-166 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	Residences within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Wastewater Treatment Plant			Low	Moderate	High	
Alternative WYCO-B and Route Variations																							
WYCO-B (Applicant Preferred Alternative)	204.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	5.0	2.0	201.5	0.0	0.0	1.2	0.9	0.0	4	1	202.0	0.1	0.0
Wyoming	138.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	1.7	2.0	138.1	0.0	0.0	0.6	0.7	0.0	3	1	138.0	0.1	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	63.4	0.0	0.0	0.6	0.2	0.0	1	0	64.0	0.0	0.0
WYCO-B-1	204.9	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	5.0	2.0	201.9	0.0	0.0	1.2	0.8	0.0	3	1	202.4	0.1	0.0
Wyoming	138.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	1.7	2.0	138.1	0.0	0.0	0.6	0.7	0.0	3	1	138.0	0.1	0.0
Colorado	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	63.8	0.0	0.0	0.6	0.1	0.0	0	0	64.4	0.0	0.0
WYCO-B-2 (Agency Preferred Alternative)	204.5	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	5.0	2.0	201.3	0.0	0.0	1.2	0.9	0.0	5	1	201.9	0.1	0.0
Wyoming	138.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	1.7	2.0	138.1	0.0	0.0	0.6	0.7	0.0	3	1	138.0	0.1	0.0
Colorado	66.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	63.2	0.0	0.0	0.6	0.2	0.0	2	0	63.9	0.0	0.0
WYCO-B-3	204.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	5.0	2.0	201.5	0.0	0.0	4.6	0.9	0.0	4	1	202.0	0.1	0.0
Wyoming	138.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0	1.7	2.0	131.1	0.0	0.0	0.6	0.7	0.0	3	1	138.0	0.1	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	63.4	0.0	0.0	4.0	0.2	0.0	1	0	64.0	0.0	0.0

TABLE 3-166 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	Residences within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Wastewater Treatment Plant	Low			Moderate	High	
Alternative WYCO-C and Route Variations																							
WYCO-C	210.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	20.3	2.0	207.4	0.0	0.0	1.2	0.9	0.1	4	1	207.9	0.1	0.0	
Wyoming	144.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	18.6	2.0	144.0	0.0	0.0	0.6	0.7	0.1	3	1	143.9	0.1	0.0	
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	63.4	0.0	0.0	0.6	0.2	0.0	1	0	64.0	0.0	0.0	
WYCO-C-1	210.8	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	20.3	2.0	207.8	0.0	0.0	1.2	0.9	0.1	3	1	208.3	0.1	0.0	
Wyoming	144.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	18.6	2.0	144.0	0.0	0.0	0.6	0.7	0.1	3	1	143.9	0.1	0.0	
Colorado	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	63.8	0.0	0.0	0.6	0.2	0.0	0	0	64.4	0.0	0.0	
WYCO-C-2	210.4	0.3	0.0	0.1	0.0	0.0	0.0	0.0	1.3	20.3	2.0	207.2	0.0	0.0	1.2	0.8	0.1	5	1	207.8	0.1	0.0	
Wyoming	144.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	18.6	2.0	144.0	0.0	0.0	0.6	0.7	0.1	3	1	143.9	0.1	0.0	
Colorado	66.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	63.2	0.0	0.0	0.6	0.1	0.0	2	0	63.9	0.0	0.0	
WYCO-C-3	210.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	20.3	2.0	207.4	0.0	0.0	4.6	0.9	0.1	4	1	207.9	0.1	0.0	
Wyoming	144.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.3	18.6	2.0	144.0	0.0	0.0	0.6	0.7	0.1	3	1	143.9	0.1	0.0	
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	63.4	0.0	0.0	4.0	0.2	0.0	1	0	64.0	0.0	0.0	
Alternative WYCO-D and Route Variation																							
WYCO-D	250.0	10.6	0.0	0.1	0.3	0.1	0.0	0.3	1.3	7.6	3.9	215.4	0.0	0.0	12.2	1.8	0.0	50	1	229.3	4.2	0.0	
Wyoming	135.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.2	2.7	3.9	135.0	0.0	0.0	1.4	1.4	0.0	15	1	134.9	0.1	0.0	
Colorado	115.0	10.4	0.0	0.0	0.3	0.1	0.0	0.3	0.1	4.9	0.0	80.4	0.0	0.0	10.8	0.4	0.0	35	0	94.4	4.1	0.0	
WYCO-D-1	250.0	10.6	0.0	0.1	0.3	0.1	0.0	0.3	1.3	7.6	3.9	215.4	0.0	0.0	15.6	0.8	0.0	50	1	229.3	4.2	0.0	
Wyoming	135.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.2	2.7	3.9	135.0	0.0	0.0	1.4	1.4	0.0	15	1	134.9	0.1	0.0	
Colorado	115.0	10.4	0.0	0.0	0.3	0.1	0.0	0.3	0.1	4.9	0.0	80.4	0.0	0.0	14.2	0.4	0.0	35	0	94.4	4.1	0.0	

TABLE 3-166 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	Residences within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Wastewater Treatment Plant	Low			Moderate	High	
Alternative WYCO-F and Route Variations																							
WYCO-F	218.9	0.2	0.0	0.1	0.0	0.1	0.0	0.0	1.0	5.2	2.0	215.9	0.0	0.0	1.2	0.9	0.0	4	1	216.4	0.1	0.0	
Wyoming	152.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.0	3.5	2.0	152.5	0.0	0.0	0.6	0.7	0.0	3	1	152.4	0.1	0.0	
Colorado	66.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.7	0.0	63.4	0.0	0.0	0.6	0.2	0.0	1	0	64.0	0.0	0.0	
WYCO-F-1	219.3	0.2	0.0	0.1	0.0	0.1	0.0	0.0	1.0	5.2	2.0	216.3	0.0	0.0	1.2	0.9	0.0	3	1	216.8	0.1	0.0	
Wyoming	152.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.0	3.5	2.0	152.5	0.0	0.0	0.6	0.7	0.0	3	1	152.4	0.1	0.0	
Colorado	66.8	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.7	0.0	63.2	0.0	0.0	0.6	0.2	0.0	0	0	64.4	0.0	0.0	
WYCO-F-2	218.9	0.3	0.0	0.1	0.0	0.1	0.0	0.0	1.0	5.2	2.0	215.7	0.0	0.0	1.2	0.8	0.0	5	1	216.3	0.1	0.0	
Wyoming	152.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.0	3.5	2.0	152.5	0.0	0.0	0.6	0.7	0.0	3	1	152.4	0.1	0.0	
Colorado	66.4	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.7	0.0	63.2	0.0	0.0	0.6	0.1	0.0	2	0	63.9	0.0	0.0	
WYCO-F-3	218.9	0.2	0.0	0.1	0.0	0.1	0.0	0.0	1.0	5.2	2.0	215.9	0.0	0.0	4.6	0.9	0.0	4	1	216.4	0.1	0.0	
Wyoming	152.5	0.2	0.0	0.1	0.0	0.0	0.0	0.0	1.0	3.5	2.0	152.5	0.0	0.0	0.6	0.7	0.0	3	1	152.4	0.1	0.0	
Colorado	66.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.7	0.0	63.4	0.0	0.0	4.0	0.2	0.0	1	0	64.0	0.0	0.0	

NOTE: Existing residences within alternative route right-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 3-167 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				Industrial (Final Plat)	Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/Concept Plan)	Recreation Trail (Final Plat)	Scenic Roads/Parkway (Preliminary Plat)	Transmission Line (Preliminary Plat)	Transmission Line (Final Plat)	Utilities		Vegetation Habitat Management (Final Plat)	Residual Impacts (miles)		
		Gas (Preliminary Plat)	Gas (Final Plat)	Mining (Preliminary Plat)	Mining (Final Plat)								Preliminary Plat	Approved/Concept Plan		Low	Moderate	High
Alternative WYCO-B and Route Variation																		
WYCO-B (Applicant Preferred Alternative)	204.5	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	4.9	13.0	0.0	0.0	73.0	0.0	0.0
Wyoming	138.1	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	4.9	13.0	0.0	0.0	61.2	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	0.0	0.0	11.8	0.0	0.0
WYCO-B-1	204.9	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.5	4.9	13.0	0.0	0.0	70.5	0.0	0.0
Wyoming	138.1	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	4.9	13.0	0.0	0.0	61.2	0.0	0.0
Colorado	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0	9.3	0.0	0.0
WYCO-B-2 (Agency Preferred Alternative)	204.5	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.4	4.9	13.0	0.0	0.0	72.4	0.0	0.0
Wyoming	138.1	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	4.9	13.0	0.0	0.0	61.2	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	11.2	0.0	0.0
WYCO-B-3	204.5	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	4.9	13.0	0.0	0.0	74.8	0.0	0.0
Wyoming	138.1	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	4.9	13.0	0.0	0.0	61.2	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.0	0.0	0.0	0.0	13.6	0.0	0.0
Alternative WYCO-C and Route Variation																		
WYCO-C	210.4	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.4	4.9	0.0	0.0	0.0	90.9	0.0	0.0
Wyoming	144.0	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	4.9	0.0	0.0	0.0	79.1	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	0.0	0.0	11.8	0.0	0.0
WYCO-C-1	210.8	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.9	4.9	13.0	0.0	0.0	88.4	0.0	0.0
Wyoming	144.0	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	4.9	13.0	0.0	0.0	79.1	0.0	0.0
Colorado	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0	9.3	0.0	0.0

TABLE 3-167 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				Industrial (Final Plat)	Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/Concept Plan)	Recreation Trail (Final Plat)	Scenic Roads/Parkway (Preliminary Plat)	Transmission Line (Preliminary Plat)	Transmission Line (Final Plat)	Utilities			Residual Impacts (miles)		
		Gas (Preliminary Plat)	Gas (Final Plat)	Mining (Preliminary Plat)	Mining (Final Plat)								Preliminary Plat	Approved/Concept Plan	Vegetation Habitat Management (Final Plat)	Low	Moderate	High
WYCO-C-2	210.4	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.8	4.9	13.0	0.0	0.0	90.3	0.0	0.0
Wyoming	144.0	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	4.9	13.0	0.0	0.0	79.1	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	11.2	0.0	0.0
WYCO-C-3	210.4	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.2	4.9	13.0	0.0	0.0	92.7	0.0	0.0
Wyoming	144.0	41.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.6	4.9	13.0	0.0	0.0	79.1	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.0	0.0	0.0	0.0	13.6	0.0	0.0
Alternative WYCO-D and Route Variation																		
WYCO-D	250.0	38.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	74.4	2.0	13.0	0.0	0.0	121.2	0.0	0.0
Wyoming	135.0	38.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	23.0	2.0	13.0	0.0	0.0	69.8	0.0	0.0
Colorado	115.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.4	0.0	0.0	0.0	0.0	51.4	0.0	0.0
WYCO-D-1	250.0	38.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	76.2	2.0	13.0	0.0	0.0	123.0	0.0	0.0
Wyoming	135.0	38.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	23.0	2.0	13.0	0.0	0.0	69.8	0.0	0.0
Colorado	115.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.2	0.0	0.0	0.0	0.0	53.2	0.0	0.0
Alternative WYCO-F and Route Variation																		
WYCO-F	218.9	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.6	4.9	13.0	0.0	0.0	97.1	0.0	0.0
Wyoming	152.5	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8	4.9	13.0	0.0	0.0	85.3	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	0.0	0.0	11.8	0.0	0.0
WYCO-F-1	219.3	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.1	4.9	13.0	0.0	0.0	94.6	0.0	0.0
Wyoming	152.5	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8	4.9	13.0	0.0	0.0	85.3	0.0	0.0
Colorado	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	0.0	0.0	9.3	0.0	0.0
WYCO-F-2	218.9	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	4.9	13.0	0.0	0.0	96.5	0.0	0.0
Wyoming	152.5	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8	4.9	13.0	0.0	0.0	85.3	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	11.2	0.0	0.0
WYCO-F-3	218.9	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.4	4.9	13.0	0.0	0.0	98.9	0.0	0.0
Wyoming	152.5	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.8	4.9	13.0	0.0	0.0	85.3	0.0	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.0	0.0	0.0	0.0	13.6	0.0	0.0

TABLE 3-168 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									Residual Impacts (miles)		
		Agriculture	Commercial	Industrial	Rangeland	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Low	Moderate	High
Alternative WYCO-B and Route Variations													
WYCO-B (Applicant Preferred Alternative)	204.5	146.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	146.1	0.0	0.0
Wyoming	138.1	79.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.7	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
WYCO-B-1	204.9	146.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	146.5	0.0	0.0
Wyoming	138.1	79.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.7	0.0	0.0
Colorado	66.8	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.8	0.0	0.0
WYCO-B-2 (Agency Preferred Alternative)	204.5	146.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	146.1	0.0	0.0
Wyoming	138.1	79.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.7	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
WYCO-B-3	204.5	146.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	146.1	0.0	0.0
Wyoming	138.1	79.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.7	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
Alternative WYCO-C and Route Variations													
WYCO-C	210.4	174.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	174.1	0.0	0.0
Wyoming	144.0	107.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.7	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
WYCO-C-1	210.8	174.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	174.5	0.0	0.0
Wyoming	144.0	107.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.7	0.0	0.0
Colorado	66.8	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.8	0.0	0.0

TABLE 3-168 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									Residual Impacts (miles)		
		Agriculture	Commercial	Industrial	Rangeland	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Low	Moderate	High
WYCO-C-2	210.4	174.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	174.1	0.0	0.0
Wyoming	144.0	107.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.7	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
WYCO-C-3	210.4	174.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	174.1	0.0	0.0
Wyoming	144.0	107.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.7	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
Alternative WYCO-D and Route Variation													
WYCO-D	250.0	183.3	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	183.5	0.1	0.0
Wyoming	135.0	68.3	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	68.5	0.1	0.0
Colorado	115.0	115.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	115.0	0.0	0.0
WYCO-D-1	250.0	183.3	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	183.5	0.1	0.0
Wyoming	135.0	68.3	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	68.5	0.1	0.0
Colorado	115.0	115.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	115.0	0.0	0.0
Alternative WYCO-F and Route Variations													
WYCO-F	218.9	139.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	139.6	0.0	0.0
Wyoming	152.5	73.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.2	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
WYCO-F-1	219.3	140.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	140.0	0.0	0.0
Wyoming	152.5	73.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.2	0.0	0.0
Colorado	66.8	66.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.8	0.0	0.0
WYCO-F-2	218.9	139.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	139.6	0.0	0.0
Wyoming	152.5	73.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.2	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0
WYCO-F-3	218.9	139.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	139.6	0.0	0.0
Wyoming	152.5	73.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.2	0.0	0.0
Colorado	66.4	66.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.4	0.0	0.0

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-B and route variations in Wyoming.

Alternative WYCO-B and route variations cross various types of state trust lands with uses that include rights-of-way for fiber optic lines; highways, telephone and telegraph lines; telecommunication lines; communication site roads; the Sinclair Regenerator station; natural gas, gas, and oil pipelines; power lines; railroads; and oil and gas leases.

Alternative WYCO-B is located within a WWEC corridor for 1.0 mile and within BLM-designated and underground utility corridors in the BLM Rawlins Field Office for approximately 2.2 miles. Route Variation WYCO-B-3 is located within a WWEC corridor for 0.1 fewer mile (0.9 mile) than Alternative WYCO-B and Route Variations WYCO-B-1 and WYCO-B-2.

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. Alternative WYCO-B 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-B and route variations in Wyoming cross pipeline (approved/concept plan), transmission line (both preliminary and final plats), utility (preliminary plat), and gas extraction mining (preliminary plat) land uses.

Zoning and General Plan Management Direction

Alternative WYCO-B and route variations cross lands zoned for agriculture in Carbon and Sweetwater counties.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-B and route variations in Wyoming would have a total of 0.1 mile of moderate residual impacts that occur where the reference centerline crosses an agricultural farm complex. 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.

Future Land Use

Alternative WYCO-B and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-B and route variations would have no high or moderate impacts on zoning and general plan management direction.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-B and route variations in Colorado.

Alternative WYCO-B and Route Variations WYCO-B-2 and WYCO-B-3 cross the Bald Mountain State Trust Land, the South Nipple Rim State Trust Land, and two oil and gas leases owned by Langham Petroleum LLC and Quicksilver Resources Inc. Route Variation WYCO-B-1 does not cross the Bald Mountain State Trust land.

Alternative WYCO-B and Route Variations WYCO-B-2 and WYCO-B-3 in Colorado are located within a WWEC corridor for 14.3 miles, 12.5 miles, and 14.0 miles, and BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 16.3 miles, 15.1 miles, and 16.7 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-B and route variations crosses agriculture, pipeline and/or pipeline pump station, grazing allotments, transmission lines, and vacant/undeveloped land uses. Alternative WYCO-B crosses the following authorized projects:

- BLM oil and/or gas leases in the White River Field Office
- State oil and/or gas leases

Alternative WYCO-B route variations have several differences in the mileages of existing land uses crossed (Table 3-166). These occur for agriculture, pipeline and/or pipeline pump station, grazing allotments, transmission lines, and vacant/undeveloped land uses.

Future Land Use

Alternative WYCO-B and route variations crosses transmission lines (both preliminary and final plats).

Zoning and General Plan Management Direction

Alternative WYCO-B and route variations crosses land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-B and route variations would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative WYCO-B and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-B and route variations would have no high or moderate residual impacts on zoning and general plan management direction.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-C and route variations in Wyoming.

Alternative WYCO-C and route variations cross various types of state trust lands with uses that include rights-of-way for fiber optic lines; highways; telephone and telegraph lines; telecommunication lines; communication site roads; the Sinclair Regenerator station; natural gas, gas, and oil pipelines; power lines; railroads; and oil and gas leases.

Alternative WYCO-C and route variations cross various types of state trust lands with land uses that include rights-of-way for fiber optic lines, highways, telephone and telegraph lines, telecommunication lines, communication site roads, the Sinclair Regenerator station, natural gas, gas, and oil pipelines, power lines, railroads; and oil and gas leases.

Alternative WYCO-C and route variations are located within a WWEC corridor for 28.7 miles and BLM-designated and underground utility corridors within the BLM Rawlins Field Office for 7.8 miles.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-C and route variations in Wyoming cross agriculture (outstructures and farm complexes), communication facilities, oil/gas extraction, pipelines and/or pipeline pump stations, grazing allotments, transmission lines, vacant/undeveloped, water tower/wastewater treatment plant, and the Seven Mile Hill wind farm. 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 gas extraction mining (preliminary plat), and transmission lines (both preliminary and final plats).

Alternative WYCO-C route variations cross utilities (preliminary plat) for a total of 13.0 miles, compared to WYCO-C which does not cross these areas.

Zoning and General Plan Management Direction

Alternative WYCO-C and route variations cross land zoned for agriculture in Carbon and Sweetwater counties.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-C and route variations would have a total of 0.1 mile of moderate residual impacts that occur where the reference centerline crosses an agricultural farm complex. There are no high residual impacts on existing land use.

Future Land Use

Alternative WYCO-C and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-C and route variations would have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-C and route variations in Colorado.

Alternative WYCO-C and Route Variations WYCO-C-2 and WYCO-C-3 cross the Bald Mountain State Trust Land, the South Nipple Rim State Trust Land, and two oil and gas leases owned by Langham Petroleum LLC and Quicksilver Resources Inc. Route Variation WYCO-C-1 does not cross the Bald Mountain State Trust land.

Alternative WYCO-C and Route Variations WYCO-C-2 and WYCO-C-3 are located within a WWEC corridor for 14.3, 12.5, and 14.0 miles, and BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 16.3, 15.1, and 16.7 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-C crosses pipeline and/or pipeline pumpstation, grazing allotments, transmission line, and vacant/undeveloped land uses. Alternative WYCO-C crosses the following authorized projects:

- BLM oil and/or gas leases in the White River Field Office
- State oil and/or gas leases

Alternative WYCO-C route variations have several differences in the mileages of the existing land uses crossed (Table 3-166). These occur for agriculture, grazing allotments, transmission line, and vacant/undeveloped land uses.

Future Land Use

Alternative WYCO-C and route variations cross a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative WYCO-C and route variations cross land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-C and route variations would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative WYCO-C and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-C and route variations would have no high or moderate residual impacts on zoning and general plan management direction.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-D and route variation in Wyoming.

Alternative WYCO-D and route variation cross various types of state trust lands with uses that include rights-of-way for fiber optic lines; highways; telephone and telegraph lines; telecommunication lines; communication site roads; the Sinclair Regenerator station; natural gas, gas, and oil pipelines; power lines; railroads; oil and gas leases; and coal and hard rock leases.

Alternative WYCO-D and route variation are located within a WWEC corridor for 24.0 miles and a BLM-designated utility corridor within the BLM Rawlins Field Office for 31.1 miles.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-D and route variation cross 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. Alternative WYCO-D 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-D and route variation cross transmission line (both preliminary and final plats), utility (preliminary plat), gas extraction (preliminary plat), and extraction mining (preliminary plat).

Zoning and General Plan Management Direction

Alternative WYCO-D and route variation cross 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 and route variation would have a total of 0.1 mile of moderate residual impacts that occur where the reference centerline crosses an agricultural farm complex. There are no high residual impacts on existing land use.

Future Land Use

Alternative WYCO-D and route variation would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-D and route variation would have a total of 0.1 mile of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-D and route variation in Colorado.

Alternative WYCO-D and route variation cross the Baker's Peak, 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 with the reference centerline.

Alternative WYCO-D and route variation are located within a WWEC corridor for 35.8 miles and BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 35.4 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-D and its route variation cross agriculture, extraction mining, flood-control facility, landfill, oil/gas extraction, pipeline and/or pipeline pump stations, grazing allotments, transmission lines, and vacant/undeveloped land uses. 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 and its route variation cross a transmission line (preliminary plat) future land use.

Zoning and General Plan Management Direction

Alternative WYCO-D and its route variation cross land zoned for agriculture in Moffat and Routt counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-D and its route variation would have a total of 4.1 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland. There are no high residual impacts on existing land use.

Future Land Use

Alternative WYCO-D

Alternative WYCO-D and route variation would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-D and route variation would have no high or moderate residual impacts on zoning and general plan management direction.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Wyoming)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-F and route variations in Wyoming.

Alternative WYCO-F and route variations cross various types of state trust lands with uses that include rights-of-way for fiber optic lines; highways; telephone and telegraph lines; telecommunication lines; communication site roads; the Sinclair Regenerator station; natural gas, gas, and oil pipelines; power lines; railroads; and oil and gas leases.

Alternative WYCO-F and route variations are located within a WWEC corridor for 1.1 mile and BLM-designated and underground utility corridors within the BLM Rawlins Field Office for approximately 2.3 miles.

Affected Environment (Wyoming)

Existing Land Use

Alternative WYCO-F and route variation cross agriculture, communication facilities, pipelines, grazing allotments, Seven Mile Hill wind farm, transmission lines, oil/gas extraction, and vacant/undeveloped lands. Alternative WYCO-F 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-F and route variations in Wyoming cross transmission line (both preliminary and final plats), utility (preliminary plat), and gas extraction (preliminary plat) land uses.

Zoning and General Plan Management Direction

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3) cross land zoned for agriculture in Carbon and Sweetwater counties.

Environmental Consequences (Wyoming)

Existing Land Use

Alternative WYCO-F and route variations have 0.1 mile of moderate residual impacts that occur where the reference centerline crosses irrigated farmland and there are no high residual impacts on existing land use.

Future Land Use

Alternative WYCO-F and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-F and route variations would have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-165 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 within WWEC, BLM, and USFS utility corridors for Alternative WYCO-F and route variations in Colorado.

Alternative WYCO-F crosses the Bald Mountain State Trust Land, South Nipple Rim State Trust Land, and two oil and gas leases owned by Langham Petroleum LLC and Quicksilver Resources Inc. with the reference centerline. Route Variation WYCO-F-1 does not cross the Bald Mountain State Trust Land.

Alternative WYCO-F and Route Variations WYCO-F-2 and WYCO-F-3 are located within a WWEC corridor for 14.3, 12.5, 13.9 miles and within the BLM-designated utility corridors in the BLM Little Snake and White River Field Offices for 16.3, 15.1, and 16.7 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative WYCO-F crosses grazing allotments, flood-control facility, pipeline and pipeline pump station, transmission line, and vacant/undeveloped land. Alternative WYCO-B crosses the following authorized projects:

- BLM oil and/or gas leases in the White River Field Office
- State oil and/or gas leases

Alternative WYCO-F route variations have several differences in the mileages of the existing land uses crossed (Table 3-166). These occur for agriculture, grazing allotments, and vacant/undeveloped land uses.

Future Land Use

Alternative WYCO-F and route variations cross transmission line (preliminary plat) land uses.

Zoning and General Plan Management Direction

Alternative WYCO-F and route variations cross land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative WYCO-F and route variations would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative WYCO-F and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative WYCO-F and route variations would have no high or moderate residual impacts on zoning and general plan management direction.

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

Table 3-169 reports land jurisdiction, state trust lands, parallel linear facilities within 1,500 feet of the alternative route, and utility corridors for COUT BAX alternative routes. The baseline resource inventory and residual impacts on for COUT BAX alternative routes considered are presented in Tables 3-170 to 3-172.

Alternative COUT BAX-B

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-169 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT BAX-B in Colorado. Alternative COUT BAX-B does not cross state trust lands.

Alternative COUT BAX-B is located within a WWEC corridor for 0.8 mile and BLM-designated utility corridors in the BLM Grand Junction and White River Field Offices for 48.1 miles.

**TABLE 3-169
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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
COUT BAX-B	279.2	172.7	16.9	0.0	30.9	0.0	58.7	22.0	0.0	95.9	0.0	21.9	27.3	5.9	131.9
Colorado	86.7	69.4	0.0	0.0	0.0	0.0	17.3	0.0	0.0	0.1	0.0	1.8	24.7	0.8	48.1
Utah	192.5	103.3	16.9	0.0	30.9	0.0	41.4	22.0	0.0	95.8	0.0	20.1	2.6	5.1	83.8
COUT BAX-C	289.7	179.3	16.9	0.0	34.8	0.0	58.7	21.9	0.0	72.7	0.0	25.3	27.3	17.3	128.5
Colorado	86.7	69.4	0.0	0.0	0.0	0.0	17.3	0.0	0.0	0.1	0.0	1.8	24.7	0.8	48.1
Utah	203.0	109.9	16.9	0.0	34.8	0.0	41.4	21.9	0.0	72.6	0.0	23.5	2.6	16.5	80.4
COUT BAX-E	291.5	191.0	7.7	0.0	27.1	0.0	65.7	26.6	0.0	31.5	0.0	18.0	33.7	34.6	136.6
Colorado	86.7	69.4	0.0	0.0	0.0	0.0	17.3	0.0	0.0	0.1	0.0	1.8	24.7	0.8	48.1
Utah	204.8	121.6	7.7	0.0	27.1	0.0	48.4	26.6	0.0	31.4	0.0	16.2	9.0	33.8	88.5

NOTES:

¹Number 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.

²The 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.

³To ensure that all parallel linear facilities within 1,500 feet were captured, report included linear facilities within 2,000 feet of Project centerline.

kV = Kilovolt

**TABLE 3-170
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 within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Water/Wastewater Treatment Plant			Low	Moderate	High
COUT BAX-B	279.2	2.2	0.0	0.1	0.2	0.0	0.2	0.0	0.1	7.2	0.0	240.0	0.0	0.0	6.2	3.1	0.0	106	0	247.6	1.8	0.0
Colorado	86.7	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	6.9	0.0	85.6	0.0	0.0	0.6	1.0	0.0	5	0	85.6	0.0	0.0
Utah	192.5	2.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.3	0.0	154.4	0.0	0.0	5.6	2.1	0.0	101	0	162.0	1.8	0.0
COUT BAX-C	289.7	2.2	0.0	0.1	0.2	0.0	0.2	0.0	0.1	7.2	0.0	250.5	0.0	0.0	18.5	3.1	0.0	106	0	258.1	1.8	0.0
Colorado	86.7	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	6.9	0.0	85.6	0.0	0.0	0.6	1.0	0.0	5	0	85.6	0.0	0.0
Utah	203.0	2.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.3	0.0	164.9	0.0	0.0	17.9	2.1	0.0	101	0	172.5	1.8	0.0
COUT BAX-E	291.5	1.5	0.0	0.1	0.2	0.0	0.0	0.0	0.1	7.5	0.0	253.5	0.0	0.0	39.3	3.5	0.0	106	0	263.4	1.4	0.0
Colorado	86.7	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.1	6.9	0.0	85.6	0.0	0.0	0.6	1.0	0.0	5	0	85.6	0.0	0.0
Utah	204.8	1.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.6	0.0	167.9	0.0	0.0	38.7	2.4	0.0	101	0	177.8	1.4	0.0

NOTE: Existing residences within alternative route right-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.

Alternative Route	Total Miles	Extraction				Industrial (Final Plat)	Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/Concept Plan)	Recreation Trail (Final Plat)	Scenic Roads/Parkway (Preliminary Plat)	Transmission Line (Preliminary Plat)	Transmission Line (Final Plat)	Utilities		Vegetation Habitat Management (Final Plat)	Residual Impacts (miles)		
		Gas (Preliminary Plat)	Gas (Final Plat)	Mining (Preliminary Plat)	Mining (Final Plat)								Preliminary Plat	Approved /Concept Plan		Low	Moderate	High
COUT BAX-B	279.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	85.3	0.0	0.0	0.0	0.0	85.4	0.0	0.0
<i>Colorado</i>	86.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.6	0.0	0.0	0.0	0.0	33.6	0.0	0.0
<i>Utah</i>	192.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	51.7	0.0	0.0	0.0	0.0	51.8	0.0	0.0
COUT BAX-C	289.7	0.0	4.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	107.0	0.0	1.6	3.5	0.0	109.3	0.0	0.0
<i>Colorado</i>	86.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.6	0.0	0.0	0.0	0.0	33.6	0.0	0.0
<i>Utah</i>	203.0	0.0	4.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	73.4	0.0	1.6	3.5	0.0	75.7	0.0	0.0
COUT BAX-E	291.5	0.0	0.0	0.0	1.0	0.1	0.0	0.1	0.0	0.1	88.5	0.0	1.6	8.1	1.2	100.1	0.0	0.0
<i>Colorado</i>	86.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.6	0.0	0.0	0.0	0.0	33.6	0.0	0.0
<i>Utah</i>	204.8	0.0	0.0	0.0	1.0	0.1	0.0	0.1	0.0	0.1	54.9	0.0	1.6	8.1	1.2	66.5	0.0	0.0

TABLE 3-172 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									Residual Impacts (miles)		
		Agriculture	Commercial	Industrial	Rangeland	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Low	Moderate	High
COUT BAX-B	279.2	136.5	0.2	0.0	79.0	19.1	11.5	7.0	14.3	0.0	253.3	14.3	0.0
<i>Colorado</i>	<i>86.7</i>	<i>49.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>11.5</i>	<i>0.0</i>	<i>14.2</i>	<i>0.0</i>	<i>60.9</i>	<i>14.2</i>	<i>0.0</i>
<i>Utah</i>	<i>192.5</i>	<i>87.1</i>	<i>0.2</i>	<i>0.0</i>	<i>79.0</i>	<i>19.1</i>	<i>0.0</i>	<i>7.0</i>	<i>0.1</i>	<i>0.0</i>	<i>192.4</i>	<i>0.1</i>	<i>0.0</i>
COUT BAX-C	289.7	136.5	0.2	1.1	88.4	19.1	11.5	7.0	14.3	0.0	263.8	14.3	0.0
<i>Colorado</i>	<i>86.7</i>	<i>49.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>11.5</i>	<i>0.0</i>	<i>14.2</i>	<i>0.0</i>	<i>60.9</i>	<i>14.2</i>	<i>0.0</i>
<i>Utah</i>	<i>203.0</i>	<i>87.1</i>	<i>0.2</i>	<i>1.1</i>	<i>88.4</i>	<i>19.1</i>	<i>0.0</i>	<i>7.0</i>	<i>0.1</i>	<i>0.0</i>	<i>202.9</i>	<i>0.1</i>	<i>0.0</i>
COUT BAX-E	291.5	138.9	0.0	1.1	70.4	36.7	11.5	7.0	14.3	0.0	265.6	14.3	0.0
<i>Colorado</i>	<i>86.7</i>	<i>49.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>11.5</i>	<i>0.0</i>	<i>14.2</i>	<i>0.0</i>	<i>60.9</i>	<i>14.2</i>	<i>0.0</i>
<i>Utah</i>	<i>204.8</i>	<i>89.5</i>	<i>0.0</i>	<i>1.1</i>	<i>70.4</i>	<i>36.7</i>	<i>0.0</i>	<i>7.0</i>	<i>0.1</i>	<i>0.0</i>	<i>204.7</i>	<i>0.1</i>	<i>0.0</i>

Affected Environment (Colorado)

Existing Land Use

Alternative COUT BAX-B crosses agriculture outstructures, extractive mining, grazing allotments, pipeline and pipeline pump stations, transmission lines, coal mining, and vacant/undeveloped lands. 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 crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT BAX-B crosses land zoned as agriculture in Mesa, Moffat, and Rio Blanco counties, public/quasi-public in Garfield counties, and residential in Garfield and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT BAX-B would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT BAX-B would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-B would have a total of 14.2 miles of moderate impacts that occur where the reference centerline crosses land zoned for residential. There would not be any high impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-169 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT BAX-B in Utah.

Alternative COUT BAX-B crosses SITLA humic shale, mineral, oil and gas, potash, range improvement use leases and the abandoned White Sands Missile Launch Facility special use contract.

Alternative COUT BAX-B is located within a WWEC corridor for 5.1 miles and BLM-designated utility corridors within the BLM Moab, Price, and Richfield Field Offices for 83.8 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT BAX-B crosses communication facilities, transmission lines, general industrial, pipelines and/or pipeline pump stations, dryland farmland, irrigated farmland, grazing allotments, and vacant/undeveloped lands. 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 crosses a pipeline (approved/concept plan) and transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT BAX-B crosses land zoned as agriculture in Mount Pleasant and Emery, Grand, Juab, and Sanpete counties, commercial in Sanpete County, rangeland in Emery County, parks/preservation in Sanpete County, recreation in Juab County, and residential in the City of Nephi.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT BAX-B has a total of 1.8 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland. There are no high residual impacts on existing land use.

Future Land Use

Alternative COUT BAX-B would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-B would have 0.1 mile of moderate impacts that occur where the reference centerline crosses land zoned for residential.

Alternative COUT BAX-C

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-169 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT BAX-C in Colorado. Alternative COUT BAX-C does not cross state trust lands.

Alternative COUT BAX-C is located within a WWEC corridor for 0.8 mile and BLM-designated utility corridors in the BLM Grand Junction and White River Field Offices for 48.1 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT BAX-C crosses pipelines and/or pipeline pump stations, transmission lines, oil/gas extraction, coal mining, agricultural outstructures, grazing allotments, industrial, and vacant/undeveloped lands. 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 crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT BAX-C crosses land zoned as agriculture in Mesa, Moffat, and Rio Blanco counties, public/quasi-public in Garfield County, and residential in Garfield and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT BAX-C would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT BAX-C would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-C would have a total of 14.2 miles of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

Land Jurisdiction, State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-169 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT BAX-C in Utah.

Alternative COUT BAX-C crosses SITLA humic shale, mineral, oil and gas, potash, range improvement use leases and the abandoned White Sands Missile Launch Facility special use contract.

Alternative COUT BAX-C is located within a WWEC corridor for 16.5 miles and BLM-designated utility corridors within the BLM Moab, Price, and Richfield Field Offices for 80.4 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT BAX-C crosses a communication facility, transmission lines, general industrial, oil and gas extraction, dryland farmland, irrigated farmland, grazing allotments, and vacant/undeveloped land uses. 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 crosses a pipeline (approved/concept plan), transmission line (preliminary plat), utilities (preliminary and approved/concept plan), and gas extraction (final plat).

Zoning and General Plan Management Direction

Alternative COUT BAX-C crosses land zoned for agriculture in Mount Pleasant and Emery, Grand, Juab, and Sanpete counties, commercial in Sanpete County, industrial in Emery County, rangeland in Emery County, recreation in Juab County, parks/preservation in Sanpete County, and residential in the City of Nephi.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT BAX-C would have a total of 1.8 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland. There are no high residual impacts on existing land use.

Future Land Use

Alternative COUT BAX-C would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-C would have 0.1 mile of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

Alternative COUT BAX-E

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-169 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT BAX-E in Colorado. Alternative COUT BAX-E does not cross state trust lands.

Alternative COUT BAX-E is located within a WWEC corridor for 0.8 mile and BLM-designated utility corridors in the Grand Junction and White River Field Offices for 48.1 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT BAX-E crosses pipeline and pipeline pump stations, transmission lines, oil and gas extraction, dryland farmland, irrigated farmland, grazing allotments, and vacant/undeveloped lands. 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 crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT BAX-E crosses land zoned for agriculture in Mesa, Moffat, and Rio Blanco counties, public/quasi-public in Garfield County, and residential in Garfield and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT BAX-E would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT BAX-E would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-E would have a total of 14.2 mile of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-169 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT BAX-E in Utah.

Alternative COUT BAX-E crosses SITLA humic shale, mineral, oil and gas, potash, range improvement use leases and the abandoned White Sands Missile Launch Facility special use contract.

Alternative COUT BAX-E is located within a WWEC corridor for 33.8 miles and BLM-designated utility corridors within the Moab and Price Field Offices for 88.5 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT BAX-E crosses a communication facility, recreation cabins and properties used as seasonal residences, communication facilities, railroads, roads, pipelines, pipelines and/or pipeline pump

stations, transmission lines, general industrial, oil and gas extraction, dryland farmland, irrigated farmland, grazing allotments, and vacant/undeveloped land uses 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-E crosses extraction mining (final plat), industrial (final plat), pipeline (approved/concept plan, scenic roads/parkway (preliminary plat), transmission line (preliminary plat), utility (both preliminary plat and approved/concept plan), and vegetation habitat management plan (final plat).

Zoning and General Plan Management Direction

Alternative COUT BAX-E crosses land zoned for agriculture in Carbon, Grand, Juab, and Sanpete counties, industrial in Emery County, rangeland in Emery County, parks/preservation in Carbon and Sanpete counties, recreation in Juab County, and residential in the City of Nephi.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT BAX-E would have a total of 1.4 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland. There are no high residual impacts on existing land use.

Future Land Use

Alternative COUT BAX-E would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT BAX-E would have 0.1 mile of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

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

Table 3-173 reports land jurisdiction, state trust lands, parallel linear facilities within 1,500 feet of the alternative route, and utility corridors for COUT alternative routes. The baseline resource inventory and residual impacts for COUT alternative routes considered are presented in Tables 3-174 to 3-176.

Alternative COUT-A and Route Variation (COUT-A-1)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-A and route variation in Colorado.

Alternative COUT-A and route variation cross one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-A and route variation are located within a WWEC corridor for 9.0 miles and a BLM-designated utility corridor within the BLM White River Field Office for approximately 16.2 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-A and route variation cross coal mining, transmission lines, pipeline and pipeline pump stations, grazing allotments, and vacant/undeveloped land uses. Alternative COUT-A crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-A and route variation cross transmission line (preliminary plat) areas.

Zoning and General Plan Management Direction

Alternative COUT-A and route variation cross land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-A and route variation would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT-A and route variation would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-A and route variation would have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-A and route variation in Utah. Alternative COUT-A crosses SITLA oil and gas contract areas.

Alternative COUT-A and route variation are located within a WWEC corridor for 40.7 and 37.5 miles and within BLM (Salt Lake Field Office) and USFS (Uinta National Forest) designated utility corridors for 1.1 miles.

TABLE 3-173 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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
Alternative COUT-A and Route Variation															
COUT-A	206.0	55.4	20.0	0.0	24.8	0.0	105.8	8.4	0.0	104.0	0.0	37.2	11.1	49.7	17.3
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	182.0	39.2	20.0	0.0	20.7	0.0	102.1	6.4	0.0	84.8	0.0	13.8	7.2	40.7	1.1
COUT-A-1	205.6	55.4	20.0	0.0	24.8	0.0	105.8	8.4	0.0	104.0	0.0	37.2	11.1	46.5	17.2
Colorado	181.6	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	24.0	39.2	19.6	0.0	20.7	0.0	102.1	6.4	0.0	84.8	0.0	13.8	7.2	37.5	1.1
Alternative COUT-B and Route Variations															
COUT-B	216.0	56.2	19.1	0.0	26.4	7.8	106.5	17.2	0.0	83.2	0.0	59.1	10.9	38.9	22.9
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	192.0	40.0	19.1	0.0	22.3	7.8	102.8	15.2	0.0	64.0	0.0	35.7	7.0	29.8	6.7
COUT-B-1	212.7	61.6	20.9	0.0	23.2	7.8	99.2	10.0	0.0	83.2	0.0	54.2	10.9	38.9	22.7
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	188.7	45.4	20.9	0.0	19.1	7.8	95.5	8.0	0.0	64.0	0.0	30.8	7.0	29.8	6.5
COUT-B-2	214.2	58.8	20.5	0.0	26.0	7.8	101.1	10.9	0.0	83.2	0.0	54.2	10.9	38.9	22.7
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	190.2	42.6	20.5	0.0	21.9	7.8	97.4	8.9	0.0	64.0	0.0	30.8	7.0	29.8	6.5
COUT-B-3	213.9	58.4	19.1	0.0	25.2	7.8	103.4	11.9	0.0	83.2	0.0	56.3	10.9	38.9	22.7
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	189.9	42.2	19.1	0.0	21.1	7.8	99.7	9.9	0.0	64.0	0.0	32.9	7.0	29.8	6.5

TABLE 3-173 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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
COUT-B-4	214.2	58.8	20.5	0.0	25.2	7.8	101.9	11.3	0.0	83.2	0.0	56.3	10.9	38.9	22.7
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	190.2	42.6	20.5	0.0	21.1	7.8	98.2	9.3	0.0	64.0	0.0	32.9	7.0	29.8	6.5
COUT-B-5	213.9	58.4	19.1	0.0	26.0	7.8	102.6	11.5	0.0	83.2	0.0	54.2	10.9	38.9	22.7
Colorado	24.0	16.2	0.0	0.0	4.1	0.0	3.7	2.0	0.0	19.2	0.0	23.4	3.9	9.0	16.2
Utah	189.9	42.2	19.1	0.0	21.9	7.8	98.9	9.5	0.0	64.0	0.0	30.8	7.0	29.8	6.5
Alternative COUT-C and Route Variations															
COUT-C	209.8	91.2	9.2	0.0	31.1	2.7	75.6	22.6	0.0	83.7	0.0	44.5	27.4	14.3	21.2
Colorado	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
Utah	185.0	73.1	9.2	0.0	27.3	2.7	72.7	20.8	0.0	59.2	0.0	24.5	23.2	7.3	6.7
COUT-C-1	206.4	98.2	11.0	0.0	28.9	2.7	65.6	16.3	0.0	83.7	0.0	43.3	27.4	14.3	21.1
Colorado	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
Utah	181.6	80.1	11.0	0.0	25.1	2.7	62.7	14.5	0.0	59.2	0.0	23.3	23.2	7.3	6.5
COUT-C-2	207.9	95.4	10.6	0.0	31.7	2.7	67.5	17.2	0.0	83.7	0.0	43.3	27.4	14.3	21.1
Colorado	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
Utah	183.1	77.3	10.6	0.0	27.9	2.7	64.6	15.4	0.0	59.2	0.0	23.3	23.2	7.3	6.5

TABLE 3-173 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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
COUT-C-3 (Agency Preferred Alternative)	207.6	95.0	9.2	0.0	31.7	2.7	69.0	17.7	0.0	83.7	0.0	43.3	27.4	14.3	21.1
<i>Colorado</i>	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
<i>Utah</i>	182.8	76.9	9.2	0.0	27.9	2.7	66.1	15.9	0.0	59.2	0.0	23.3	23.2	7.3	6.5
COUT-C-4	207.9	95.6	10.6	0.0	33.7	2.7	65.3	18.9	0.0	83.7	0.0	43.3	27.4	14.3	21.1
<i>Colorado</i>	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
<i>Utah</i>	182.8	77.5	10.6	0.0	29.9	2.7	62.4	17.1	0.0	59.2	0.0	23.3	23.2	7.3	6.5
COUT-C-5	207.6	95.2	9.2	0.0	33.7	2.7	66.8	22.6	0.0	83.7	0.0	43.3	27.4	14.3	21.1
<i>Colorado</i>	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
<i>Utah</i>	185.0	77.1	9.2	0.0	29.9	2.7	63.9	20.8	0.0	59.2	0.0	23.3	23.2	7.3	6.5
Alternatives COUT-H and COUT-I															
COUT-H (Applicant Preferred Alternative)	200.6	96.2	7.7	0.0	25.6	2.7	68.4	19.8	0.0	49.8	0.0	40.2	36.5	7.8	19.4
<i>Colorado</i>	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
<i>Utah</i>	175.8	78.1	7.7	0.0	21.8	2.7	65.5	18.0	0.0	25.3	0.0	20.2	32.3	0.8	4.8

**TABLE 3-173
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}					Within West-wide Energy Corridor Utility Corridor (miles)	Within 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		500kV	345kV	230kV	138kV	Pipeline		
COUT-I	240.2	123.1	16.9	0.0	36.0	2.7	61.5	34.4	0.0	84.5	0.0	44.8	28.4	8.4	30.6
Colorado	24.8	18.1	0.0	0.0	3.8	0.0	2.9	1.8	0.0	24.5	0.0	20.0	4.2	7.0	14.6
Utah	215.4	105.0	16.9	0.0	32.2	2.7	58.6	32.6	0.0	60.0	0.0	24.8	24.2	1.4	16.0

NOTES:

¹Number 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.

²The 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.

³To ensure that all parallel linear facilities within 1,500 feet were captured, report included linear facilities within 2,000 feet of Project centerline.

kV = Kilovolt

**TABLE 3-174
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 within 0.25 mile	Residences within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Water/Wastewater Treatment Plant			Low	Moderate	High
Alternative COUT-A and Route Variation																						
COUT-A	206.0	7.3	0.0	0.0	2.1	0.0	0.1	0.0	0.6	7.7	0.0	86.0	0.3	6.2	13.2	0.8	0.4	214	3	111.8	13.4	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	0.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	182.0	7.3	0.0	0.0	0.0	0.0	0.1	0.0	0.6	7.3	0.0	62.0	0.3	6.2	13.0	0.6	0.4	214	3	87.8	13.4	0.0
COUT-A-1	205.6	7.3	0.0	0.0	2.1	0.0	0.1	0.0	0.6	7.7	0.0	85.6	0.3	6.2	12.9	0.8	0.4	214	3	111.4	13.4	0.0
Colorado	181.6	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	0.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	24.0	7.3	0.0	0.0	0.0	0.0	0.1	0.0	0.6	7.3	0.0	61.6	0.3	6.2	12.7	0.6	0.4	214	3	87.4	13.4	0.0
Alternative COUT-B and Route Variations																						
COUT-B	216.0	5.5	0.1	0.0	2.9	0.1	0.1	0.0	0.5	2.3	0.0	101.5	1.0	5.1	55.2	1.4	0.4	199	12	137.7	11.7	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	0.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	192.0	5.5	0.1	0.0	0.8	0.1	0.1	0.0	0.5	1.9	0.0	77.5	1.0	5.1	55.0	1.2	0.4	199	12	113.7	11.7	0.0
COUT-B-1	212.7	5.5	0.1	0.0	2.1	0.1	0.1	0.0	0.5	2.3	0.0	102.8	1.0	5.0	48.2	1.7	0.4	206	11	133.2	11.6	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	0.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	188.7	5.5	0.1	0.0	0.0	0.1	0.1	0.0	0.5	1.9	0.0	78.8	1.0	5.0	48.0	1.5	0.4	206	11	109.2	11.6	0.0
COUT-B-2	214.2	5.5	0.1	0.0	2.1	0.1	0.1	0.0	0.5	2.3	0.0	104.3	0.9	5.0	48.2	1.5	0.4	197	11	134.5	11.5	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	0.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	190.2	5.5	0.1	0.0	0.0	0.1	0.1	0.0	0.5	1.9	0.0	80.3	0.9	5.0	48.0	1.3	0.4	197	11	110.5	11.5	0.0
COUT-B-3	213.9	5.5	0.1	0.0	2.1	0.1	0.1	0.0	0.5	2.3	0.0	102.2	1.0	5.0	48.3	1.3	0.4	206	12	131.5	11.6	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	1.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	189.9	5.5	0.1	0.0	0.0	0.1	0.1	0.0	0.5	1.9	0.0	78.2	1.0	5.0	48.1	1.1	0.4	206	12	107.5	11.6	0.0

TABLE 3-174 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 within 0.25 mile	Residences within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Water/Wastewater Treatment Plant			Low	Moderate	High
COUT-B-4	214.2	5.5	0.1	0.0	2.1	0.1	0.1	0.0	0.5	2.3	0.0	103.5	1.0	5.0	48.3	1.5	0.4	207	12	133.2	11.6	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	1.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	190.2	5.5	0.1	0.0	0.0	0.1	0.1	0.0	0.5	1.9	0.0	79.5	1.0	5.0	48.1	1.3	0.4	207	12	109.2	11.6	0.0
COUT-B-5	213.9	5.5	0.1	0.0	2.1	0.1	0.1	0.0	0.5	2.3	0.0	103.0	0.9	5.0	48.2	1.3	0.4	196	11	132.8	11.5	0.0
Colorado	24.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.4	0.0	24.0	0.0	0.0	0.2	0.2	0.0	0	0	24.0	0.0	0.0
Utah	189.9	5.5	0.1	0.0	0.0	0.1	0.1	0.0	0.5	1.9	0.0	79.0	0.9	5.0	48.0	1.1	0.4	196	11	108.8	11.5	0.0
Alternative COUT-C and Route Variations																						
COUT-C	209.8	0.9	0.0	0.1	2.9	0.0	0.0	0.0	1.1	1.8	0.0	134.9	0.0	0.6	17.3	0.9	0.0	98	1	154.2	1.5	0.0
Colorado	24.8	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.5	0.0	24.8	0.0	0.0	0.2	0.1	0.0	0	0	24.8	0.0	0.0
Utah	185.0	0.9	0.0	0.1	0.8	0.0	0.0	0.0	1.1	1.3	0.0	110.1	0.0	0.6	17.1	0.8	0.0	98	1	129.4	1.5	0.0
COUT-C-1	206.4	0.7	0.0	0.1	2.1	0.0	0.0	0.0	1.1	1.8	0.0	141.6	0.1	0.5	10.4	1.2	0.0	114	1	154.6	1.3	0.0
Colorado	24.8	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.5	0.0	24.8	0.0	0.0	0.2	0.1	0.0	0	0	24.8	0.0	0.0
Utah	181.6	0.7	0.0	0.1	0.0	0.0	0.0	0.0	1.1	1.3	0.0	116.8	0.1	0.5	10.2	1.1	0.0	114	1	129.8	1.3	0.0
COUT-C-2	207.9	0.7	0.0	0.1	2.1	0.0	0.0	0.0	1.1	1.8	0.0	143.1	0.0	0.5	10.4	1.0	0.0	105	1	155.9	1.2	0.0
Colorado	24.8	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.5	0.0	24.8	0.0	0.0	0.2	0.1	0.0	0	0	24.8	0.0	0.0
Utah	183.1	0.7	0.0	0.1	0.0	0.0	0.0	0.0	1.1	1.3	0.0	118.3	0.0	0.5	10.2	0.9	0.0	105	1	131.1	1.2	0.0
COUT-C-3 (Agency Preferred Alternative)	207.6	0.7	0.0	0.1	2.1	0.0	0.0	0.0	1.1	1.8	0.0	141.8	0.0	0.5	10.4	0.8	0.0	104	1	154.2	1.2	0.0
Colorado	24.8	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.5	0.0	24.8	0.0	0.0	0.2	0.1	0.0	0	0	24.8	0.0	0.0
Utah	182.8	0.7	0.0	0.1	0.0	0.0	0.0	0.0	1.1	1.3	0.0	117.0	0.0	0.5	10.2	0.7	0.0	104	1	129.4	1.2	0.0

TABLE 3-174 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 within 0.25 mile	Residences within 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	Oil/Gas Extraction Pads	Pipeline and Pipeline Pump Station	Power Plant/Wind Farm	Grazing Allotments	Residential	Residential Mixed Use (Authorized)	Transmission Line	Vacant/Undeveloped	Water Tower/Water/Wastewater Treatment Plant			Low	Moderate	High
COUT-C-4	207.9	0.7	0.0	0.1	2.1	0.0	0.0	0.0	1.1	1.8	0.0	142.7	0.0	0.5	10.4	1.0	0.0	107	1	154.3	1.2	0.0
<i>Colorado</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.5</i>	<i>0.0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>	<i>0.0</i>	<i>0</i>	<i>0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>182.8</i>	<i>0.7</i>	<i>0.0</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.1</i>	<i>1.3</i>	<i>0.0</i>	<i>117.9</i>	<i>0.0</i>	<i>0.5</i>	<i>10.2</i>	<i>0.9</i>	<i>0.0</i>	<i>107</i>	<i>1</i>	<i>129.5</i>	<i>1.2</i>	<i>0.0</i>
COUT-C-5	207.6	0.7	0.0	0.1	2.1	0.0	0.0	0.0	1.1	1.8	0.0	141.4	0.0	0.5	10.4	0.8	0.0	106	1	152.6	1.2	0.0
<i>Colorado</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.5</i>	<i>0.0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>	<i>0.0</i>	<i>0</i>	<i>0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>185.0</i>	<i>0.7</i>	<i>0.0</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.1</i>	<i>1.3</i>	<i>0.0</i>	<i>116.6</i>	<i>0.0</i>	<i>0.5</i>	<i>10.2</i>	<i>0.7</i>	<i>0.0</i>	<i>106</i>	<i>1</i>	<i>127.8</i>	<i>1.2</i>	<i>0.0</i>
Alternatives COUT-H and COUT-I																						
COUT-H (Applicant Preferred Alternative)	200.6	1.8	0.0	0.1	2.4	0.0	0.2	0.0	1.1	2.1	0.0	147.1	0.0	0.0	8.2	1.3	0.0	147	0	160.2	1.8	0.0
<i>Colorado</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.5</i>	<i>0.0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>	<i>0.0</i>	<i>0</i>	<i>0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>175.8</i>	<i>1.8</i>	<i>0.0</i>	<i>0.1</i>	<i>0.2</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>	<i>1.1</i>	<i>1.6</i>	<i>0.0</i>	<i>122.3</i>	<i>0.0</i>	<i>0.0</i>	<i>8.0</i>	<i>1.2</i>	<i>0.0</i>	<i>147</i>	<i>0</i>	<i>135.4</i>	<i>1.8</i>	<i>0.0</i>
COUT-I	240.2	2.2	0.0	0.1	2.1	0.0	0.0	0.0	1.3	2.0	0.0	183.9	0.0	0.0	7.0	1.0	0.0	99	0	195.7	1.9	0.0
<i>Colorado</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.5</i>	<i>0.0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>	<i>0.0</i>	<i>0</i>	<i>0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>215.4</i>	<i>2.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.3</i>	<i>1.5</i>	<i>0.0</i>	<i>159.1</i>	<i>0.0</i>	<i>0.0</i>	<i>6.8</i>	<i>0.9</i>	<i>0.0</i>	<i>99</i>	<i>0</i>	<i>170.9</i>	<i>1.9</i>	<i>0.0</i>
NOTE: Existing residences within alternative route right-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 3-175
ALTERNATIVE ROUTE COMPARISON FOR FUTURE 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	Extraction				Industrial (Final Plat)	Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/Concept Plan)	Recreation Trail (Final Plat)	Scenic Roads/Parkway (Preliminary Plat)	Transmission Line (Preliminary Plat)	Transmission Line (Final Plat)	Utilities		Vegetation Habitat Management (Final Plat)	Residual Impacts (miles)		
		Gas (Preliminary Plat)	Gas (Final Plat)	Mining (Preliminary Plat)	Mining (Final Plat)								Preliminary Plat	Approved /Concept Plan		Low	Moderate	High
Alternative COUT-A and Route Variation																		
COUT-A	206.0	0.0	0.3	0.0	0.0	0.0	1.2	0.0	0.1	0.0	59.2	0.0	0.0	0.0	0.0	60.8	0.0	0.0
<i>Colorado</i>	<i>24.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>182.0</i>	<i>0.0</i>	<i>0.3</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.2</i>	<i>0.0</i>	<i>0.1</i>	<i>0.0</i>	<i>52.3</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>53.9</i>	<i>0.0</i>	<i>0.0</i>
COUT-A-1	205.6	0.0	0.3	0.0	0.0	0.0	1.2	0.0	0.1	0.0	57.9	0.0	0.0	0.0	0.0	59.5	0.0	0.0
<i>Colorado</i>	<i>181.6</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>24.0</i>	<i>0.0</i>	<i>0.3</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.2</i>	<i>0.0</i>	<i>0.1</i>	<i>0.0</i>	<i>51.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>52.6</i>	<i>0.0</i>	<i>0.0</i>
Alternative COUT-B and Route Variations																		
COUT-B	216.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	118.6	0.0	0.0	0.0	0.0	118.8	0.0	0.0
<i>Colorado</i>	<i>24.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>192.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>	<i>111.7</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>111.9</i>	<i>0.0</i>	<i>0.0</i>
COUT-B-1	212.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	107.1	0.0	0.0	0.0	0.0	107.3	0.0	0.0
<i>Colorado</i>	<i>24.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>188.7</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>	<i>100.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>100.4</i>	<i>0.0</i>	<i>0.0</i>
COUT-B-2	214.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	106.8	0.0	0.0	0.0	0.0	107.0	0.0	0.0
<i>Colorado</i>	<i>24.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>190.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>	<i>99.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>100.1</i>	<i>0.0</i>	<i>0.0</i>
COUT-B-3	213.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	109.4	0.0	0.0	0.0	0.0	109.6	0.0	0.0
<i>Colorado</i>	<i>24.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>189.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>	<i>102.5</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>102.7</i>	<i>0.0</i>	<i>0.0</i>
COUT-B-4	214.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	104.7	0.0	0.0	0.0	0.0	104.9	0.0	0.0
<i>Colorado</i>	<i>24.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>6.9</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>190.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>	<i>97.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>98.0</i>	<i>0.0</i>	<i>0.0</i>

**TABLE 3-175
ALTERNATIVE ROUTE COMPARISON FOR FUTURE 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	Extraction				Industrial (Final Plat)	Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/Concept Plan)	Recreation Trail (Final Plat)	Scenic Roads/Parkway (Preliminary Plat)	Transmission Line (Preliminary Plat)	Transmission Line (Final Plat)	Utilities		Vegetation Habitat Management (Final Plat)	Residual Impacts (miles)		
		Gas (Preliminary Plat)	Gas (Final Plat)	Mining (Preliminary Plat)	Mining (Final Plat)								Preliminary Plat	Approved /Concept Plan		Low	Moderate	High
COUT-B-5	213.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	111.5	0.0	0.0	0.0	0.0	111.7	0.0	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	6.9	0.0	0.0
Utah	189.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	104.6	0.0	0.0	0.0	0.0	104.8	0.0	0.0
Alternative COUT-C and Route Variation																		
COUT-C	209.8	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	112.9	0.0	0.0	0.0	0.0	114.2	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	185.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	106.9	0.0	0.0	0.0	0.0	108.2	0.0	0.0
COUT-C-1	206.4	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	99.9	0.0	0.0	0.0	0.0	101.2	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	181.6	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	93.9	0.0	0.0	0.0	0.0	95.2	0.0	0.0
COUT-C-2	207.9	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	99.6	0.0	0.0	0.0	0.0	100.9	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	183.1	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	93.6	0.0	0.0	0.0	0.0	94.9	0.0	0.0
COUT-C-3 (Agency Preferred Alternative)	207.6	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	104.3	0.0	0.0	0.0	0.0	105.6	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	182.8	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	98.3	0.0	0.0	0.0	0.0	99.6	0.0	0.0
COUT-C-4	207.9	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	86.9	0.0	0.0	0.0	0.0	88.2	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	182.8	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	80.9	0.0	0.0	0.0	0.0	88.2	0.0	0.0
COUT-C-5	207.6	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	91.6	0.0	0.0	0.0	0.0	92.9	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	185.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.2	0.0	85.6	0.0	0.0	0.0	0.0	86.9	0.0	0.0

**TABLE 3-175
ALTERNATIVE ROUTE COMPARISON FOR FUTURE 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	Extraction				Industrial (Final Plat)	Non-developable Open Space (Preliminary Plat)	Pipeline (Approved/Concept Plan)	Recreation Trail (Final Plat)	Scenic Roads/Parkway (Preliminary Plat)	Transmission Line (Preliminary Plat)	Transmission Line (Final Plat)	Utilities		Vegetation Habitat Management (Final Plat)	Residual Impacts (miles)		
		Gas (Preliminary Plat)	Gas (Final Plat)	Mining (Preliminary Plat)	Mining (Final Plat)								Preliminary Plat	Approved /Concept Plan		Low	Moderate	High
Alternatives COUT-H and COUT-I																		
COUT-H (Applicant Preferred Alternative)	200.6	0.0	10.3	0.0	1.0	0.1	0.0	0.1	0.0	0.1	110.1	0.0	0.0	0.0	1.2	113.1	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	175.8	0.0	10.3	0.0	1.0	0.1	0.0	0.1	0.0	0.1	104.1	0.0	0.0	0.0	1.2	107.1	0.0	0.0
COUT-I	240.2	0.0	10.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	94.8	0.0	0.0	0.0	0.0	96.0	0.0	0.0
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Utah	215.4	0.0	10.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	88.8	0.0	0.0	0.0	0.0	90.0	0.0	0.0

TABLE 3-176 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									Residual Impacts (miles)		
		Agriculture	Commercial	Industrial	Rangeland	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Low	Moderate	High
Alternative COUT-A and Route Variation													
COUT-A	206.0	100.0	0.8	1.2	42.0	50.4	0.0	9.6	0.7	1.2	203.6	1.9	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	182.0	76.0	0.8	1.2	42.0	50.4	0.0	9.6	0.7	1.2	179.6	1.9	0.0
COUT-A-1	205.6	100.0	0.8	1.2	42.0	50.0	0.0	9.6	0.7	1.2	204.0	1.9	0.0
Colorado	181.6	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	24.0	76.0	0.8	1.2	42.0	50.0	0.0	9.6	0.7	1.2	179.6	1.9	0.0
Alternative COUT-B and Route Variations													
COUT-B	216.0	117.3	0.2	1.2	42.0	37.2	0.0	9.6	0.7	0.0	207.5	0.7	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	192.0	93.3	0.2	1.2	42.0	37.2	0.0	9.6	0.7	0.0	183.5	0.7	0.0
COUT-B-1	212.7	112.3	0.2	1.2	42.0	38.9	0.0	9.6	0.7	0.0	204.2	0.7	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	188.7	88.3	0.2	1.2	42.0	38.9	0.0	9.6	0.7	0.0	180.2	0.7	0.0
COUT-B-2	214.2	113.8	0.2	1.2	42.0	38.9	0.0	9.6	0.7	0.0	205.7	0.7	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	190.2	89.8	0.2	1.2	42.0	38.9	0.0	9.6	0.7	0.0	181.7	0.7	0.0
COUT-B-3	213.9	114.6	0.2	1.2	42.0	37.8	0.0	9.6	0.7	0.0	205.4	0.7	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	189.9	90.6	0.2	1.2	42.0	37.8	0.0	9.6	0.7	0.0	181.4	0.7	0.0
COUT-B-4	214.2	113.8	0.2	1.2	42.0	38.9	0.0	9.6	0.7	0.0	205.7	0.7	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	190.2	89.8	0.2	1.2	42.0	38.9	0.0	9.6	0.7	0.0	181.7	0.7	0.0

TABLE 3-176 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									Residual Impacts (miles)		
		Agriculture	Commercial	Industrial	Rangeland	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Low	Moderate	High
COUT-B-5	213.9	114.6	0.2	1.2	42.0	37.8	0.0	9.6	0.7	0.0	205.4	0.7	0.0
Colorado	24.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.0	0.0	0.0
Utah	189.9	90.6	0.2	1.2	42.0	37.8	0.0	9.6	0.7	0.0	181.4	0.7	0.0
Alternative COUT-C and Route Variations													
COUT-C	209.8	93.6	0.0	0.0	54.9	51.5	0.0	9.6	0.2	0.0	209.6	0.2	0.0
Colorado	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
Utah	185.0	68.8	0.0	0.0	54.9	51.5	0.0	9.6	0.2	0.0	184.8	0.2	0.0
COUT-C-1	206.4	103.1	0.0	0.0	54.9	38.6	0.0	9.6	0.2	0.0	206.2	0.2	0.0
Colorado	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
Utah	181.6	78.3	0.0	0.0	54.9	38.6	0.0	9.6	0.2	0.0	181.4	0.2	0.0
COUT-C-2	207.9	104.6	0.0	0.0	54.9	38.6	0.0	9.6	0.2	0.0	207.7	0.2	0.0
Colorado	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
Utah	183.1	79.8	0.0	0.0	54.9	38.6	0.0	9.6	0.2	0.0	182.9	0.2	0.0
COUT-C-3 (Agency Preferred Alternative)	207.6	105.4	0.0	0.0	54.9	37.5	0.0	9.6	0.2	0.0	207.4	0.2	0.0
Colorado	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
Utah	182.8	80.6	0.0	0.0	54.9	37.5	0.0	9.6	0.2	0.0	182.6	0.2	0.0
COUT-C-4	207.9	100.3	0.0	0.0	54.9	42.9	0.0	9.6	0.2	0.0	207.7	0.2	0.0
Colorado	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
Utah	182.8	75.5	0.0	0.0	54.9	42.9	0.0	9.6	0.2	0.0	182.9	0.2	0.0
COUT-C-5	207.6	101.1	0.0	0.0	54.9	41.8	0.0	9.6	0.2	0.0	207.4	0.2	0.0
Colorado	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
Utah	185.0	76.3	0.0	0.0	54.9	41.8	0.0	9.6	0.2	0.0	182.6	0.2	0.0

TABLE 3-176 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									Residual Impacts (miles)		
		Agriculture	Commercial	Industrial	Rangeland	Parks/Preservation	Public/Quasi-Public	Recreation	Residential	Residential (Mixed Use)	Low	Moderate	High
Alternatives COUT-H and COUT-I													
COUT-H (Applicant Preferred Alternative)	200.6	85.8	0.0	0.4	57.5	49.6	0.0	7.0	0.3	0.0	200.3	0.3	0.0
<i>Colorado</i>	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	175.8	61.0	0.0	0.4	57.5	49.6	0.0	7.0	0.3	0.0	175.5	0.3	0.0
COUT-I	240.2	95.3	0.2	0.0	96.7	40.9	0.0	7.0	0.1	0.0	240.1	0.1	0.0
<i>Colorado</i>	24.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	215.4	70.5	0.2	0.0	96.7	40.9	0.0	7.0	0.1	0.0	215.3	0.1	0.0

Affected Environment (Utah)

Existing Land Use

Alternative COUT-A crosses pipelines and pipeline pump stations (including the Roosevelt pipeline), irrigated farmland, center-pivot agriculture, transmission lines, residential, light industrial, oil/gas extraction, grazing allotments, and vacant/undeveloped land uses. 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

Route Variation COUT-A-1 route variation has several differences in the existing land uses crossed for grazing allotments and transmission lines (Table 3-174).

Future Land Use

Alternative COUT-A and route variation crosses gas extraction (final plat), non-developable open space (preliminary plat), recreation trail (final plat), and transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-A crosses land zoned as agriculture in Ballard as well as Duchesne, Juab, Uintah, and Utah counties; commercial in Duchesne County; industrial in Ballard; rangeland in Duchesne and Uintah counties; parks/preservation in Ballard as well as Sanpete, Utah, and Wasatch counties; recreation in Juab County, residential in Ballard as well as Utah County; and residential (mixed use) in Wasatch County.

Route Variation COUT-A-1 crosses 0.4 fewer mile of land zoned for parks/preservation than Alternative COUT-A.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-A and route variation would have 13.4 miles of moderate residual impacts associated on existing land use. These residual impacts would occur where the reference centerline crosses 7.2 miles of agriculture (center pivot sprinkler irrigation and irrigated farmland), 0.3 mile residential, and 6.2 miles of residential mixed use (authorized) land uses. There would be no high residual impacts on existing land use.

Future Land Use

Alternative COUT-A and route variation would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-A and route variation would have a total of 1.9 miles of moderate residual impacts that would occur where the reference centerline crosses 0.7 mile of residential and 1.2 miles of residential

mixed use (authorized). There would be no high residual impacts on zoning and general plan management direction.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-B and route variations in Colorado.

Alternative COUT-B and route variations cross one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-B and route variations are located within a WWEC corridor for 9.0 miles and a BLM-designated utility corridor within the White River Field Office for 16.2 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-B crosses grazing allotments, transmission lines, pipeline and pipeline pump facilities, coal mining, and vacant/undeveloped land uses. Alternative COUT-B crosses authorized state oil and/or gas leases.

Route Variations COUT-B-3 and COUT-B-4 cross 1.0 mile versus 0.2 mile of transmission line for Alternative COUT-B and Route Variations COUT-B-1, COUT-B-2, and COUT-B-5.

Future Land Use

Alternative COUT-B and route variations cross a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-B and route variations cross land zoned for agriculture in Moffat County.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-B and route variations would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT-B and route variations would have no high or moderate residual impacts on future land uses.

Zoning and General Plan Management Direction

Alternative COUT-B and route variations have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-A and route variation in Utah. Alternative COUT-B crosses SITLA oil and gas leases.

Alternative COUT-B and route variations are located within a WWEC corridor for 29.8 miles and within BLM (Price and Salt Lake Field Offices) and USFS (Uinta National Forest) designated utility corridors for 6.7 and 6.5 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-B crosses communication facilities, railroads, roads, pipelines, transmission lines, flood-control facilities, residential, light industrial, oil/gas extraction, extraction mining, a cemetery, irrigated farmland, center-pivot agriculture, rangeland, and vacant/undeveloped land uses. 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

Alternative COUT-B route variations have several differences in the mileages of the existing land uses crossed. These occur for extraction mining, grazing allotments, residential, residential-mixed use (authorized), transmission line and vacant/undeveloped land uses (Table 3-174).

Future Land Use

Alternative COUT-B crosses a recreation trail (final plat) and transmission line (preliminary plat).

Alternative COUT-B route variations have several differences in the mileages of the future land uses crossed (Table 3-175). These occur for transmission line land uses, varying from 97.8 to 111.7 miles crossed.

Zoning and General Plan Management Direction

Alternative COUT-B crosses land zoned for agriculture in Ballard as well as Duchesne, Juab, Uintah, and Utah counties; commercial in Duchesne County; industrial in Ballard; as well as Duchesne and Uintah counties; rangeland in Uintah County; parks/preservation in Ballard as well as Carbon, Sanpete, Utah, and Wasatch counties; recreation in Juab County; and residential in Ballard as well as Utah County.

Alternative COUT-B route variations in Utah do not cross parks/preservation zoning in Carbon County. There are also several differences in the mileages crossed of zoning and general plan management direction (Table 3-172). These differences occur for agriculture and parks/preservation.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-B would have a total of 11.7 miles of moderate residual impacts associated with this alternative route. These residual impacts occur where the reference centerline crosses irrigated farmland for 4.4 miles, 1.1 mile of center-pivot agriculture, the Ioka West cemetery (also known as the old Ioka cemetery) for 0.1 mile, residential (single-family) for 1.0 mile, and residential mixed use (authorized) for 5.1 miles. There are no high residual impacts on existing land use.

Alternative COUT-B route variations would have differences in the mileages of moderate residual impacts. These occur where the alternative routes would cross residential and residential mixed use (authorized) land uses (Table 3-174).

Future Land Use

Alternative COUT-B and route variations would have no moderate or high residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-B and route variations would have a total of 0.7 mile of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There would have no high residual impacts on zoning and general plan management direction.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-C and route variations in Colorado.

Alternative COUT-C and route variations cross one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-C and route variation are located within a WWEC corridor for 7.0 miles and a BLM-designated utility corridor within the BLM White River Field Office for 14.6 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-C and route variations cross grazing allotments, pipelines and/or pipeline pump stations, transmission lines, coal mining, and vacant/undeveloped land uses. Alternative COUT-C crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-C and route variations crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-C and route variations cross land zoned for agriculture in Moffat and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-C and route variations would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT-C and route variations would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-C and route variations have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-C and route variations in Utah.

Alternative COUT-C and route variations cross SITLA leases for oil and gas, gilsonite mining, oil shale, and range improvement leases.

Alternative COUT-C and route variations are located within a WWEC corridor for 7.3 miles and within BLM (Price and Salt Lake Field Offices) and USFS (Uinta National Forest) designated utility corridors for 6.7 and 6.5 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-C crosses communication facilities; pipelines and/or pipeline pump stations, transmission line, residential, oil/gas extraction, extraction mining, irrigated farmland, grazing allotments, residential mixed use (authorized), and vacant/undeveloped land uses. 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

Alternative COUT-C route variations have several differences in the mileages of the existing land uses crossed (Table 3-174). These occur for extractive mining, grazing allotments, residential mixed use (authorized), transmission line, and vacant/undeveloped lands.

Future Land Use

Alternative COUT-C crosses gas extraction (final plat), a recreation trail (final plat), and a transmission line (preliminary plat).

Alternative COUT-C route variations have differences in the mileages of the future land uses crossed. These occur where route variations would cross transmission lines (preliminary plat) (Table 3-175).

Zoning and General Plan Management Direction

Alternative COUT-C crosses land zoned for agriculture in Duchesne, Juab, and Utah counties; rangeland in Uintah County; recreation in Juab County; parks/preservation in Carbon, Sanpete, Utah, and Wasatch counties; and residential in Utah County.

In Carbon County, Route Variations COUT-C-1, COUT-C-2, and COUT-C-3 do not cross land zoned for parks/preservation, but Route Variations COUT-C-4 and COUT-C-5 do.

Alternative COUT-C route variations have several differences in the mileages crossed. These occur for land zoned for agriculture, rangeland, parks/preservation, recreation, and residential (Table 3-172).

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-C

Alternative COUT-C would have a total of 1.5 miles of moderate residual impacts that occur where the reference centerline crosses residential mixed use (authorized) for 0.6 mile and irrigated farmland for 0.9 mile. There are no high residual impacts on existing land use.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Alternative COUT-C route variations would have several differences in the mileages of the existing land uses crossed (Table 3-174). These occur for residential, residential mixed use (authorized), and irrigated farmland.

Future Land Use

Alternative COUT-C and route variations would have no moderate or high residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-C and route variations would have 0.2 mile moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

Alternative COUT-H (Applicant Preferred Alternative)

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-H in Colorado.

Alternative COUT-H crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-H is located within a WWEC corridor for 7.0 miles and a BLM-designated utility corridor within the White River Field Office for 14.6 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-H crosses pipelines and/or pipeline pump stations, transmission lines, coal mining, grazing allotments, and vacant/undeveloped land uses. Alternative COUT-H crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-H crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-H crosses land zoned for agriculture in Moffat and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-H would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT-H would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-H would have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-H in Utah.

Alternative COUT-H crosses SITLA leases for gilsonite mining, oil and gas, oil shale, and range improvement.

Alternative COUT-H is located within a WWEC corridor for 0.8 mile and a BLM-designated utility corridor within the BLM Price Field Office for 4.8 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-H crosses irrigated farmland, communication facilities, oil and gas extraction, residential (an area where recreation cabins and properties used as seasonal residences), pipelines and/or pipeline pump stations, grazing allotments, transmission lines, and vacant/undeveloped land uses. Alternative COUT-C 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 crosses gas extraction (final plat), extraction mining (final plat), industrial (final plat), pipeline (approved/concept plan), scenic roads/parkway (preliminary plat), and transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-H crosses land zoned as agriculture in Carbon, Duchesne, Juab, and Sanpete counties, industrial in Helper City, rangeland in Emery and Uintah counties, recreation in Juab County, parks/preservation in Carbon and Sanpete counties, and residential in Helper City.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-H has a total of 1.8 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland. There are no high residual impacts on existing land use.

Future Land Use

Alternative COUT-H has no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-H has a total of 0.3 mile of moderate residual impacts that occur where the reference centerline crosses land zoned for residential. There are no high residual impacts on zoning and general plan management direction.

Alternative COUT-I

Land Jurisdiction, State Trust Lands, Parallel Linear Facilities, and Utility Corridors (Colorado)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-I and route variation in Colorado.

Alternative COUT-I crosses one oil and gas lease owned by Cinco Land and Exploration Inc.

Alternative COUT-I is located within a WWEC corridor for 7.0 miles and a BLM-designated utility corridor within the BLM White River Field Office for 14.6 miles.

Affected Environment (Colorado)

Existing Land Use

Alternative COUT-I crosses agriculture, oil/gas extraction, pipeline and/or pipeline pump station, grazing allotments, transmission line, and vacant/undeveloped lands. Alternative COUT-I crosses authorized state oil and/or gas leases.

Future Land Use

Alternative COUT-I crosses a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-I crosses land zoned for agriculture and Moffat and Rio Blanco counties.

Environmental Consequences (Colorado)

Existing Land Use

Alternative COUT-I would have no high or moderate residual impacts on existing land use.

Future Land Use

Alternative COUT-I has no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-I would have no high or moderate residual impacts on zoning and general plan management direction.

Land Jurisdiction, Utah State Institutional Trust Lands Administration, Parallel Linear Facilities, and Utility Corridors (Utah)

Table 3-173 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 within WWEC, BLM, and USFS utility corridors for Alternative COUT-I in Utah.

Alternative COUT-I crosses SITLA leases for gilsonite mining, oil and gas, oil shale, and range improvement.

Alternative COUT-I is located within a WWEC corridor for 1.4 miles and BLM-designated utility corridors within the BLM rice and Richfield Field Offices for 16.0 miles.

Affected Environment (Utah)

Existing Land Use

Alternative COUT-I crosses irrigated farmland, pipelines and/or pipeline pump stations, transmission line, oil and gas extraction, gravel mining, grazing allotments, and vacant/undeveloped land uses.

Alternative COUT-C 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 crosses gas extraction (final plat) and a transmission line (preliminary plat).

Zoning and General Plan Management Direction

Alternative COUT-I crosses land zoned for agriculture in Mount Pleasant and Carbon, Duchesne, Emery, Juab, and Sanpete counties, commercial in Sanpete County, rangeland in Emery and Uintah counties, recreation in Juab County, parks/preservation in Carbon and Sanpete counties, and residential in the City of Nephi.

Environmental Consequences (Utah)

Existing Land Use

Alternative COUT-I would have a total of 1.9 miles of moderate residual impacts that occur where the reference centerline crosses irrigated farmland. There are no high residual impacts on existing land use.

Future Land Use

Alternative COUT-I would have no high or moderate residual impacts on future land use.

Zoning and General Plan Management Direction

Alternative COUT-I would have 0.1 mile of moderate residual impacts on zoning and general plan management direction where the reference centerline crosses residential zoning. There are no high residual impacts on zoning and general plan management direction.

3.2.10.5.5 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 (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Siting Area A – Powder Wash

Affected Environment

Existing Land Use

Siting Area A contains the following existing land uses:

- Grazing allotments in the 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 northwestern portion of the siting area)
- Communication facilities (throughout the siting area)
- Residential (in the northwestern portion of the siting area)

Future Land Use

Siting Area A contains the TransWest Express Transmission Line which 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 3.2.10.5.2. In addition to the impacts described in Section 3.2.10.5.2, if a series compensation station was sited within a grazing allotment, an area as large as 160 acres could potentially be excluded from use.

It is anticipated that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line. If sited on or in the vicinity of this project the series compensation station would potentially limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated that 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.

Siting Area B – Nine Mile Basin

Affected Environment

Existing Land Use

Siting Area B contains the following existing land uses:

- Grazing allotments in the 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)

Future Land Use

Siting Area B contains the TransWest Express Transmission Line which 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 3.2.10.5.2. In addition to the impacts described in Section 3.2.10.5.2, if a series compensation station was sited within a grazing allotment, an area as large as 160 acres could potentially be excluded from use.

It is anticipated that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line. If sited on or in the vicinity of this project the series compensation station would potentially limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated that 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.

Siting Area C – Maybell

Affected Environment

Existing Land Use

Siting Area C contains the following existing land uses:

- Grazing allotments in the 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)

Future Land Use

Siting Area C contains the TransWest Express Transmission Line which 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 3.2.10.5.2. In addition to the impacts described in Section 3.2.10.5.2, if a series compensation station was sited within a grazing allotment, an area as large as 160 acres could potentially be excluded from use.

It is anticipated that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line. If sited on or in the vicinity of this project the series compensation station would potentially limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated that 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 and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

Siting Area D – Bell Rock

Affected Environment

Existing Land Use

Siting Area D contains the following existing land uses:

- Grazing allotments in the 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)

Future Land Use

Siting Area D contains the TransWest Express Transmission Line which 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 3.2.10.5.2. In addition to the impacts described in Section 3.2.10.5.2, if a series compensation station was sited within a grazing allotment, an area as large as 160 acres could potentially be excluded from use.

It is anticipated that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line. If sited on or in the vicinity of this project the series compensation station would potentially limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated that 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 and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

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 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)

Future Land Use

Siting Area G contains the TransWest Express Transmission Line which 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 3.2.10.5.2. In addition to the impacts described in Section 3.2.10.5.2, if a series compensation station was sited within a grazing allotment, an area as large as 160 acres could potentially be excluded from use.

It is anticipated that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line and SITLA industrial lease. If sited on or in the vicinity of these projects the series compensation station would potentially 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 that the series compensation station would be compatible 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 and Route Variation (COUT-A-1)

Siting Area F – Roosevelt

Affected Environment

Existing Land Use

Siting Area B 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)

Future Land Use

Siting Area F contains the TransWest Express Transmission Line which runs through the central portion of the siting area and the Duchesne County Victory Pipeline Corridor which runs through the western 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 that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line and Duchesne County Victory Pipeline Corridor. If sited on or in the vicinity of these projects the series compensation station would potentially limit access to the projects and/or prevent development of the projects.

Zoning and General Plan Management Direction

It is anticipated that 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 COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

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

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Siting Area E – Bonanza

Affected Environment

Existing Land Use

Siting Area E contains the following existing land uses:

- Grazing allotments in the 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)

Future Land Use

Siting Area E contains the TransWest Express Transmission Line which 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 3.2.10.5.2. In addition to the impacts described in Section 3.2.10.5.2, if a series compensation station was sited within a grazing allotment, an area as large as 160 acres could potentially be excluded from use.

It is anticipated that 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 would potentially 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 that the series compensation station would avoid the TransWest Express Transmission Line. If sited on or in the vicinity of this project the series compensation station would potentially limit access to the project and/or prevent development of the project.

Zoning and General Plan Management Direction

It is anticipated that 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 (Applicant Preferred Alternative) 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 and route variations.

3.2.11 Parks, Preservation, and Recreation

3.2.11.1 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.

3.2.11.1.1 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- 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 each municipality or county is governed by (i.e., general plans, comprehensive plans, master plans, etc.). The planning documents relevant to the Project area are listed in Section 3.2.10. 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 five-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 2013b) 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 National Park Service and provides guidance to local and state agencies in designating LWCF sites (UDNR 2009).

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 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 3-177. 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.

Issue Raised	Concern	Description of General Location	Relevant Alternative Routes or Route Variations
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	COUT-B-2, COUT-B-5, COUT-C-1, COUT-C-2, and COUT-C-3 cross a private recreational facility (refer to Section 3.2.10 for additional information about homes and cabins affected by the Project alternative routes)

TABLE 3-177 PARKS, PRESERVATION, AND RECREATION RESOURCE ISSUES			
Issue Raised	Concern	Description of General Location	Relevant Alternative Routes or Route Variations
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 and route variations
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 and route variations
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 and route variations 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	WYCO-B, WYCO-C, WYCO-D, and WYCO-F and route variations; all COUT BAX alternative routes; and all COUT alternative routes and route variations
Impacts on the Old Spanish National Historic Trail	Refer to Section 3.2.17	Refer to 3.2.17	Refer to Section 3.2.17

3.2.11.3 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) are also 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.

3.2.11.4 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) within the study corridors were identified using the following methods.

- Documentation of recreation areas using aerial photography within the 2-mile-wide alternative route study corridors using 2009, 2011, and 2013 NAIP imagery.
- Field reconnaissance in 2009 and 2011.
- 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-16.

3.2.11.4.1 Inventory

This section identifies parks, preservation, or recreation resources inventoried within the study corridors, including recreation sites, access, and parks; dispersed recreation; OHVs; 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 within 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 Lands

Recreation activities are collectively one of the larger uses of BLM-administered land. Table 3-178 summarizes estimated visitor use on BLM-administered land by state from 2000 to 2010.

TABLE 3-178 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

TABLE 3-178 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
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%
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%
SOURCE: Bureau of Land Management 2001a, 2011i										
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 3-179.

TABLE 3-179 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
SOURCE: Arnold 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.

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 3-180 provides details on recreation areas within the alternative route study corridors.

TABLE 3-180 RECREATION SITES, ACCESS, AND PARKS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Name	Location	Relevant Alternative Routes and Route Variations
Wyoming		
Fort Steele Rest Area	Located on the 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 alternative routes and route variations
Hanna Recreation Center	Located within the Town of Hanna municipal boundary	WYCO-D, WYCO-D-1
Municipal park in Hanna (no name provided)	Located in the western portion of the Hanna municipal boundary	WYCO-D, WYCO-D-1
Little Robber Reservoir undeveloped recreation site	Located on the west side of (Wyoming Highway 789), north of the Town of Baggs	WYCO-F and route variations
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 alternative routes and route variations
Overland Trail Ruts interpretative site	Located on the west side of Wyoming Highway 789 about 22 miles south of I-80	WYCO-D, WYCO-D-1
Ripple Ridge Raceway	Located off state Wyoming Highway 71 approximately 2 miles southwest of Rawlins	All WYCO alternative routes and route variations
Colorado		
Buck N’Bull RV Park	Located off 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 alternative routes
Carrot Men Rock Art Site	Managed by the Bureau of Land Management. Located along Cottonwood Road approximately a quarter mile southwest of Rio Blanco County Road 23; approximately 11 miles southwest of Rangely	All COUT BAX alternative routes
Cedar Ridge Golf Course	Privately managed, located approximately 1.5 miles East of Rangely; just south of Colorado State Highway 64	All COUT BAX alternative routes
Loudy Simpson Park	Located southwest of the City of Craig, Colorado, on the south side of the Yampa River.	WYCO-D, WYCO-D-1

**TABLE 3-180
 RECREATION SITES, ACCESS, AND PARKS WITHIN THE
 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE**

Name	Location	Relevant Alternative Routes and Route Variations
Craig Energy Wayside Exhibit Point of Interest	Located along Colorado State Highway 13 approximately 4 miles southwest of Craig	WYCO-D, WYCO-D-1
Crook’s Brand Rock Art Site	Located off Rio Blanco County Road 23, approximately 9 miles southwest of Rangely	All COUT BAX alternative routes
Dragon Road Kiosk	Located along Rio Blanco County Road 23, approximately 3.8 miles south-southwest of Rangely	All COUT BAX alternative routes
Elks Park	Located is the southwest corner of Rangely town limits	COUT-A and COUT-B alternative routes and route variations
Fortification Rocks Viewpoint	Located along Colorado State Highway 13, approximately 20 miles south of Baggs, Wyoming.	WYCO-D, WYCO-D-1
U.S. Highway 40 Point of Interest	Located along U.S. Highway 40, approximately 7 miles east of Craig	WYCO-D, WYCO-D-1
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, WYCO-D-1
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, WYCO-D-1
Kenney Reservoir and Recreation Area	Located on the west side of Colorado State Highway 64, approximately 5 miles northeast of Rangely, just south of the RBWCD Campground	All COUT BAX alternative routes
Otto’s Ridge Paragliding Site	Located on Bureau of Land Management land, approximately 1 mile east of 2 nd Road, and approximately 8 miles northwest of the community of Mack	All COUT BAX alternative routes
Rangely Fairgrounds	Located approximately 1.5 miles east of Rangely just south of Colorado State Highway 64.	All COUT BAX alternative routes
Rangely Rock Crawling Park	Located approximately 1.5 miles southwest of Rangely; The rock crawling park is a 1.5 square mile off-road area west of Rio Blanco County Road 23 (Big Park Road) and southeast of Rio Blanco County Road 2	All COUT BAX alternative routes

**TABLE 3-180
 RECREATION SITES, ACCESS, AND PARKS WITHIN THE
 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE**

Name	Location	Relevant Alternative Routes and Route Variations
RBWCD Campground	Located on the Kenney Reservoir, west of Colorado State Highway 64, approximately 6 miles northwest of Rangely	All COUT BAX alternative routes
Sheep Creek Camping Area	Located less than 1 mile northeast of U.S. Highway 6, approximately 12 miles northeast of the community of Thistle	COUT-A, COUT-A-1
South Beach Public River Access (also known as Yampa Project Pump Station)	Part of Yampa River State Park, located along Colorado State Highway 13 at Yampa River crossing. Approximately 3.5 miles southwest of Craig	WYCO-D, WYCO-D-1
South Beach Picnic Area – Yampa Project Pump Station	Part of Yampa River State Park, located along State Colorado State Highway 13 at Yampa River crossing. Approximately 3.5 miles southwest of Craig	WYCO-D, WYCO-D-1
South Beach Trail Area	Part of Yampa River State Park, located along State Colorado State Highway 13 at Yampa River crossing. Approximately 3.5 miles southwest of Craig	WYCO-D, WYCO-D-1
South Cross Mountain Trailhead	Located to the north of the Yampa Valley Trail, approximately 9 miles southwest of Maybell	WYCO-B, WYCO-C, and WYCO-F and route variations
Taylor Draw River Access	Located to the west of Colorado State Highway 64 and east of the White River, approximately 5 miles east of Rangely	All COUT BAX alternative routes
West Juniper Mountain Trailhead	Located west of the Yampa River, approximately 3 miles southeast of Maybell	WYCO-D, WYCO-D-1
White River Bowmen Archery Range	Located approximately 1 mile south of Rangely	All COUT BAX alternative routes
Yampa River State Park	Located approximately 3 miles southwest of Craig	WYCO-D, WYCO-D-1
Yampa Valley Sportriders (Motorcycles)	Located along Moffat County Road 107, approximately 1 mile north of Craig Station coal power plant, and approximately 3 miles southwest of Craig	WYCO-D, WYCO-D-1

**TABLE 3-180
 RECREATION SITES, ACCESS, AND PARKS WITHIN THE
 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE**

Name	Location	Relevant Alternative Routes and Route Variations
Utah		
Aspen Grove Campground and Boat Ramp	Located along Forest Road 090, approximately 5 miles south of U.S. Highway 40 and Forest Road 090 intersections; located on the south side of Strawberry Reservoir	COUT-A, COUT-A-1
Bamberger Roadside Monument	Located on the 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	Located along Skyline Drive/Utah State Route 264 approximately 8 miles northeast of Fairview City	COUT BAX-E, COUT-H
Big Mountain Campground	Located along the south side of Utah State Route 132, approximately 6 miles east of City of Nephi	All COUT BAX and COUT alternative routes and route variations
Birdseye Marble Quarry Roadside Marker	Located along U.S. Highway 89, approximately 5 miles southwest of Thistle (intersection of U.S. Highway 6 and U.S. Highway 89)	All COUT alternative routes and route variations, except COUT-H and COUT-I
Bottle Hollow Reservoir Recreation Site	Located along Hilltop Road on the south side of Bottle Hollow Reservoir, approximately 1.5 miles southwest of the community of Fort Duchesne	COUT-A and COUT-B and route variations
Burnout Canyon/Upper Electric Lake Scenic Byway Sign	Located 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 Mia Shalom	Located along Forest Road 227, 1 mile west of Utah State Route 264, 2 miles north of Electric Lake, and 10 miles northeast of Fairview	COUT BAX-E, COUT-H
Camperworld	Along south side of Utah State Route 132, approximately 5 miles east of Nephi	All COUT BAX and COUT alternative routes and route variations
Canyon Hills Park Golf Course (Juab Golf Course 104 Land and Water Conservation Fund site)	Located on the northeast corner of Utah State Route 132 and Interstate 15, approximately 0.5 mile East of Nephi	All COUT BAX and COUT alternative routes and route variations
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 alternative routes and route variations, except COUT-H and COUT-I

**TABLE 3-180
 RECREATION SITES, ACCESS, AND PARKS WITHIN THE
 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE**

Name	Location	Relevant Alternative Routes and Route Variations
Cottonwood Wash Trailhead	Located on the southwest side of the Old Spanish National Historic Trail, approximately 14 miles southwest of the ghost town, Woodside	COUT BAX-B
Crystal Geysers	Located at the end of Little Valley Road, approximately 4 miles south-southeast of the City of Green River	All COUT BAX alternative routes
Enron Campground	Located along the White River approximately 2 miles south-southeast of the intersection of Glen Bench Road and the White River. Approximately 12 miles east-southeast of the Community of Ouray	COUT-C and route variations, COUT-H, COUT-I
Fantasy Canyon Trailhead	Located approximately 12 miles to the northwest of the community of Bonanza	COUT-C and route variations, COUT-H, COUT-I
Fourmile Bottom River put-in	Located on the Green River, approximately 22 miles south of the community of Randlett	COUT-C and route variations, COUT-H, COUT-I
Fort Duchesne Rifle Range	Located along 7500E Road, 1 mile south of Fort Duchesne	COUT-A and COUT-B and route variations
Gooseberry Group Campground	Located approximately 1 mile northeast of the intersection of Utah State Route 264 and Utah State Route 31, and approximately 8.5 miles east-northeast of Fairview	COUT BAX-E, COUT-H
Green River Overlook	Located on the west side of the Green River at the terminus of Little Valley Road, east from Airport Road. Approximately 3.1 miles south of Green River	All COUT BAX alternative routes
Helper City Park	Located on the east side of U.S. Highway 191. On the south side of the City of Helper, there is a picnic shelter and playground.	COUT-H
Indian Creek Campground	Located along Indian Creek Road approximately 1.2 miles north of the intersection of Miller Flat Road and Indian Creek Road. Approximately 17 miles northwest of Huntington	COUT BAX-B, COUT BAX-C, COUT-I
Kenney Reservoir boat launch	Located on the east of Kenney Reservoir, northeast of Rangely	All COUT BAX alternative routes
Off-highway vehicle/motorized use track (private track)	Located 8 miles east of Thistle	All COUT alternative routes and route variations, except COUT-H and COUT-I

**TABLE 3-180
 RECREATION SITES, ACCESS, AND PARKS WITHIN THE
 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE**

Name	Location	Relevant Alternative Routes and Route Variations
Potter's Pond Campground	Located along Potters Canyon Road, approximately 1 mile west of the intersection of Potters Canyon Road and Miller Flat Road. Approximately 18.5 miles northwest of Huntington	COUT BAX-B, COUT BAX-C, COUT-I
Saleratus Large Group Camping site	Located just northeast of the intersection of Carbon County Road 401 (Green River Cutoff Road) and Cottonwood Wash Road. Approximately 9 miles southwest of Woodside, Utah and 22 miles northwest of Green River	COUT BAX-C
Sam's Hollow Camping Site	Located 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	Located 0.5 mile north of U.S. Highway 6, along Forest Road 051; approximately 9 miles west of Gilluly, Utah and 9 miles east of Thistle	All COUT alternative routes and route variations, except COUT-A-1, COUT-H, and COUT-I
Nephi Shooting Range	Located 1.6 miles northeast of Nephi	All COUT BAX and COUT alternative routes and route variations
Skyline Drive Staging Area	Located at the intersection of Forest Road 150 (Skyline Road) and U.S. Highway 6 just west of Gilluly	All COUT-B and COUT-C alternative routes and route variations
Snow Kite Recreation Areas	A 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
Solider Creek Overlook	Located along Forest Road 090 approximately 4 miles south of the intersection of U.S. Highway 40 and Forest Road 090. Located on the east side of Strawberry Reservoir just north of the dam	COUT-A, COUT-A-1
Solider Creek Dam Day Use Area	Located along Forest Road 090 approximately 4.5 miles south of the intersection of U.S. Highway 40 and Forest Road 090. Located on the southeast side of Strawberry Reservoir on west side of dam	COUT-A, COUT-A-1
Starvation State Park	Located approximately 3 miles northwest of the City of Duchesne	COUT-A, COUT-A-1

TABLE 3-180 RECREATION SITES, ACCESS, AND PARKS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Name	Location	Relevant Alternative Routes and Route Variations
Strawberry Reservoir	Located in the Uinta National Forest, approximately 13 miles north of the community of Solider Summit	COUT-A, COUT-A-1
Strawberry River Recreation Site	Located approximately 11 miles southwest of Fruitland	COUT-A, COUT-A-1
The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosks	Kiosks located on Utah State Route 96 and in the Manti-La Sal National Forest	All COUT BAX alternative routes, 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	Located on the White River, approximately 14 miles west of Bonanza	COUT-C and route variations, 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 within the study corridors, mainly in areas which have trails that enable user access to specific areas that 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 within 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 within 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 is also discussed below in the Trails portion of Section 3.2.11.4.1.

Dispersed recreation activities that could occur on BLM- and USFS-administered lands within the study corridors are displayed in Table 3-181. A qualitative discussion of effects on these recreation activities that could occur with the construction and operation of the Project is discussed under Section 3.2.11.5.2.

TABLE 3-181 DISPERSED RECREATION ACTIVITIES WITHIN 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
Wyoming														
Bureau of Land Management (BLM) Rawlins Field Office	374,000	✓	✓		✓		✓		✓		✓	✓	✓	✓
Colorado														
BLM Grand Junction Field Office	38,000								✓	✓	✓	✓		✓
BLM Little Snake Field Office	191,000		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
BLM White River Field Office	124,000			✓		✓	✓	✓	✓		✓	✓		✓
Utah														
BLM Fillmore Field Office	27,000								✓		✓	✓		✓
BLM Moab Field Office	88,000		✓	✓		✓	✓		✓	✓	✓	✓		✓
BLM Price Field Office	326,000		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
BLM Richfield Field Office	74,000			✓	✓	✓			✓	✓		✓		✓
BLM Salt Lake Field Office	123,000	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓
BLM Vernal Field Office	347,000		✓	✓	✓	✓	✓		✓		✓	✓		✓
Ashley National Forest	24,000		✓		✓		✓		✓		✓	✓		✓
Manti-La Sal National Forest	36,000		✓		✓	✓	✓		✓	✓	✓	✓		✓
Uinta National Forest	37,000		✓		✓	✓	✓		✓	✓		✓		✓

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. 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 within 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 which 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 of each forests 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 a, "... authorization which allow 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 which are neither commercial nor competitive

- Relationship with Other Permits: This would include a commercial filming permit issue 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 within 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 National Trails System, managed by the NPS, is a “...network of scenic, historic, and recreation trails created by the National Trails System Act of 1968 (NTSA). These trails 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” (NPS 2012a). The two types of National Trails that are found within the alternative route study corridors include a National Scenic Trail (NST) and a National Historic Trail (NHT). To be designated as such, a NST must be at least 100 miles of continuous, primarily non-motorized routes with outstanding recreation opportunities. A NHT is designated as such to commemorate historic or prehistoric travel routes that are significant to the nation. The criteria that must be met to reach this designation are detailed in Section 5 (b) of the NTSA (NPS 2012a).

The BLM, USFS, and counties also have trails that have been designated as historic or recreational (i.e., motorized and non-motorized) within 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 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 within the BLM field offices and USFS for OHV users including trails open for cross-country recreational OHV use. As defined by the BLM Land Use Planning Handbook H-1601-1, an OHV or off-road vehicle is, “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 for national defense” (BLM 2005a). As discussed above under Dispersed Recreation, OHV use occurs throughout the Project Area. Motorized trails within the alternative route study corridor are listed below in Table 3-182 and are discussed in Section 3.2.11.5

Nonmotorized 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 within the alternative route study corridors are listed in Table 3-182 and are discussed in Section 3.2.11.5. The scenic, cultural, and recreational trails in the alternative route study corridors are described in Table 3-182 and are discussed in Section 3.2.16 and 3.2.17.

TABLE 3-182		
TRAILS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Trail Name	Management and Use	Relevant Alternative Routes and Route Variations
Wyoming		
Cherokee Historic Trail – northern and southern routes	A historic trail managed by the Bureau of Land Management (BLM) Rawlins Field Office to protect the historic routes used by emigrants to journey west to California in the first 2 years of the Gold Rush; this trail is considered an avoidance area in the Rawlins Resource Management Plan (RMP)	All WYCO alternative routes and route variations
Overland Historic Trail	Historic trail managed by the BLM Rawlins Field Office for the preservation of historic values; This trail is considered an avoidance area in the BLM Rawlins Field Office Resource Management Plan	All WYCO alternative routes and route variations
Continental Divide National Scenic Trail (NST)	Approximately 3,100 miles long, the purpose of the Continental Divide NST 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,” (U.S. Forest Service 2009b)	All WYCO alternative routes and route variations
Rawlins to Baggs Road Historic Trail	Approximately 113 miles long, the trail is managed for the preservation of historic values and is an avoidance area for linear utilities within 0.25 mile of the trail or the visual horizon, whichever is closer, per the Rawlins Approved RMP	All WYCO alternative routes and route variations
Colorado		
Motorized Trails	Garfield County motorized trails used for 4-wheel drive vehicles and pack trips	All COUT BAX alternative routes
Motorized Trails	BLM Grand Junction Field Office motorized trails with users that include: all-terrain vehicles (ATV) and 4-wheel drive vehicles	All COUT BAX alternative routes
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 alternative routes and route variations, except WYCO-D-1
Motorized Trails	Mesa County motorized trails designated for 4-wheel drive use	All COUT BAX alternative routes

TABLE 3-182 TRAILS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Trail Name	Management and Use	Relevant Alternative Routes and Route Variations
Motorized Trails	Managed by the BLM Little Snake and Grand Junction Field Offices and Garfield and Mesa counties for motorized vehicles	All COUT BAX and WYCO alternative routes
Utah		
Old Spanish National Historic Trail – north branch and northern route	A national historic trail named after the Spanish colonies in northern New Mexico and southern California, the trail is designated to protect routes used for trading goods and pack animals and provide visitors opportunities to hike, camp, and view scenery and wildlife (BLM 2011j)	All COUT BAX alternative routes
Trails 10082, 10084, 10098, 10099, 10100, 10101, 10102, 10114, 10128, 10154, 10169, 10172, 10323, 10324, 10326, 10327, 10489, 10491, 10496, 10657, 10658, 10102A and South Death Trap Canyon, (also trails with no names)	Ashley National Forest motorized trails used by ATVs and motorcycles	All COUT alternative routes and route variations, except COUT-A and COUT-A-1
Mill Hollow, Quitchampau	Ashley National Forest non-motorized trails for hiking, pack and saddle, bicycle or as labeled use	COUT-B alternative route and route variations
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	COUT-H, COUT-I
Blind Canyon, Booths, 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 alternative routes and route variations
Crystal Geysers, Guy's, Thompson Single Track	BLM Moab Field Office motorized trails designated just for motorcycles, ATVs are prohibited	All COUT BAX alternative routes
Motorized Trails	BLM Price Field Office motorized trails designated for ATVs, motorcycles, and any other vehicle	All COUT BAX alternative routes, COUT-H, COUT-I
Great Western Trail, Indian Creek/Trail Hollow Loop, Left Fork White River, Nebo Loop, Sheep Creek to Indian Springs, Tank Hollow Connector, Tie Fork Great Western Trail	Uinta National Forest motorized trail for motorcycles and snowmobiles	All COUT BAX and COUT alternative routes and route variations

TABLE 3-182 TRAILS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Trail Name	Management and Use	Relevant Alternative Routes and Route Variations
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 alternative routes and route variations, except COUT-H and COUT-I
Far Side	BLM Vernal Field Office non-motorized track	All COUT-A and COUT-B alternative routes and route variations

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), 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 3-183 describes in detail the designated byways and backways located within the alternative route study corridors.

TABLE 3-183 SCENIC BYWAYS AND BACKWAYS ALTERNATIVE ROUTE STUDY CORRIDORS		
Scenic Byway/Backway Name and State Location	Management Agency and Description of Scenic Byway or Backway	Relevant Alternative Routes
Dinosaur Diamond Prehistoric Byway (Colorado and Utah)	The byway is part of the National Scenic Byways Program, which is part of the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA). 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. The byway is an approximately 512-mile loop designated as a National Scenic Byway and provides users opportunities to see dinosaur bones being excavated and prepared for museum display. Museums and numerous recreation opportunities are located along the byway. (Colorado Tourism Office 2010)	All COUT BAX and COUT alternative routes and route variations
The Energy Loop: Huntington/Eccles Canyons Scenic Byway (Utah)	The byway is part of the National Scenic Byways Program, which is part of the USDOT, FHWA This byway crosses through the Manti-La Sal National Forest, and passes the Towns of Scofield and Huntington and the City of Fairview. The byway offers opportunities to view coal mining operations, historic mining towns, and coal-fired power plants (FHWA 2012a)	All COUT BAX alternative routes, COUT-H, COUT-I

TABLE 3-183 SCENIC BYWAYS AND BACKWAYS ALTERNATIVE ROUTE STUDY CORRIDORS		
Scenic Byway/Backway Name and State Location	Management Agency and Description of Scenic Byway or Backway	Relevant Alternative Routes
Indian Canyon Scenic Byway (Utah)	The byway is part of the National Scenic Byways Program, which is part of the USDOT, FHWA. This 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. The byway passes by unique rock formations and vegetation and offers several different recreation opportunities(FHWA 2012b)	COUT-A and COUT-B and route variations, COUT-H
Nebo Loop Scenic Byway (Utah)	The byway is part of the National Scenic Byways Program, which is part of the USDOT, FHWA. 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 . This National Scenic Byway is approximately 37 miles in length and is designated for scenic qualities (FHWA 2012c)	All COUT BAX and COUT alternative routes and route variations
Nine Mile Canyon Backway (Utah)	The byway is part of the National Scenic Byways Program, which is part of the USDOT, FHWA. The byway is approximately 78 miles in length and is designated by the State of Utah for cultural features related to the prehistoric Fremont culture. 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. (FHWA 2012d)	COUT-C and route variations, COUT-H, COUT-I
Outlaw Trail Loop Scenic Drive (Wyoming)	Designated by Carbon County, the byway follows Wyoming Highway 789 starting at Interstate 80, at Creston Junction to the Town of Baggs. The route provides scenic and historical opportunities to users	All WYCO alternative routes and route variations, except WYCO-B route variations
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, the byway is 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. This byway offers recreation opportunities (State of Utah 2011)	All COUT alternative routes and route variations, except COUT-H and COUT-I

TABLE 3-183 SCENIC BYWAYS AND BACKWAYS ALTERNATIVE ROUTE STUDY CORRIDORS		
Scenic Byway/Backway Name and State Location	Management Agency 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, this backway is approximately 80 miles long and follows the spine of the Wasatch Plateau beginning near the ghost town of Tucker, Utah, and ending at Interstate 70. This backway is designated for its scenic qualities (Sanpete County 2012a)	All COUT BAX and COUT alternative routes and route variations
Wedge Overlook/Buckhorn Drive Scenic Backway (Utah)	Designated and managed by the State of Utah, this backway is 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. The backway 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 2012)	All COUT BAX alternative routes
White River/Strawberry Road Scenic Backway (Utah)	Designated by the State of Utah within portions managed by Uinta National Forest, this backway is approximately 28 miles long and follows a portion of the left fork of the White River before ending at Strawberry Reservoir and Strawberry campground. This backway is designated for scenic values with numerous recreation opportunities (Public Lands Interpretive Association 2012b)	All COUT alternative routes and route variations, except COUT-H and COUT-I

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 2012c).

Table 3-184 describes the SRMAs located with the alternative route study corridors.

TABLE 3-184 SPECIAL RECREATION MANAGEMENT AREAS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Special Recreation Management Area	Management Prescription	Relevant Alternative Routes and Route Variations
Wyoming		
Continental Divide National Scenic Trail	Designated in the Bureau of Land Management (BLM) Rawlins Field Office, the federal portion of this special recreation management area (SRMA) is a quarter mile corridor for approximately 80 miles. This SRMA 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 alternative routes and route variations
North Platte	Designated in the BLM Rawlins Field Office, this SRMA is approximately 5,000 acres, including a quarter mile area on either side of the North Platte River. This SRMA 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 alternative routes and route variations
Colorado		
Juniper Mountain	Designated by the BLM Little Snake Field Office, this SRMA is approximately 1,780 acres and provides opportunities for boating, hunting, camping, and hiking, and is considered an avoidance area for linear facilities. Rights-of-way are determined on a case-by-case basis consistent with the SRMA objectives (BLM 2011b)	WYCO-D, WYCO-D-1
Serviceberry	Designated by the BLM Little Snake Field Office, this SRMA is approximately 12,380 acres and provides backcountry, non-motorized hunting, and heritage interpretation/education experiences. Rights-of-way will be determined on a case-by case basis (BLM 2011b)	WYCO-D, WYCO-D-1
Utah		
Fantasy Canyon	Designated by the BLM Vernal Field Office, this SRMA is approximately 69 acres. This SRMA is designated for opportunities for self-guided touring and hiking and allows for rights-of-way (BLM 2008f)	COUT-C and route variations, COUT-H, COUT-I

TABLE 3-184 SPECIAL RECREATION MANAGEMENT AREAS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Special Recreation Management Area	Management Prescription	Relevant Alternative Routes and Route Variations
Labyrinth Canyon	Designated by the BLM Price Field Office, this SRMA is approximately 34,240 acres and is 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 within the SRMA. Management of this SRMA allows for rights-of-way that are consistent with resource management plan (RMP) goals and objectives (BLM 2008d)	All COUT BAX alternative routes
Labyrinth Rims/Gemini Bridges	Designated by the BLM Moab Field Office, this SRMA is approximately 300,650 acres and is 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. Management of this SRMA allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008c)	All COUT BAX alternative routes
Nine Mile Canyon	Designated by the BLM Vernal Field Office, this SRMA is approximately 44,168 acres and is managed to protect high-value cultural resources and scenic quality. Management of this SRMA allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008j)	COUT-C and route variations, COUT-H, COUT-I
	Designated by the BLM Price Field Office, this SRMA is approximately 24,300 acres and is managed for visitors to enjoy prehistoric and archaeological sites, including extensive rock panels. Management of this SRMA 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, this SRMA is approximately 938,500 acres and is managed for motorized and recreational opportunities in an expansive and unique geologic setting. Management of this SRMA allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008d)	All COUT BAX alternative routes

TABLE 3-184 SPECIAL RECREATION MANAGEMENT AREAS WITHIN THE 2-MILE-WIDE ALTERNATIVE ROUTE STUDY CORRIDORS BY STATE		
Special Recreation Management Area	Management Prescription	Relevant Alternative Routes and Route Variations
Utah Rims	Designated by the BLM Moab Field Office, this SRMA is approximately 15,424 acres and is 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. Management of this SRMA allows rights-of-way that are consistent with RMP goals and objectives (BLM 2008c)	All COUT BAX alternative routes

Recreation Opportunity Spectrum

ROS classifications have been identified on the Manti-La Sal, Ashley, and Uinta-Wasatch-Cache National Forests and the Rawlins, White River, and BLM 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 3-185 describes the ROS classifications, as well as their applicable management agency and the alternative routes that cross each classification.

TABLE 3-185 RECREATION OPPORTUNITY SPECTRUM AREAS		
Classification	Forest or BLM Field Office and Management Prescription	Relevant Alternative Routes and Route Variations
Front Country	A 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, this classification is characterized in general as a natural environment with moderate evidence of the sights and sounds of man. Resource modification and utilization practices are evident, but in harmony with the natural environment. There is a low to moderate concentration of users (BLM 2008b).	WYCO-C and route variations

TABLE 3-185 RECREATION OPPORTUNITY SPECTRUM AREAS		
Classification	Forest or BLM Field Office and Management Prescription	Relevant Alternative Routes and Route Variations
Middle Country	A division of the Adobe Town Dispersed Recreation Use Area in the Western Extensive Recreation Management Area in the BLM Rawlins Field Office, this classification is characterized as a predominately unmodified natural environment and has a low concentration of visitors. Motorized use is permitted (BLM 2008b).	WYCO-C and route variations
Primitive	Unmodified natural environment with isolation from man-made sights, sounds, and management controls. Motorized use is prohibited, but non-motorized trails are acceptable. Structures are very rare (BLM 2008d). The alternative route study corridor crosses this recreation opportunity spectrum area (ROS) within the BLM Price Field Office and the Uinta National Forest.	All COUT BAX and COUT alternative routes and route variations
Semi-primitive Non-motorized	Natural settings with some subtle modifications, but non-motorized trails are acceptable with little or no evidence of motorized routes. Structures are rare or isolated (BLM 2008d). The alternative route study corridor crosses this ROS area within the BLM Price Field Office and Ashley National Forest.	COUT BAX-B and all COUT alternative routes and route variations, except COUT-A and COUT-A-1
Semi-primitive Motorized	Natural setting with moderate alterations. Strong evidence of motorized trails, routes, and roads with isolated structures (BLM 2008d). The alternative route study corridor crosses this ROS area within the BLM Price Field Office, BLM White River Field Office, Ashley National Forest, Manti-La Sal National Forest, and Uinta National Forest.	All alternative routes and route variations
Roaded Natural	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 within the BLM White River Field Office, Manti-La Sal National Forest, and Ashley National Forest.	All alternative routes and route variations
Roaded Modified	An area that provides visitors opportunities to get away to a more natural environment and provides easy access. Roads are found within this category, as well as dispersed camping (Stankey et al. 1986). The alternative route study corridor crosses this ROS area within the Uinta National Forest.	All COUT BAX and COUT alternative routes and route variations

TABLE 3-185 RECREATION OPPORTUNITY SPECTRUM AREAS		
Classification	Forest or BLM Field Office and Management Prescription	Relevant Alternative Routes and Route Variations
Rural	Modified natural setting with dominant modifications observed often. Strong evidence of maintained roads and highways with structures especially apparent (BLM 2008d). The alternative route study corridor crosses this ROS within the BLM Price Field Office, BLM Rawlins Field Office, and Uinta National Forest.	WYCO-C and route variations, all COUT BAX alternative routes, and COUT alternative routes and route variations
Urban	Development dominates the setting with minor natural elements. Strong evidence of maintained roads and highways with structures as a dominant feature (BLM 2008d). The alternative route study corridor crosses this ROS within the BLM Price and White River Field Offices.	All COUT BAX alternative routes, COUT-H

3.2.11.4.2 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., semi-primitive non-motorized areas) (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 3-186). 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 3-188)

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 3.2.16).

TABLE 3-186 CRITERIA FOR ASSESSING LEVEL OF RECREATION IMPACTS ON PARKS, PRESERVATION, AND RECREATION RESOURCES	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ■ 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., Special Recreation Management Area)
Moderate	<ul style="list-style-type: none"> ■ 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	<ul style="list-style-type: none"> ■ 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 above.

Mitigation Planning and Effectiveness

In addition to the design features described as part of the Project description (Table 2-8), selective mitigation measures would also be used to minimize adverse impacts on parks, preservation, and recreation resources; these are described in Table 3-187.

TABLE 3-187 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.).

Selective Mitigation Measure	Description of Mitigation	Example of Application
5	Minimize new and improved accessibility	Relocating a portion of an alternative route to avoid a semi-primitive non-motorized recreation opportunity spectrum area.
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 3-188 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 3.2.11.5 reports on the high and moderate residual impact mileages that would occur after selective mitigation is applied.

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	Moderate	4, 5	Low
ROS Classification – Primitive	High	4, 5	High
ROS Classification – Semi-Primitive Non-motorized	High	4, 5	High
ROS Classification – Semi-Primitive Motorized	Moderate	4	Low
ROS Classification – Roaded Natural	Moderate	4	Low
ROS Classification – Roaded Modified	Moderate	4	Low
ROS Classification – Rural	Moderate	7	Low
ROS Classification – Urban ²	Low	–	Low
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
Continental Divide National Scenic Trails	High	5, 7, 9	Moderate
National and State Historic Trails	High	5, 7, 9	Moderate
Scenic Highways/Byways/Backways	High	4, 8, 9	Low
Shooting/Archery Range	High	7	Low
Special Recreation Management Area	High	4, 5, 7, 9	Moderate
NOTES: ¹ Only resources crossed by the alternative routes are listed in this table. ² No mitigation measures were deemed necessary for these facilities.			

3.2.11.5 Results

A summary of initial and residual impact results is presented in Table 3-188.

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 within 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.

3.2.11.5.1 No Action Alternative

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

3.2.11.5.2 Impacts Common to All Action Alternatives

General Construction Impacts on Dispersed Recreation

Dispersed recreation occurs within 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 no construction 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 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 alternatives, as discussed below. Impacts on recreation infrastructure (such as trails) are assessed by alternative route under Section 3.2.2.5.4.

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 could also 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, mitigation measures (Selective Mitigation Measure 5) would be utilized to restrict OHV users from using the Project right-of-way as an OHV trail or road.

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.

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 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.

3.2.11.5.3 345-kilovolt Ancillary Transmission Components

There are no parks, preservation, or recreation areas crossed or within the study corridor of the 345kV ancillary transmission components.

3.2.11.5.4 500-kilovolt Transmission Line Components

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

Table 3-189 reports the number of miles of estimated residual impacts on parks, preservation, and recreation resources for WYCO alternative routes.

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Alternative WYCO-B in Wyoming crosses the following parks, preservation, and recreation resource areas (including miles):

- Overland Historic Trail (0.1 mile), Cherokee Historic Trail (0.1 mile), Rawlins to Baggs Road trail (0.1 mile), and Continental Divide NST (0.1 mile)
- North Platte SRMA (0.2 mile)
- Outlaw Trail Loop Scenic Drive (0.1 mile)

The following parks, preservation, and recreation resource areas are within the alternative route study corridor but are not crossed by the alternative route:

- Fort Steele Rest Area, North Platte River, Fort Steele/Rochelle Public Access Area, Ripple Ridge Raceway
- Continental Divide NST SRMA

Alternative WYCO-B route variations cross and would have the same parks, preservation, and recreation areas within the alternative route study corridor as Alternative WYCO-B.

Environmental Consequences (Wyoming)

A total of 0.6 mile of moderate residual impacts would be anticipated for Alternative WYCO-B and route variations in Wyoming. No high residual impacts associated with the alternative are anticipated.

The alternative route crosses the Continental Divide NST for 0.1 mile, the Rawlins to Baggs Road trail for 0.1 mile, the Cherokee Historic Trail for 0.1 mile, and the Overland Historic Trail for 0.1 mile (which are considered avoidance areas for utility rights-of-way in the BLM Rawlins Field Office RMP). By applying selective mitigation measures such as minimizing new and improved accessibility (Selective Mitigation Measure 5), spanning or avoiding the trail location (Selective Mitigation Measure 7), and maximizing the span over the trail location (Selective Mitigation Measure 9), direct impacts on the trail locations could be avoided. These mitigation measures also would alleviate interference with the designated avoidance area for the trails, which is compliant with the BLM Rawlins Field Office RMP. If a trail would be directly affected 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 3.2.16. Additional analysis and information for these trail crossings are located in Section 3.2.17.5, in accordance with BLM Manual 6280.

The remaining 0.2 mile of moderate residual impacts would occur where Alternative WYCO-B crosses the North Platte SRMA. By applying selective mitigation measures that minimize tree and brush clearing around the North Platte River (Selective Mitigation Measure 4), minimize new and improved accessibility to the North Platte River (Selective Mitigation Measure 5), span the North Platte River (Selective Mitigation Measure 7), and maximize the span over the North Platte River (Selective Mitigation Measure 9), direct impacts on the North Platte SRMA could be reduced. Visual impacts from Alternative WYCO-B crossing the North Platte SRMA are discussed in Section 3.2.16.

The Alternative WYCO-B route variations would have the same impacts as Alternative WYCO-B.

Affected Environment (Colorado)

Alternative WYCO-B in Colorado crosses the following parks, preservation, and recreation resource areas (including miles):

- Semi-primitive motorized and roaded natural ROS categories managed by the BLM White River Field Office for a total of 16.0 miles (these categories do not restrict the development of Project but mitigation would still be utilized to reduce impacts on the ROS categories)
- Godiva Rim (0.1 mile), Peck Mesa (0.6 mile), Ruedloff Powder Wash (0.3 mile), West Sims Berry (0.1 mile), and the Yampa Valley (0.1 mile) motorized trails in the BLM Little Snake Field Office (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)

The following parks, preservation, and recreation resource areas are within the alternative route study corridor but are not crossed by the alternative route:

- South Cross Mountain Trailhead
- Horse Draw and Pinyon Ridge Road motorized trails in the BLM Little Snake Field Office

The Alternative WYCO-B route variations cross the same parks, preservation, and recreation areas as Alternative WYCO-B in Colorado, but for different lengths:

- Route Variation WYCO-B-1 crosses the same number of miles of roaded natural and semi-primitive motorized ROS categories and motorized trails as Alternative WYCO-B;
- Route Variation WYCO-B-2 crosses 16.6 miles of roaded natural and semi-primitive motorized ROS categories and the same number of miles of motorized trails as Alternative WYCO-B;
- Route Variation WYCO-B-3 crosses 16.1 miles of roaded natural and semi-primitive motorized ROS categories and the same number of miles of motorized trails as Alternative WYCO-B

The Alternative WYCO-B route variations have the same parks, preservation, and recreation areas located within the 2-mile wide alternative route study corridor as Alternative WYCO-B.

Environmental Consequences (Colorado)

Alternative WYCO-B and Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

There are no high or moderate residual impacts on parks, preservation, and recreation resources anticipated for Alternative WYCO-B and route variations in Colorado.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Alternative WYCO-C in Wyoming crosses the same parks, preservation, and recreation resource areas as the Wyoming portion of Alternative WYCO-B except Alternative WYCO-C also crosses Front Country ROS category in the BLM Rawlins Field Office for 3.7 miles. This ROS category does not restrict the development of the Project but mitigation would still be utilized to reduce impacts on the ROS category. The portion of the ROS category that is being crossed is also in a designated underground pipeline utility corridor in the BLM Rawlins Field Office RMP.

Alternative WYCO-C has the same parks, preservation, and recreation resource areas that are within the alternative route study corridor but not crossed by the alternative as Alternative WYCO-B except for the Middle Country and Rural ROS category in the BLM Rawlins Field Office.

The Alternative WYCO-C route variations in Wyoming cross and have within the alternative route study corridor the same parks, preservation, and recreation areas as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Alternative WYCO-C and route variations in Wyoming would have the same impacts as Alternative WYCO-B and route variations.

Affected Environment (Colorado)

Alternative WYCO-C and route variations in Colorado cross and would have within the alternative study corridor the same parks, preservation, and recreation resource areas as Alternative WYCO-B and route variations.

Environmental Consequences (Colorado)

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Alternative WYCO-C and route variations in Colorado would have the same impacts as Alternative WYCO-B and route variations.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Alternative WYCO-D and Route Variation WYCO-D-1 in Wyoming cross the same parks, preservation, and recreation resource areas as Alternatives WYCO-B and WYCO-C except for the miles associated with crossing Overland Historic Trail (0.1 mile), Cherokee Historic Trail (0.2 mile), Rawlins to Baggs Road trail (0.5 mile), and the Outlaw Trail Loop Scenic Drive (0.8 mile). Also, Alternative WYCO-D and route variation do not cross the Middle Country and Rural ROS category in the BLM Rawlins Field Office.

Parks, preservation, and recreation resource areas within the alternative route study corridors but are not crossed by Alternative WYCO-D and route variation are the same as Alternative WYCO-B and Alternative WYCO-C and route variations except for the Overland Trail Ruts interpretative site, Hanna Recreation Center, and municipal park in the Town of Hanna.

Environmental Consequences (Wyoming)

Alternative WYCO-D and Route Variation (WYCO-D-1)

Alternative WYCO-D and route variation would have a total of 1.1 miles of moderate residual impacts and no high residual impacts associated with the alternative route. The parks, preservation, and recreation resource areas are the same as those crossed by Alternatives WYCO-B and WYCO-C and route variations, with differing total miles of moderate impacts.

Affected Environment (Colorado)

Alternative WYCO-D crosses the same parks, preservation, and recreation resource areas as Alternatives WYCO-B and WYCO-C except for Juniper Mountain SRMA (considered an avoidance area for future utilities in the Little Snake RMP) (1.4 miles), South Beach Public River Access (a portion of Yampa River State Park within river access area) (0.5 mile), Antelope Knoll Well (0.2 mile), Mud Springs Loop (0.2 mile), and Yampa Valley Trail (0.2 mile) motorized trails in the BLM Little Snake Field Office (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail). Route Variation WYCO-D-1 also crosses an additional 0.1 mile of semi-primitive motorized and roaded natural ROS categories (16.1 miles) in the White River Field Office compared to Alternatives WYCO-B (including route variations), WYCO-C (including route variations), and WYCO-D.

The following parks, preservation, and recreation resource areas are within the 2-mile wide alternative route study corridor but are not crossed by Alternative WYCO-D or Route Variation WYCO-D-1:

- 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, and Yampa Valley Sportsriders
- Juniper Mountain, North Lone Tree Well, Pinyon Ridge Road, and Pole Gulch motorized trails in the BLM Little Snake Field Office

- Serviceberry SRMA

Environmental Consequences (Colorado)

Alternative WYCO-D and Route Variation (WYCO-D-1)

Alternative WYCO-D would have a total of 1.9 miles of moderate residual impacts. There are no high residual impacts associated with the alternative route.

The alternative route crosses 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). By applying mitigation measures that minimize tree and brush clearing within the right-of-way (Selective Mitigation Measure 4), minimize new and improved accessibility to the SRMA (Selective Mitigation Measure 5), span sensitive features within the SRMA (Selective Mitigation Measure 7), and maximize the span of these sensitive features (Selective Mitigation Measure 9), direct impacts on the Juniper Mountain SRMA could be reduced. 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.

The remaining 0.5 mile of moderate residual impacts occur where Alternative WYCO-D crosses the South Beach Public River Access, an access point to the Yampa River. By applying mitigation measures that minimize the tree and brush clearing within the right-of-way (Selective Mitigation Measure 4), minimize new accessibility in undesignated areas of the Yampa River (Selective Mitigation Measure 5), span where crossing the access area and the river (Selective Mitigation Measure 7), and match the existing transmission tower spans already crossing the river access (Selective Mitigation Measure 9).

Route Variation WYCO-D-1 has the same impacts as Alternative WYCO-D.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Alternative WYCO-F crosses the same parks, preservation, and recreation resource areas as Alternatives WYCO-B (including route variations), WYCO-C (including route variations) and WYCO-D, except for additional miles Alternative WYCO-F crosses the Cherokee Historic Trail (0.3 mile).

The parks, preservation, and recreation resource areas that are within the alternative route study corridor but are not crossed by an alternative route are the same as Alternatives WYCO-B (including route variations) and WYCO-C (including route variations) except for Little Robber Reservoir and an undeveloped recreation site located within the study corridor of Alternative WYCO-F.

Alternative WYCO-F route variations in Wyoming cross and have within the alternative route study corridor the same parks, preservation, and recreation areas as Alternative WYCO-F.

Environmental Consequences (Wyoming)

Alternative WYCO-F

Alternative WYCO-F and route variations would have a total of 0.8 mile of moderate residual impacts. There are no high residual impacts associated with the alternative route. The parks, preservation, and recreation resource areas are the same as those crossed by Alternatives WYCO-B and WYCO-C and route variations, with differing total miles of moderate impacts.

Affected Environment (Colorado)

Alternative WYCO-F crosses and has within the alternative study corridor the same parks, preservation, and recreation resource areas as Alternative WYCO-B and route variations.

Alternative WYCO-F route variations in Colorado, cross the same parks, preservation, and recreation areas as Alternative WYCO-F but for slightly different lengths:

- Route Variation WYCO-F-1 crosses the same amount of miles of roaded natural and semi-primitive motorized ROS categories and motorized trails as Alternative WYCO-F
- Route Variation WYCO-F-2 crosses 16.6 miles of roaded natural and semi-primitive motorized ROS categories and the same amount of miles of motorized trails as Alternative WYCO-F
- Route Variation WYCO-F-3 crosses 16.1 miles of roaded natural and semi-primitive motorized ROS categories and the same amount of miles of motorized trails as Alternative WYCO-F

Alternative WYCO-F route variations in Colorado have the same parks, preservation, and recreation areas located within the alternative route study corridor as Alternative WYCO-F.

Environmental Consequences (Colorado)

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Alternative WYCO-F and route variations would have no high or moderate impacts.

TABLE 3-189 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)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts (miles)		
			Continental Divide National Scenic Trail	National Historic Trails/ Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
Alternative WYCO-B and Route Variations																
WYCO-B (Applicant Preferred Alternative)	204.5	0.0	0.1	0.3	0.0	1.2	0.1	0.2	0.0	6.8	9.2	0.0	0.0	17.3	0.6	0.0
Wyoming	138.1	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.8	9.2	0.0	0.0	17.2	0.0	0.0
WYCO-B-1	204.9	0.0	0.0	0.3	0.0	1.2	0.1	0.2	0.0	6.8	9.2	0.0	0.0	17.3	0.6	0.0
Wyoming	138.1	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0
Colorado	66.8	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.8	9.2	0.0	0.0	17.2	0.0	0.0
WYCO-B-2 (Agency Preferred Alternative)	204.5	0.0	0.1	0.3	0.0	1.2	0.1	0.2	0.0	7.4	9.2	0.0	0.0	17.9	0.6	0.0
Wyoming	138.1	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	7.4	9.2	0.0	0.0	17.8	0.0	0.0
WYCO-B-3	204.5	0.0	0.0	0.3	0.0	1.2	0.1	0.2	0.0	6.9	9.2	0.0	0.0	17.4	0.6	0.0
Wyoming	138.1	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0
Colorado	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.9	9.2	0.0	0.0	17.3	0.0	0.0

TABLE 3-189 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)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts (miles)		
			Continental Divide National Scenic Trail	National Historic Trails/ Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
Alternative WYCO-C and Route Variations																
WYCO-C	210.4	0.0	0.1	0.3	0.0	1.2	0.1	0.2	0.0	10.5	9.2	0.0	0.0	17.4	0.6	0.0
<i>Wyoming</i>	144.0	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	3.7	0.0	0.0	0.0	0.1	0.6	0.0
<i>Colorado</i>	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.8	9.2	0.0	0.0	17.3	0.0	0.0
WYCO-C-1	210.8	0.0	0.1	0.3	0.0	1.2	0.1	0.2	0.0	10.5	9.2	0.0	0.0	21.0	0.6	0.0
<i>Wyoming</i>	144.0	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	3.7	0.0	0.0	0.0	3.8	0.6	0.0
<i>Colorado</i>	66.8	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.8	9.2	0.0	0.0	17.2	0.0	0.0
WYCO-C-2	210.4	0.0	0.1	0.3	0.0	1.2	0.1	0.2	0.0	11.1	9.2	0.0	0.0	21.6	0.0	0.0
<i>Wyoming</i>	144.0	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	3.7	0.0	0.0	0.0	3.8	0.6	0.0
<i>Colorado</i>	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	7.4	9.2	0.0	0.0	17.8	0.0	0.0
WYCO-C-3	210.4	0.0	0.1	0.3	0.0	1.2	0.1	0.2	0.0	11.2	9.2	0.0	0.0	21.6	0.6	0.0
<i>Wyoming</i>	144.0	0.0	0.1	0.3	0.0	0.0	0.1	0.2	0.0	3.7	0.0	0.0	0.0	3.8	0.6	0.0
<i>Colorado</i>	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.9	9.2	0.0	0.0	17.8	0.0	0.0
Alternative WYCO-D and Route Variation																
WYCO-D	250.0	0.5	0.1	0.8	0.0	0.6	0.8	1.6	0.0	6.8	9.2	0.0	0.0	17.1	3.1	0.0
<i>Wyoming</i>	135.0	0.0	0.1	0.8	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.6	1.1	0.0
<i>Colorado</i>	115.0	0.5	0.0	0.0	0.0	0.6	0.8	1.4	0.0	6.8	9.2	0.0	0.0	16.5	2.0	0.0
WYCO-D-1	250.0	0.5	0.1	0.8	0.0	0.6	0.8	1.6	0.0	6.9	9.2	0.0	0.0	17.2	3.1	0.0
<i>Wyoming</i>	135.0	0.0	0.1	0.8	0.0	0.0	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.6	1.1	0.0
<i>Colorado</i>	115.0	0.5	0.0	0.0	0.0	0.6	0.0	1.4	0.0	6.9	9.2	0.0	0.0	16.6	2.0	0.0

TABLE 3-189 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)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts (miles)		
			Continental Divide National Scenic Trail	National Historic Trails/ Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
Alternative WYCO-F and Route Variations																
WYCO-F	218.9	0.0	0.1	0.5	0.0	1.2	0.1	0.2	0.0	6.8	9.2	0.0	0.0	17.3	0.8	0.0
<i>Wyoming</i>	152.5	0.0	0.1	0.5	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.0
<i>Colorado</i>	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.8	9.2	0.0	0.0	17.2	0.0	0.0
WYCO-F-1	219.3	0.0	0.1	0.5	0.0	1.2	0.1	0.2	0.0	6.8	9.2	0.0	0.0	17.3	0.8	0.0
<i>Wyoming</i>	152.5	0.0	0.1	0.5	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.0
<i>Colorado</i>	66.8	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.8	9.2	0.0	0.0	17.2	0.0	0.0
WYCO-F-2	218.9	0.0	0.1	0.5	0.0	1.2	0.1	0.2	0.0	7.4	9.2	0.0	0.0	17.9	0.8	0.0
<i>Wyoming</i>	152.5	0.0	0.1	0.5	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.0
<i>Colorado</i>	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	7.4	9.2	0.0	0.0	17.8	0.0	0.0
WYCO-F-3	218.9	0.0	0.1	0.5	0.0	1.2	0.1	0.2	0.0	6.9	9.2	0.0	0.0	17.4	0.8	0.0
<i>Wyoming</i>	152.5	0.0	0.1	0.5	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.0
<i>Colorado</i>	66.4	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.9	9.2	0.0	0.0	17.3	0.0	0.0

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

In Table 3-190, 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 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 for a total of 26.4 miles (these categories do not restrict the development of Project but mitigation would still be utilized to reduce impacts on the ROS categories)
- Dinosaur Diamond Prehistoric Byway (0.1 mile)
- Motorized trails in Garfield County (2.8 miles) (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)

The following parks, preservation, and recreation resource areas are within the alternative route study corridor but are not crossed by the alternative route:

- 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)
- Motorized trails in Grand Junction Field Office and Mesa County (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)

Environmental Consequences (Wyoming)

Alternative COUT BAX-B would have no high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT BAX-B crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.3 mile), Skyline Drive Scenic Backway (0.1 mile), and Wedge Overlook/Buckhorn Drive Scenic Backway (0.5 mile)
- The Labyrinth Canyon SRMA (0.1 mile), Labyrinth Rims/Gemini Bridges SRMA (3.5 miles), and San Rafael Swell SRMA (8.5 miles)
- Old Spanish NHT (2.5 miles)
- Semi-primitive motorized, and roaded natural ROS categories in the BLM Price Field Office and Manti-La Sal National Forest (52.3 miles) (these 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)

- Crystal Geyser (0.2 mile) and Thompson Spring single track (0.6 mile) motorized trails in the BLM Moab Field Office, Arapeen OHV Trail (0.7 mile) and Paradise Trail (0.1 mile) motorized trails in the Manti-La Sal National Forest, and motorized trails in the BLM Price Field Office (0.3 mile) (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)
- Booths Canyon non-motorized trail in the Manti-La Sal National Forest (0.1 mile)

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- 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, 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, and 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 would have a total of 14.4 miles 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.

The Old Spanish NHT is also crossed for 2.5 miles. By applying mitigation measures such as minimizing new and improved accessibility (Selective Mitigation Measure 5), span or avoid the trail location (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), direct impacts on the Old Spanish NHT could be avoided. Per the BLM Price RMP, the alternative follows the Green River Crossing to Big Flat segment of the trail, which does allow rights-of-way within the designated corridor. Per the BLM Moab RMP, the Old Spanish NHT is not an avoidance or exclusion area for rights-of-way. Visual impacts from the towers crossing the trail are addressed in Section 3.2.16. Additional analysis and information for these trail crossings are located in Section 3.2.17.5, in accordance with BLM Manual 6280. Pending the approval of the Old Spanish NHT Comprehensive Management Plan, additional restrictions may occur where the Project crosses the trail.

The Labyrinth Canyon SRMA (0.1 mile), Labyrinth Rims/Gemini Bridges SRMA (3.5 miles), and San Rafael Swell SRMA (8.5 miles) have a total of moderate residual impacts where the Utah portion of Alternative COUT BAX-B crosses. By applying mitigation measures that minimize tree and brush clearing for the Project right-of-way within the SRMAs (Selective Mitigation Measure 4), minimize new and improved accessibility to the SRMAs (Selective Mitigation Measure 5), and maximize the span to

have fewer structures within the SRMAs, as well to avoid sensitive features (Selective Mitigation Measures 7 and 9), direct impacts on the SRMAs could be reduced down from a high to a moderate impact. Visual impacts from Alternative COUT BAX-B crossing the SRMAs are discussed in Section 3.2.16

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 mitigation measures that minimize tree and brush clearing for the Project right-of-way where the trail crossing occurs (Selective Mitigation Measure 4), minimizing new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 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 3.2.16.

Alternative COUT BAX-C

Affected Environment (Colorado)

Alternative COUT BAX-C crosses and has within the alternative study corridor the same parks, preservation, and recreation resource areas as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Alternative COUT BAX-C would have no high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT BAX-C crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.5 mile), Skyline Drive Scenic Backway (0.1 mile), and Wedge Overlook/Buckhorn Drive Scenic Backway (0.6 mile)
- The Labyrinth Canyon SRMA (0.1 mile) in the BLM Price Field Office, Labyrinth Rims/Gemini Bridges SRMA in the BLM Moab Field Office (3.7 miles), and San Rafael Swell SRMA in the BLM Price Field Office (5.4 miles)
- Old Spanish NHT (0.9 mile)
- Semi-primitive motorized, and roaded natural ROS categories in the BLM Price Field Office and Manti-La Sal National Forest (59.6 miles) (these 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)
- Crystal Geyser (0.2 mile) and Thompson Spring single track (0.6 mile) motorized trails in the BLM Moab Field Office, Arapeen OHV Trail (0.7 mile) and Paradise Trail (0.1 mile) motorized trails in the Manti-La Sal National Forest, and motorized trails in the BLM Price Field Office (1.5 miles) (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)
- Booths Canyon non-motorized trail in the Manti-La Sal National Forest (0.1 mile)

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- 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
- Roaded natural, rural, roaded modified, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest, and 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 would have a total of 10.1 miles 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.

The Old Spanish NHT is also crossed for 0.9 mile. By applying mitigation measures such as minimizing new and improved accessibility (Selective Mitigation Measure 5), span or avoid the trail location (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), direct impacts on the Old Spanish NHT could be avoided. Per the BLM Price RMP, the alternative follows the Green River Crossing to Big Flat segment of the trail, which does allow rights-of-way within the designated corridor. Per the BLM Moab RMP, the Old Spanish NHT is not an avoidance or exclusion area for rights-of-way. Visual impacts from the towers crossing the trail are addressed in Section 3.2.16. Additional analysis and information for these trail crossings are located in Section 3.2.17.5, in accordance with BLM Manual 6280. Pending the approval of the Old Spanish NHT Comprehensive Management Plan, additional restrictions may occur where the Project crosses the trail.

The Labyrinth Canyon SRMA in the BLM Price Field Office (0.1 mile), Labyrinth Rims/Gemini Bridges SRMA in the BLM Moab Field Office (3.7 miles), and San Rafael Swell SRMA in the BLM Price Field Office (5.4 miles) have a total of 9.2 miles of moderate residual impacts where the Utah portion of Alternative COUT BAX-C crosses. By applying mitigation measures that minimize tree and brush clearing for the Project right-of-way within the SRMAs (Selective Mitigation Measure 4), minimize new and improved accessibility to the SRMAs (Selective Mitigation Measure 5), and maximize the span to have fewer structures within the SRMAs, as well to avoid sensitive features (Selective Mitigation Measures 7 and 9), direct impacts on the SRMAs could be reduced down from a high to a moderate impact. Visual impacts from Alternative COUT BAX-C crossing the SRMAs are discussed in Section 3.2.16.

The Booths Canyon non-motorized trail in the Manti-La Sal National Forest is crossed by the Alternative Route for 0.1 mile. By applying mitigation measures that minimize tree and brush clearing for the Project right-of-way where the trail crossing occurs (Selective Mitigation Measure 4), minimizing new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the

recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 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 3.2.16.

Alternative COUT BAX-E

Affected Environment (Colorado)

Alternative COUT BAX-E crosses and has within the alternative study corridor the same parks, preservation, and recreation resource areas as Alternatives COUT BAX-B and COUT BAX-C.

Environmental Consequences (Colorado)

Alternative COUT BAX-E would have no high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT BAX-E crosses the following parks, preservation, and recreation resource areas similar to Alternatives COUT BAX-B and COUT BAX-C:

- Snow kite recreation area (0.5 mile), Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.8 mile) and the Energy Loop Scenic Byway (Huntington/Eccles Canyons section) (0.8 mile)
- The Labyrinth Canyon SRMA (0.1 mile) in the BLM Price Field Office and Labyrinth Rims/Gemini Bridges SRMA in the BLM Moab Field Office (3.5 miles)
- Old Spanish NHT (0.7 miles)
- Semi-primitive motorized, rural, and roaded natural ROS categories in the BLM Price Field Office and Semi-primitive motorized and roaded natural ROS categories in the Manti-La Sal National Forest (65.7 miles) (these 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)
- Crystal Geysers (0.2 mile) and Thompson Spring single track (0.6 mile) motorized trails in the BLM Moab Field Office, Western Loop motorized trail (0.2 mile) in Carbon County, and Cottonwood Ridge (0.4 mile) motorized trails in the Manti-La Sal National Forest (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail) Maple Fork non-motorized trail in the Manti-La Sal National Forest (0.1 mile).

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- 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 Geysers, Gooseberry Group Campground, Green River Overlook, The 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 would have a total of 4.7 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.

The snow kite recreation area is crossed for 0.5 mile. By applying mitigation measures such as minimizing new and improved accessibility to regulate access to the area (Selective Mitigation Measure 5) and span or avoid the location so as not to interfere with the snow kiting (Selective Mitigation Measure 7), impacts on the area could be mitigated down from a high to a moderate.

The Old Spanish NHT is also crossed for 0.7 mile. By applying mitigation measures such as minimizing new and improved accessibility (Selective Mitigation Measure 5), span or avoid the trail location (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), direct impacts on the Old Spanish NHT could be avoided. Per the BLM Price RMP, the alternative follows the Green River Crossing to Big Flat segment of the trail, which does allow rights-of-way within the designated corridor. Per the BLM Moab RMP, the Old Spanish NHT is not an avoidance or exclusion area for rights-of-way. Visual impacts from the towers crossing the trail are addressed in Section 3.2.16. Additional analysis and information for these trail crossings are located in Section 3.2.17.5, in accordance with BLM Manual 6280. Pending the approval of the Old Spanish NHT Comprehensive Management Plan, additional restrictions may occur where the Project crosses the trail.

The Labyrinth Canyon SRMA in the BLM Price Field Office (0.1 mile) and Labyrinth Rims/Gemini Bridges SRMA in the BLM Moab Field Office (3.5 miles) have a total of 3.6 miles of moderate residual impacts where the Utah portion of Alternative COUT BAX-E crosses. By applying mitigation measures that minimize tree and brush clearing for the Project right-of-way within the SRMAs (Selective Mitigation Measure 4), minimize new and improved accessibility to the SRMAs to prevent recreationists access from an unapproved access point (Selective Mitigation Measure 5), and maximize the span to have fewer structures within the SRMAs, as well to avoid sensitive features (Selective Mitigation Measures 7 and 9), direct impacts on the SRMAs could be reduced down from a high to a moderate impact. Visual impacts from Alternative COUT BAX-C crossing the SRMAs are discussed in Section 3.2.16.

The Maple Fork non-motorized trail in the Manti-La Sal National Forest is crossed by Alternative COUT BAX-E for 0.1 mile. By applying mitigation measures that minimize tree and brush clearing for the Project right-of-way where the trail crossing occurs (Selective Mitigation Measure 4), minimizing new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), 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 3.2.16.

**TABLE 3-190
 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)	Trails (miles)				Scenic Byways/ Backways (miles)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts ¹ (miles)		
			Continental Divide National Scenic Trail	National Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
COUT BAX-B	279.2	0.0	0.0	2.5	0.1	4.7	1.0	12.1	0.0	43.9	34.2	0.0	0.6	72.6	14.4	0.0
<i>Colorado</i>	<i>86.7</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.8</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>24.4</i>	<i>1.4</i>	<i>0.0</i>	<i>0.6</i>	<i>28.4</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>192.5</i>	<i>0.1</i>	<i>0.0</i>	<i>2.5</i>	<i>0.1</i>	<i>1.9</i>	<i>0.9</i>	<i>12.1</i>	<i>0.0</i>	<i>19.5</i>	<i>32.8</i>	<i>0.0</i>	<i>0.0</i>	<i>44.2</i>	<i>14.4</i>	<i>0.0</i>
COUT BAX-C	289.7	0.1	0.0	0.9	0.1	5.9	0.0	9.2	0.0	33.8	51.6	0.0	0.6	84.4	10.1	0.0
<i>Colorado</i>	<i>86.7</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.8</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>24.4</i>	<i>1.4</i>	<i>0.0</i>	<i>0.6</i>	<i>29.2</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>203.0</i>	<i>0.1</i>	<i>0.0</i>	<i>0.9</i>	<i>0.1</i>	<i>3.1</i>	<i>1.2</i>	<i>9.2</i>	<i>0.0</i>	<i>9.4</i>	<i>50.2</i>	<i>0.0</i>	<i>0.0</i>	<i>55.2</i>	<i>10.1</i>	<i>0.0</i>
COUT BAX-E	291.5	0.6	0.0	0.7	0.1	4.2	1.6	3.4	0.0	57.8	31.7	2.0	0.6	96.1	4.7	0.0
<i>Colorado</i>	<i>86.7</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.8</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>24.4</i>	<i>1.4</i>	<i>0.0</i>	<i>0.6</i>	<i>29.2</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>204.8</i>	<i>0.6</i>	<i>0.0</i>	<i>0.7</i>	<i>0.1</i>	<i>1.4</i>	<i>1.5</i>	<i>3.4</i>	<i>0.0</i>	<i>33.4</i>	<i>30.3</i>	<i>2.0</i>	<i>0.0</i>	<i>66.9</i>	<i>4.7</i>	<i>0.0</i>

NOTE: ¹Due to overlap of recreation areas with moderate impacts along the alternative routes, the total miles of moderate impacts is less than when individual recreation areas are added together.

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

In Table 3-191, miles of residual impacts are reported for parks, preservation, and recreation resources for COUT alternative routes.

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment (Colorado)

Alternative COUT-A 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 for a total of 24.0 miles (these 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)
- Dinosaur Diamond Prehistoric Byway (0.1 mile)

Elks Park is within the alternative route study corridor but is not crossed by the alternative route.

Route Variation COUT-A-1 crosses and has within the alternative route study corridor the same parks, preservation, and recreation resource areas as Alternative COUT-A.

Environmental Consequences (Colorado)

Alternative COUT-A and Route Variation COUT-A-1

Alternative COUT-A and Route Variation COUT-A-1 in Colorado have no high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT-A crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.1 mile) and the White River/Strawberry Road Scenic Backway (0.1 mile)
- Roded modified, roaded natural, and semi-primitive motorized ROS categories in the Uinta National Forest (20.4 miles) (these 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)
- Strawberry OHV (0.8 mile) and Tank Hollow Connector (0.2 mile) motorized trails in the Uinta National Forest (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)
- Willow Creek South (0.1 mile) and French Hollow (0.1 mile) non-motorized trails in the Uinta National Forest and the Blind Canyon (0.1 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- The Aspen Grove Campground and Boat Ramp, Big Mountain Campground, Birdseye Marble Quarry Roadside Marker, 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, private OHV track, Sheep Creek Camping Area, Solider Creek Overlook, Solider Creek Dam Day Use Area, Starvation State Park, Strawberry River Recreation Site
- Nebo Loop Scenic Byway
- Semi-primitive motorized and roaded natural ROS categories in the Manti-La Sal National Forest and rural and primitive ROS categories in the Uinta-Wasatch-Cache National Forest
- Far Side non-motorized trail in the BLM Vernal Field Office and Willow Creek South, Strawberry Narrows, Buffalo Canyon, Teat Mountain, and Sky High non-motorized trails in the Uinta National Forest
- Nebo Loop motorized snow trail in the Uinta National Forest

Route Variation COUT-A-1 crosses the same parks, preservation, and recreation resource areas as Alternative COUT-A except for the miles associated with crossing the White River/Strawberry Road Scenic Backway (0.3 mile) and the roaded modified, roaded natural, and semi-primitive motorized ROS categories in the Uinta National Forest (20.0 miles).

Route Variation COUT-A-1 has the same parks, preservation, and recreation resource areas within the alternative route study corridor but not crossed by the alternative as Alternative COUT-A, except for Buffalo Canyon non-motorized trail in the Uinta National Forest, which is not within the COUT-A-1 alternative study corridor.

Environmental Consequences (Utah)

Alternative COUT-A

Alternative COUT-A and its route variation would have a total of 0.3 miles of moderate residual impacts where the alternative route crosses Willow Creek South (0.1 mile) and French Hollow (0.1 mile) non-motorized trails in the Uinta National Forest and the Blind Canyon (0.1 mile) non-motorized trail in the Manti-La Sal National Forest. By applying mitigation measures that minimize tree and brush clearing for the Project right-of-way where the trail crossings occur (Selective Mitigation Measure 4), minimizing new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), 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 3.2.16.

There are no high residual impacts associated with the alternative route.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment (Colorado)

Alternative COUT-B and route variations cross and have within the alternative study corridors the same parks, preservation, and recreation resource areas as Alternative COUT-A.

Environmental Consequences (Colorado)

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Alternative COUT-B and Route Variations COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5 have no high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT-B crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile) and a private OHV track (0.3 mile)
- Dinosaur Diamond Prehistoric Byway (0.2 mile), Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.1 mile) and the Energy Loop: Huntington/Eccles Canyons Scenic Byway (0.1 mile)
- Roaded modified ROS category in the Uinta National Forest, roaded natural ROS category in the Ashley National Forest, and roaded natural and semi-primitive motorized ROS categories in the Manti-La Sal National Forest (21.9 miles) (these 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).
- The Great Western Trail (0.2 mile) managed by the USFS and the 10128 (0.1 mile), 10489 (0.1 mile), 10496 (0.1 mile), and 10172 (0.1 mile) motorized trails in the Ashley National Forest (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)
- Quitchampau (0.1 mile) non-motorized trail in the Ashley National Forest and the Blind Canyon (0.1 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- 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, Birdseye Marble Quarry Roadside Marker, Big Mountain Campground, Sheep Creek Camping Area
- 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, and semi-primitive motorized and semi-primitive non-motorized ROS categories in the Ashley National Forest

- 1049 and South Death Trap Canyon motorized trail in the Ashley National Forest, Tank Hollow Connector motorized trail and Nebo Loop snow mobile trail in the Uinta National Forest
- Far Side non-motorized trail in Vernal BLM Field Office, Mill Hollow non-motorized trail in the Ashley National Forest, Sky High non-motorized trail in the Manti-La Sal National Forest, and the Teat Mountain, Indian Creek to Willow Creek Ridge, and Indian Creek Sheep Camp #1 non-motorized trails in the Uinta National Forest

The Utah portions of the Alternative COUT-B route variations cross many of the same parks, preservation, and recreation resource areas. The following lists the route variations and whether what is crossed is the same or different than Alternative COUT-B:

- Route Variation COUT-B-1 crosses additional miles of scenic byways that include Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.5 mile) and Reservation Ridge Scenic Backway (1.5 miles) and additional motorized trails in the Ashley National Forest (0.2 mile). Route Variation COUT-B-1, in addition to the ROS categories identified for Alternative COUT-B, crosses the roaded natural ROS category in the Uinta National Forest (24.3 miles) (these 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). This route variation does not cross the Energy Loop: Huntington/Eccles Canyons Scenic Byway.
- Route Variation COUT-B-2, in addition to the ROS categories identified for Alternative COUT-B, crosses the roaded natural ROS category in the Uinta National Forest (23.9 miles) (these 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) and crosses additional miles of scenic byways that include Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.2 mile) and Reservation Ridge Scenic Backway (0.8 miles). Route Variation COUT-B-2 also crosses a private recreational property/camping area (0.2 mile) in addition to the Nephi Shooting Range and private OHV track already identified under the Alternative COUT-B section above.
- Route Variation COUT-B-3 crosses fewer miles of scenic byways than Alternative COUT-B, with just Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.3 mile) being crossed.
- Route Variation COUT-B-4, in addition to the ROS categories identified for Alternative COUT-B, crosses the roaded natural ROS category in the Uinta National Forest (23.9 miles) (these 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) and crosses additional miles of scenic byways that include Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.2 mile) and Reservation Ridge Scenic Backway (0.8 mile).
- Route Variation COUT-B-5 crosses a private recreational property/camping area (0.2 mile) in addition to the Nephi Shooting Range and private OHV track already identified under the Alternative COUT-B section above. COUT-B-5 crosses fewer miles of scenic byways, with just Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.3 mile) being crossed.

The Utah portions of Alternative COUT-B route variations have similar parks, preservation, and recreation resource areas within the alternative route study corridor but not crossed by the route variations. The following lists the route variations and whether what is within the alternative route study corridor is the same or different than Alternative COUT-B:

- Route Variation COUT-B-1 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-B, plus the White River/Strawberry Road Scenic Backway, motorized trails in the Ashley National Forest (10657, 10169, 10327, 10326, 10100, 10099, 10098, 10101, 10102, 10324, 10114, 10084, 10082, and 10323), and the Avintaquin Campground. The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosk (Utah State Route 96) is not within the alternative route study corridor.
- Route Variation COUT-B-2 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-B, plus the White River/Strawberry Road Scenic Backway and motorized trails in the Ashley National Forest (10491, 10657, 10084, 10082, 10323, 10098, 10099, and 10169).
- Route Variations COUT-B-3, COUT-B-4, and COUT-B-5 have the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-B, plus the White River/Strawberry Road Scenic Backway.
- Route Variations COUT-B-2 and COUT-B-4 have the roaded natural ROS category in the Ashley National Forest within the alternative route study corridor in addition to the ROS categories already identified for Alternative COUT-B.

Environmental Consequences (Utah)

Alternative COUT-B

Alternative COUT-B would have a total of 0.2 mile of moderate residual impacts where the alternative route crosses Quitchampau (0.1 mile) non-motorized trail in the Ashley National Forest and the Blind Canyon (0.1 mile) non-motorized trail in the Manti-La Sal National Forest. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the trail crossings occur (Selective Mitigation Measure 4), minimizing new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), 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 3.2.16.

There are no high residual impacts associated with the alternative route.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Route Variations COUT-B-1, COUT-B-3, and COUT-B-4 would have the same residual impacts as Alternative COUT-B. Route Variations COUT-B-2 and COUT-B-5 have 0.4 mile of moderate impacts, with 0.2 mile of moderate impacts occurring where the Quitchampau and Blind Canyon non-motorized trails would be crossed (as described under on Alternative COUT-B. The additional 0.2 mile of moderate impacts occur where a private recreational property/camping area is crossed. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the private recreational property/camping area where the crossing occurs (Selective Mitigation Measure 4), minimizing new and improved accessibility to the private property so as to prevent unauthorized access to the private property (Selective Mitigation Measure 5), and span or avoid the private recreational property/camping area to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), direct impacts on the private recreational property/camping area could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing this area are addressed in Section 3.2.16.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Affected Environment (Colorado)

Alternative COUT-C and route variations cross the following parks, preservation, and recreation resource areas:

- Semi-primitive motorized and roaded natural ROS categories managed by the BLM White River Field Office for a total of 24.8 miles (these 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)
- Dinosaur Diamond Prehistoric Byway (0.1 mile)

For Alternative COUT-C, there are no parks, preservation, or recreation resource areas that are within the alternative route study corridor but not crossed by the alternative route.

Environmental Consequences (Colorado)

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Alternative COUT-C and route variations in Colorado have no moderate or high residual impacts.

Affected Environment (Utah)

Alternative COUT-C crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile) and Private OHV track (0.3 mile)
- Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.1 mile), the Energy Loop: Huntington/Eccles Canyons Scenic Byway (0.1 mile), and Nine Mile Canyon Backway (0.1 mile)
- Roaded modified ROS category in the Uinta National Forest and roaded natural and semi-primitive motorized ROS categories in the Manti-La Sal National Forest, roaded natural ROS category in the Ashley National Forest, and semi-primitive non-motorized ROS category in the BLM Price Field Office (11.2 miles) (these 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)
- The 10658 (0.3 mile) motorized trail in the Ashley National Forest and Great Western (0.2 mile) motorized trail managed by the USFS (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)
- Blind Canyon (0.1 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- Enron Campground, The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosks, 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, Birdseye Marble Quarry Roadside Marker, Big Mountain Campground, and White River Raft Access

- Dinosaur Diamond Prehistoric Byway, Nebo Loop Scenic Byway and Reservation Ridge Scenic Backway, and Skyline Drive Scenic Backway
- Fantasy Canyon SRMA and Nine Mile/Nine Mile Canyon 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, and roaded natural ROS categories in the Ashley National Forest
- Tank Hollow Connector motorized trail and Nebo Loop snow mobile trail in the Uinta National Forest
- Sky High non-motorized trail in the Manti-La Sal National Forest and Teat Mountain Indian Creek to Willow Creek Ridge, and Indian Creek Sheep Canyon #1 non-motorized trail in the Uinta National Forest

The Utah portions of the Alternative COUT-C route variations cross many of the same parks, preservation, and recreation resource areas. The following lists the route variations and whether what is crossed is the same or different than Alternative COUT-C:

- Route Variation COUT-C-1 crosses additional miles of scenic byways that include Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.4 mile) and Reservation Ridge Scenic Backway (1.5 mile) and additional motorized trails in the Ashley National Forest (0.3 mile). Route Variation COUT-C-1, in addition to the ROS categories identified for Alternative COUT-C, crosses the roaded natural ROS category in the Uinta National Forest (12.3 miles) (these 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). This route variation does not cross the Energy Loop: Huntington/Eccles Canyons Scenic Byway or semi-primitive non-motorized ROS category in the Price Field Office.
- Route Variation COUT-C-2, in addition to the ROS categories identified for Alternative COUT-C, crosses the roaded natural ROS category in the Uinta National Forest (11.9 miles) (these 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) and crosses additional miles of scenic byways that include Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.2 mile) and Reservation Ridge Scenic Backway (0.8 miles). Route Variation COUT-C-2 also crosses a private recreational property/camping area (0.2 mile) in addition to the Nephi Shooting Range and private OHV track already identified under the Alternative COUT-C section above. Route Variation COUT-C-2 does not cross semi-primitive non-motorized ROS category in the Price Field Office.
- Route Variation COUT-C-3 crosses fewer miles of scenic byways, with just Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.2 mile) being crossed. Route Variation COUT-C-3 also crosses a private recreational property/camping area (0.2 mile) in addition to the Nephi Shooting Range and private OHV track already identified under the Alternative COUT-C section above. Route Variation COUT-C-3 does not cross semi-primitive non-motorized ROS category in the Price Field Office.
- Route Variation COUT-C-4, in addition to the ROS categories identified for Alternative COUT-C, crosses the roaded natural ROS category in the Uinta National Forest and additional miles of semi-primitive non-motorized ROS category in the Price Field (14.9 miles) (these 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). Route Variation COUT-C-4 crosses additional miles of scenic byways that include Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.1 mile) and Reservation Ridge Scenic Backway (0.8 mile).

- Route Variation COUT-C-5 crosses fewer miles of scenic byways, with just Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.2 mile) being crossed, and it crosses additional miles of semi-primitive non-motorized ROS category in the Price Field Office (12.9 miles) (these 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).

The Utah portions of Alternative COUT-C route variations have the same parks, preservation, and recreation resource areas within the 2-mile-wide alternative route study corridors but not crossed by the route variations. The following lists the route variations and whether what is within the alternative route study corridor is the same or different than Alternative COUT-C:

- Route Variation COUT-C-1 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-C, plus the White River/Strawberry Road Scenic Backway, Skyline Drive Scenic Backway, additional motorized trails in the Ashley National Forest (10154, 10169, 10327, 10326, 10100, 10099, 10098, 10101, 10102, 10324, 10114, 10084, 10082, and 10323), and the Avintaquin Campground. The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosk (Utah State Route 96), The Energy Loop: Huntington/Eccles Canyons Scenic Byway, and Nine Mile Canyon SRMA in the Price Field Office are not within the alternative route study corridor.
- Route Variation COUT-C-2 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-C, plus the White River/Strawberry Road Scenic Backway, road natural ROS category in the Ashley National Forest, and motorized trails in the Ashley National Forest (10491, 10657, 10084, 10082, 10323, 10098, 10099, and 10169). The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosk (Utah State Route 96), The Energy Loop: Huntington/Eccles Canyons Scenic Byway and the Nine Mile Canyon SRMA in the Price Field Office are not within the alternative route study corridor.
- Route Variation COUT-C-3 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-B, plus for the White River/Strawberry Road Scenic Backway and motorized trails in the Ashley National Forest (10084, 10082, 10323, 10098, 10099, and 10169). The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosk (Utah State Route 96) and the Nine Mile Canyon SRMA in the Price Field Office are not within the alternative route study corridor.
- Route Variation COUT-C-4 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-B, plus the White River/Strawberry Road Scenic Backway, motorized trails in the Ashley National Forest (10084, 10082, 10323, 10098, 10099, and 10169), and road natural ROS category in the Ashley National Forest. The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosk (Utah State Route 96) and the Nine Mile Canyon SRMA in the Price Field Office are not within the alternative route study corridor.
- Route Variation COUT-C-5 has the same parks, preservation, and recreation resource areas within the alternative route study corridor as Alternative COUT-C, plus the White River/Strawberry Road Scenic Backway. The Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosk (Utah State Route 96) and the Nine Mile Canyon SRMA in the Price Field Office are not within the alternative route study corridor.

Environmental Consequences (Utah)

Alternative COUT-C

Alternative COUT-C has a total of 1.3 miles of high residual impacts where the alternative route crosses semi-primitive non-motorized ROS category in the BLM Price Field Office. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the alternative route would cross the ROS area (Selective Mitigation Measure 4) and minimizing new and improved accessibility to the ROS area so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), direct impacts on the semi-primitive non-motorized ROS category in the BLM Price Field Office could be minimized but would remain as a high residual impact since these semi-primitive areas are adjacent to a portion of the Nine Mile Canyon SRMA and this ROS category typically doesn't allow for roads or other permanent facilities to be developed within the category.

Alternative COUT-C has a total of 0.1 miles 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 that minimize tree and brush clearing of the Project right-of-way where the trail crossings occur (Selective Mitigation Measure 4), minimize new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), 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 3.2.16.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Route Variations COUT-C-1, COUT-C-2, and COUT-C-3 would have no high residual impacts. Route Variations COUT-C-4 and COUT-C-5 have 3.0 miles of high impacts from crossing an additional 1.7 miles of semi-primitive non-motorized ROS category in the BLM Price Field Office. The applicable mitigation would be the same as listed for Alternative COUT-C.

Route Variations COUT-C-1, COUT-C-4, and COUT-C-5 would have the same moderate residual impacts as Alternative COUT-C. Route Variations COUT-C-2 and COUT-C-3 would have an additional 0.2 mile of moderate impacts occur where a private recreational property/camping area is crossed. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the private recreational property/camping area where the crossing occurs (Selective Mitigation Measure 4), minimize new and improved accessibility to the private property so as to prevent unauthorized access to the private property (Selective Mitigation Measure 5), and span or avoid the private recreational property/camping area to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), direct impacts on the private recreational property/camping area could be minimized from a high initial impact to a moderate residual impact. Additional analysis and discussion regarding visual impacts from the Project crossing this area are addressed in Section 3.2.16.

Alternative COUT-H (Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-H 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 for a total of 24.8 miles. These 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

- Dinosaur Diamond Prehistoric Byway (0.1 mile)

For Alternative COUT-H, there are no parks, preservation, or recreation resource areas that are within the alternative route study corridor but not crossed by the alternative route.

Environmental Consequences (Colorado)

For Alternative COUT-H, there are no high or moderate residual impacts.

Affected Environment (Utah)

Alternative COUT-H crosses the following parks, preservation, and recreation resource areas:

- Snow kite recreation areas (0.5 mile), Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway (0.5 mile), the Energy Loop: Huntington/Eccles Canyons Scenic Byway (0.7 mile), and Nine Mile Canyon Backway (0.1 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, and rural, roaded natural, semi-primitive non-motorized and semi-primitive motorized ROS categories in the BLM Price Field Office (13.5 miles) (these 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)
- 10658 (0.3 mile) motorized trail in the Ashley National Forest, Cottonwood Ridge (0.4 mile) motorized trail in the Manti-La Sal National Forest, and Western Loop (1.6 miles) motorized trail in Carbon County (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)
- Maple Fork (0.1 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- The Bamberger Roadside Monument, Beaver Dam Reservoir Recreation Site, Big Mountain Campground, Burnout Canyon/Upper Electric Lake Scenic Byway Sign, Camp MIA Shalom, Enron Campground, Energy Loop: Huntington/Eccles Canyons Scenic Byway Kiosks, Fantasy Canyon Trailhead, 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
- Nebo Loop Scenic Byway and Skyline Drive Scenic Backway
- Fantasy Canyon SRMA and Nine Mile/Nine Mile Canyon SRMA
- Rural, roaded modified, roaded natural, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest, and urban ROS category in the BLM Price Field Office
- 10154 motorized trail in the Ashley National Forest, motorized trails in the BLM Price Field Office, and Nebo Loop snow mobile 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-H has a total of 1.3 miles of high residual impacts where the alternative route crosses a semi-primitive non-motorized ROS category in the BLM Price Field Office. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the alternative route would cross the semi-primitive ROS area (Selective Mitigation Measure 4) and minimizing new and improved accessibility up to the semi-primitive ROS area so as to restrict unapproved access to the semi-primitive ROS area (Selective Mitigation Measure 5), direct impacts on the semi-primitive non-motorized ROS category in the BLM Price Field Office would be minimized but would remain as a high residual impact because this ROS category typically does not allow for permanent roads or other facilities to be developed within the category.

Alternative COUT-H has a total of 0.6 miles of moderate residual impacts. Where the alternative route crosses Maple Fork non-motorized trail in the Manti-La Sal National Forest, 0.1 mile of moderate impacts occur. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the trail crossings occur (Selective Mitigation Measure 4), minimize new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), 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 3.2.16.

In addition, Alternative COUT-H has 0.5 mile of moderate impacts where the alternative route crosses a snow kite recreation area. By applying mitigation measures that minimize new and improved accessibility to regulate access to the area (Selective Mitigation Measure 5) and span or avoid the location so as not to interfere with the snow kiting (Selective Mitigation Measure 7), impacts on the area could be mitigated down from a high to a moderate.

Alternative COUT-I

Affected Environment (Colorado)

Alternative COUT-I crosses and has within the alternative route study corridor the same parks, preservation, and recreation resource areas as COUT-H.

Environmental Consequences (Colorado)

For Alternative COUT-I, there would not be any high or moderate residual impacts associated with the Alternative.

Affected Environment (Utah)

Alternative COUT-I crosses the following parks, preservation, and recreation resource areas:

- Nephi Shooting Range (0.1 mile)
- Dinosaur Diamond Prehistoric Byway (0.2 mile), Skyline Drive Scenic Backway (0.1 mile), the Energy Loop: Huntington/Eccles Canyons Scenic Byway (0.1 mile), and Nine Mile Canyon Backway (0.1 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, and rural, roaded natural, semi-primitive non-motorized and semi-primitive motorized ROS categories in the BLM Price

Field Office (45.3 miles) (these 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)

- 10658 (0.3 mile) motorized trail in the Ashley National Forest, Paradise Creek (0.1 mile) motorized trail in the Manti-La Sal National Forest, motorized trails (0.3 mile) in the BLM Price Field Office, and Arapeen OHV Trail (0.7 mile) managed by the USFS (Selective Mitigation Measures 5, 7, and 9 are applied to avoid impacting the trails and as well as to prevent new, unauthorized access of areas outside of the existing designated trail)
- Booths Canyon (0.1 mile) non-motorized trail in the Manti-La Sal National Forest

The following parks, preservation, and recreation resource areas are within the 2-mile-wide alternative route study corridor but are not crossed by the alternative route:

- The Big Mountain Campground, Enron Campground, Indian Creek Campground, Fantasy Canyon Trailhead, Fourmile Bottom River boat put-in, Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site), Camperworld, Olsen Reservoir, Potter's Pond Campground, White River Raft Access
- Nebo Loop Scenic Byway
- Fantasy Canyon SRMA and Nine Mile/Nine Mile Canyon SRMA
- Rural, roaded modified, roaded natural, semi-primitive motorized, and primitive ROS categories in the Uinta National Forest and roaded natural ROS category in the Ashley National Forest
- 10154 motorized trail in the Ashley National Forest, Scad Valley Divide motorized trail in the Manti-La Sal National Forest, and Nebo Loop snow mobile trail in the Uinta National Forest
- Seeley Canyon Spur non-motorized trail in the Manti-La Sal National Forest

Environmental Consequences (Utah)

Alternative COUT-I would have a total of 1.3 miles of high residual impacts where the alternative route crosses semi-primitive non-motorized ROS category in the BLM Price Field Office. By applying mitigation measures that minimize tree and brush clearing of the Project right-of-way where the alternative route would cross a semi-primitive ROS area (Selective Mitigation Measure 4) and minimizing new and improved accessibility up to the semi-primitive ROS area so as to restrict unapproved access to the semi-primitive ROS area (Selective Mitigation Measure 5), direct impacts on the semi-primitive non-motorized ROS category in the BLM Price Field Office would be minimized but would remain as a high residual impact because this ROS category typically does not allow for permanent roads or other facilities to be developed within the category.

Alternative COUT-I would have a total of 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 mitigation measures that minimize tree and brush clearing of the Project right-of-way where the trail crossings occur (Selective Mitigation Measure 4), minimize new and improved accessibility to the trail so as to restrict unapproved access for recreationists (Selective Mitigation Measure 5), span or avoid the trail location so as to help reduce the impacts on the recreationist experience (Selective Mitigation Measure 7), and maximize the span over the trail location (Selective Mitigation Measure 9), 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 3.2.16.

TABLE 3-191 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)	Trails (miles)				Scenic Byways/ Backways (miles)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts (miles)		
			Continental Divide National Scenic Trail	National Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
Alternative COUT-A and Route Variation																
COUT-A	206.0	0.1	0.0	0.0	0.3	1.0	0.3	0.0	0.0	25.7	18.7	0.0	0.0	44.4	0.3	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	182.0	0.1	0.0	0.0	0.3	1.0	0.2	0.0	0.0	4.4	16.0	0.0	0.0	20.4	0.3	0.0
COUT-A-1	205.6	0.1	0.0	0.0	0.3	1.0	0.5	0.0	0.0	25.8	18.2	0.0	0.0	44.0	0.3	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	181.6	0.1	0.0	0.0	0.3	1.0	0.4	0.0	0.0	4.5	15.5	0.0	0.0	20.0	0.3	0.0
Alternative COUT-B and Route Variations																
COUT-B	216.0	0.4	0.0	0.0	0.2	0.6	0.5	0.0	0.0	22.7	23.2	0.0	0.0	46.7	0.2	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	192.0	0.4	0.0	0.0	0.2	0.6	0.4	0.0	0.0	1.4	20.5	0.0	0.0	22.7	0.2	0.0
COUT-B-1	212.7	0.4	0.0	0.0	0.2	0.8	2.1	0.0	0.0	22.7	25.6	0.0	0.0	50.5	0.2	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	188.7	0.4	0.0	0.0	0.2	0.8	2.0	0.0	0.0	1.4	22.9	0.0	0.0	26.5	0.2	0.0
COUT-B-2	214.2	0.0	0.0	0.0	0.2	0.6	1.1	0.0	0.0	22.7	25.2	0.0	0.0	48.9	0.4	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	190.2	0.6	0.0	0.0	0.2	0.6	1.0	0.0	0.0	1.4	22.5	0.0	0.0	24.9	0.4	0.0
COUT-B-3	213.9	0.4	0.0	0.0	0.2	0.6	0.4	0.0	0.0	22.7	23.2	0.0	0.0	46.6	0.2	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	189.9	0.4	0.0	0.0	0.2	0.6	0.3	0.0	0.0	1.4	20.5	0.0	0.0	22.6	0.2	0.0
COUT-B-4	214.2	0.4	0.0	0.0	0.2	0.6	1.1	0.0	0.0	22.7	25.2	0.0	0.0	48.9	0.2	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	190.2	0.4	0.0	0.0	0.2	0.6	1.0	0.0	0.0	1.4	22.5	0.0	0.0	24.9	0.2	0.0
COUT-B-5	213.9	0.6	0.0	0.0	0.2	0.6	0.4	0.0	0.0	22.7	23.2	0.0	0.0	46.6	0.4	0.0
Colorado	24.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.3	2.7	0.0	0.0	24.0	0.0	0.0
Utah	189.9	0.6	0.0	0.0	0.2	0.6	0.3	0.0	0.0	1.4	20.5	0.0	0.0	22.6	0.4	0.0

TABLE 3-191 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)	Trails (miles)				Scenic Byways/ Backways (miles)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts (miles)		
			Continental Divide National Scenic Trail	National Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
Alternative COUT-C and Route Variations																
COUT-C	209.8	0.4	0.0	0.0	0.1	0.5	0.4	0.0	1.3	23.3	11.4	0.0	0.0	35.8	0.1	1.3
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.9	2.9	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	185.0	0.4	0.0	0.0	0.1	0.5	0.3	0.0	1.3	1.4	8.5	0.0	0.0	11.0	0.1	1.3
COUT-C-1	206.4	0.4	0.0	0.0	0.1	0.7	2.0	0.0	0.0	23.3	13.8	0.0	0.0	39.6	0.1	0.0
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.9	2.9	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	181.6	0.4	0.0	0.0	0.1	0.7	1.9	0.0	0.0	1.4	10.9	0.0	0.0	14.8	0.1	0.0
COUT-C-2	207.9	0.6	0.0	0.0	0.1	0.5	1.0	0.0	0.0	23.3	13.4	0.0	0.0	38.0	0.3	0.0
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.9	2.9	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	183.1	0.6	0.0	0.0	0.1	0.5	0.9	0.0	0.0	1.4	10.5	0.0	0.0	13.2	0.3	0.0
COUT-C-3 (Agency Preferred Alternative)	207.6	0.6	0.0	0.0	0.1	0.5	0.3	0.0	0.0	23.3	11.4	0.0	0.0	35.7	0.3	0.0
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.9	2.9	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	182.8	0.6	0.0	0.0	0.1	0.5	0.2	0.0	0.0	1.4	8.5	0.0	0.0	10.9	0.3	0.0
COUT-C-4	207.9	0.4	0.0	0.0	0.1	0.5	1.0	0.0	3.0	23.3	13.4	0.0	0.0	37.7	0.1	3.0
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.9	2.9	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	183.1	0.4	0.0	0.0	0.1	0.5	0.9	0.0	3.0	1.4	10.5	0.0	0.0	13.2	0.1	3.0
COUT-C-5	207.6	0.4	0.0	0.0	0.1	0.5	0.3	0.0	3.0	23.3	11.4	0.0	0.0	35.7	0.1	3.0
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	21.9	2.9	0.0	0.0	24.8	0.0	0.0
<i>Utah</i>	182.8	0.4	0.0	0.0	0.1	0.5	0.2	0.0	3.0	1.4	8.5	0.0	0.0	10.9	0.1	3.0

TABLE 3-191 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)	Trails (miles)				Scenic Byways/ Backways (miles)	Special Recreation Management Area (miles)	Recreation Opportunity Spectrum (miles)					Residual Impacts (miles)		
			Continental Divide National Scenic Trail	National Historic Trails	Non-motorized	Motorized			Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban	Low	Moderate	High
Alternatives COUT-H and COUT-I																
COUT-H (Applicant Preferred Alternative)	200.6	0.6	0.0	0.0	0.1	2.3	1.4	0.0	1.3	27.1	8.7	1.2	0.0	38.2	0.6	1.3
<i>Colorado</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>21.9</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>175.8</i>	<i>0.6</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>2.3</i>	<i>1.3</i>	<i>0.0</i>	<i>1.3</i>	<i>5.2</i>	<i>5.8</i>	<i>1.2</i>	<i>0.0</i>	<i>14.4</i>	<i>0.6</i>	<i>1.3</i>
COUT-I	240.2	0.1	0.0	0.0	0.1	1.4	0.6	0.0	1.3	47.7	18.5	2.6	0.0	69.5	0.1	1.3
<i>Colorado</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>21.9</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>24.8</i>	<i>0.0</i>	<i>0.0</i>
<i>Utah</i>	<i>215.4</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>1.4</i>	<i>0.5</i>	<i>0.0</i>	<i>1.3</i>	<i>25.8</i>	<i>15.6</i>	<i>2.6</i>	<i>0.0</i>	<i>44.7</i>	<i>0.1</i>	<i>1.3</i>

3.2.11.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Siting Area A – Powder Wash

Affected Environment

Siting Area A contains the following parks, preservation, and recreation resources:

- The Cherokee Historic Trail (located in the northern portion of Siting Area A)
- The East Ruedloff Draw, Ruedloff Powder Wash, and Horse Draw motorized trails in the BLM Little Snake Field Office (located in the southern portion of Siting Area A)
- Front Country ROS area in the BLM Rawlins Field Office (located in the far northwestern corner of Siting Area A)

Environmental Consequences

It is not anticipated that the series compensation station would be located on the Cherokee Historic Trail per the BLM Rawlins Field Office RMP, which describes the Cherokee Historic Trail as a utility avoidance area, with ground-disturbing and disruptive activities not allowed within 0.25 mile or the visual horizon, whichever is closer. If the series compensation station is located within 0.25 mile of the visual horizon, the area's environmental sensitivity and other feasible alternatives will need to be assessed before an authorization can be considered. (BLM 2008b). Potential visual impacts on the Cherokee Historic Trail in Siting Area A are described in Section 3.2.16.

If a motorized trail is located within the vicinity of the series compensation station, the trail could be upgraded to provide access for construction, maintenance, and operation activities. The trail could potentially need to be re-routed or closed permanently if the series compensation station directly conflicts with the trail(s).

If located in the Front Country ROS area, recreation user's ability to access the area could potentially 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:

- The Godiva Rim and Major Draw motorized trails in the BLM Little Snake Field Office (located in the southern portion of Siting Area B)
- Raftopoulous Hunting Lease (located in the far southwestern corner of Siting Area B)

Environmental Consequences

If a motorized trail is located within the vicinity of the series compensation station, the trail could be upgraded to provide access for construction, maintenance, and operation activities. The trail could potentially need to be re-routed or closed permanently if it directly conflicts with the series compensation station.

If the series compensation station was located on the Raftopoulous Hunting Lease, potential effects on the lease area include removal of lands used for hunting and wildlife habitat.

Siting Area C – Maybell

Affected Environment

Siting Area C contains the following parks, preservation, and recreation resources:

- The Simsberry, Peck Mesa Northwest, Southwest and Southeast, Yampa Valley, and East Cross Mountain motorized trails in the BLM Little Snake Field Office (located in the central and northern portion of Siting Area C)
- South Cross Mountain trailhead (located in the central portion of Siting Area C)
- Yampa River State Park (located on the west-central edge of Siting Area C)

Environmental Consequences

If a motorized trail is located within the vicinity of the series compensation station, a trail could be upgraded to provide access for construction, maintenance, and operation activities. A trail could potentially need to be re-routed or closed permanently if it directly conflicts with the series compensation station.

If the series compensation station is sited in the Yampa River State Park (East Cross Mountain), it is not anticipated that the series compensation station would be located within the state park. However, access to the state park could be altered during construction if the series compensation station were located within the vicinity of the state park.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

Siting Area D – Bell Rock

Affected Environment

Siting Area D contains the following parks, preservation, and recreation resource:

- 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 that the series compensation station would be located in the Little Yampa Canyon SRMA. If the series compensation station is located within 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 3.2.16.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

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:

- The Old Spanish NHT (located in the central and northern portion of Siting Area G)
- 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

It is not anticipated that the series compensation station would be located on the Old Spanish NHT. Access to the trail could be limited by construction as well as the trail setting from the addition of an industrialized facility. Potential visual impacts on the Old Spanish NHT in Siting Area G are described in Section 3.2.16.

If a motorized trail is located within the vicinity of the series compensation station, a trail could be upgraded to provide access for construction, maintenance, and operation activities. A trail could potentially 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 could potentially be affected if access routes are re-routed or closed

Alternative COUT-A and Route Variation (COUT-A-1)

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)
- Bottle Hollow Reservoir, Fort Duchesne Rifle Range, and Fort Duchesne Park recreation sites (located in the northeastern portion of Siting Area F)

Environmental Consequences

If a series compensation station is located within 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 3.2.16.

It is not anticipated that 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 and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

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

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Siting Area E – Bonanza

Affected Environment

There are no parks, preservation, and recreations areas in Siting Area E.

Environmental Consequences

There are no impacts on parks, preservation, and recreations areas in Siting Area E.

Alternatives COUT-H (Applicant Preferred Alternative) 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 and route variations.

3.2.12 Transportation and Access

3.2.12.1 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 and variations of the reference centerline. Roadways were also 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 within 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.

3.2.12.1.1 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 within the United States, including the District of Columbia and the Commonwealth of Puerto Rico, and authorized the Secretary of Transportation to make future modifications to the system (FHWA 1995). This includes interstate and U.S. highways. The American Association of State Highway and Transportation Officials and the FHWA are responsible for interstate and U.S. highways within 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.

BLM

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 (USFS 2008) 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 (State of Utah 2013b). 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 National Electrical Safety Code requirements.

State

Roadways

State departments of transportation are responsible for building and maintaining state highways and routes. As discussed above, these state 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 2013a). Design standards, specifications, and guidelines are defined in Wyoming’s Department of Transportation Road Design Manual (State of Wyoming 2013b) and Standard Plans (State of Wyoming 2013c).

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 (State of Colorado 2013a, b). Design standards, specifications and guidelines are defined in Colorado Department of Transportation’s M&S Standard Plans (State of Colorado 2012) and the 1998 State Highway Access Code (State of Colorado 1998).

Utah

UDOT receives administrative and operations and maintenance powers through Title 72 of the State of Utah code (State of Utah 2006). 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 State Department of Transportation, counties and cities have encroachment permitting requirements for utility construction and operation activities.

3.2.12.2 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 3-192. 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 3-192 TRANSPORTATION AND ACCESS RESOURCES ISSUES			
Issue Raised	Concern	General Location/Description	Relevant Alternative
Airports and landing strips	Towers could interfere with airport and landing strip operations	Throughout the study corridors, mainly near cities and towns	All alternative routes and route variations
County roads	If a small county road is crossed, it should be 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	All alternative routes and route variations

TABLE 3-192 TRANSPORTATION AND ACCESS RESOURCES ISSUES			
Issue Raised	Concern	General Location/Description	Relevant Alternative
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	All alternative routes and route variations

3.2.12.3 Regional Setting

Wyoming

Interstates, U.S. highways, and state highways within Wyoming support high travel speeds and traffic volume and occur within 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 within vicinity of municipalities and support interstate and regional flight. Private airstrips generally occur within areas of rangeland operations to support those operations.

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 within areas of agricultural and rangeland operations to support those operations.

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.

3.2.12.4 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 has 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 2.5.1.2, 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 3.2.12.5.

Traffic volume anticipated during the construction of the Project also is discussed qualitatively in the results section (3.2.12.5.2). 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.

3.2.12.4.1 Inventory

The transportation and access resources (roadways, aviation facilities, and railroads) crossed by the transmission line alternative routes and route variations were identified using primary and secondary data sources, and aerial photography interpretation, and during field reconnaissance in 2009 and 2011.

Roadways

An inventory of roadways crossed by the reference centerline was conducted utilizing 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 within the ESRI data. Summaries of the road types are provided in Tables 3-197 through 3-199. Discussions of the major roads, likely to be affected during construction, are discussed by alternative route and route variation in the affected environment portions of Section 3.2.12.

Railroads

An inventory of railroads crossed by the reference centerlines for the alternative routes and route variations were identified using the Federal Railroad Authority database (Federal Railroad Authority 2008). 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 are provided in 3-197 through 3-199.

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 or route variations. Refer to the Aviation Facility portion of Section 2.2.12.1.1 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 3-193 lists the airports and airstrips within the 2-mile-wide alternative route study corridor by state.

TABLE 3-193 AVIATION FACILITIES BY STATE		
Facility Name	Description	Alternative
Wyoming		
Ellis Ranch	Private airstrip	All WYCO alternative routes and route variations
Colorado		
Baxter Pass	Private heliport	All COUT BAX alternative routes
Craig-Moffat	Municipal airport	WYCO-D, WYCO-D-1
Mesa View Ranch	Private airstrip	WYCO-D, WYCO-D-1
Rangely	Municipal airport	All COUT BAX alternative routes
Utah		
Bonanza Power Plant	Private heliport	COUT-C and route variations, COUT-H, COUT-I
Duchesne Municipal	Municipal airport	COUT-A, COUT-A-1
Green River Municipal	Municipal airport	All COUT BAX alternative routes
Mount Pleasant Municipal	Municipal airport	COUT BAX-B, COUT BAX-C, COUT-I
Nephi Municipal Airport	Municipal airport	All COUT BAX and COUT alternative routes and route variations
Rogers Roost	Private airstrip	All COUT BAX alternative routes
Roosevelt Municipal Airport	Municipal airport	COUT-A and COUT-B alternative routes and route variations
Westwater	Private airstrip	All COUT BAX alternative routes

3.2.12.4.2 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, 2.6.3, 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 within 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 to 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 that 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 3-194). 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 3-194 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON TRANSPORTATION AND ACCESS	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ■ 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 facility to continue to operate (i.e., crossing height restriction areas for aviation facilities with towers taller than the conical zone allows)
Moderate	<ul style="list-style-type: none"> ■ 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 would cross a road) ■ Areas where the transmission lines would require expansion of the existing right-of-way in existing roadway, aviation or railway facility areas
Low	<ul style="list-style-type: none"> ■ 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 3-196) using the criteria presented in Table 3-194.

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 3-195.

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
13	Overland access	Applied to minimize the amount of constructed access
15	Limit accessibility in sensitive habitats	Applied to discourage public accessibility via new or improved access routes in sensitive areas

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 3-196. 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 3-194. A summary of anticipated initial and residual impacts on transportation and access, as well as selective mitigation measures applied, are presented in Table 3-196. Residual impacts are discussed in Section 3.2.12.5.

Resource	Initial Impacts	Selective Mitigation Measures Applied	Residual Impacts
Interstates	Low to Moderate	9	Low to Moderate
U.S. and state highways	Low to Moderate	5, 9	Low to Moderate
Other roads	Low to Moderate	5, 9, 13, 15	Low to Moderate
Railroads	Low to Moderate	9	Low to Moderate
Aviation facilities	Moderate to High	6, 7	Low

3.2.12.5 Results

3.2.12.5.1 No Action Alternative

If the Project is not built, then transportation and access will remain as it currently exists.

3.2.12.5.2 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 3.2.20.5.1, 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 daytrips (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 within the Wyoming and Colorado, it is not anticipated that the additional daytrips 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 daytrips (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 timeframe. However, because of the extensive existing road network within the vicinity of the Project alternative routes and route variations, it would not be anticipated that the additional daytrips/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 daytrips (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 within 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 and route variations, it would not be anticipated that the additional daytrips/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 that the multi-purpose construction yards would be located near existing roadways that can support oversized loads. It is also anticipated that 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 in 2019 through the summer of 2020 (refer to Section 3.2.20.5.1 of Social and Economic Conditions). However, it is anticipated that 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 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 that 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 or route variations 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 3.2.12.1.1. 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*, were requested). If the tower were determined a hazard, steps would be taken to mitigate the hazard until it were determined there was no hazard. The FAA would also outline any conditions (i.e., marking, lighting, etc.) required of the Applicant during construction in the determination letter.

3.2.12.5.3 345-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.

3.2.12.5.4 500-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 and route variations that could be accessed using existing and new access is presented in this section.

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

The baseline resource inventory on WYCO alternative routes and route variations are presented in Table 3-197.

TABLE 3-197 ALTERNATIVE ROUTE COMPARISON FOR TRANSPORTATION AND ACCESS INVENTORY DATA FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO)								
Alternative Route	Total Miles	Number of Roadway Crossings (Estimated) ¹				Number of Railroad Crossings (Estimated)	Alternative Route to be Accessed from Existing Versus New Access Roads ³ (miles)	
		Interstates	U.S. Highways	State Highways	Other Roads ²		Existing Access	New Access
		Alternative WYCO-B and Route Variations						
WYCO-B (Applicant Preferred Alternative)	204.5	1	3	2	191	5	106.0	98.5
Wyoming	138.1	1	2	2	139	5	77.2	60.9
Colorado	66.4	0	1	0	52	0	28.8	37.6

TABLE 3-197 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)	Alternative Route to be Accessed from Existing Versus New Access Roads ³ (miles)	
		Interstates	U.S. Highways	State Highways	Other Roads ²		Existing Access	New Access
WYCO-B-1	204.9	1	3	2	189	5	105.1	99.8
Wyoming	138.1	1	2	2	139	5	77.2	60.9
Colorado	66.8	0	1	0	50	0	27.9	38.9
WYCO-B-2 (Agency Preferred Alternative)	204.5	1	3	2	193	5	108.5	96.0
Wyoming	138.1	1	2	2	139	5	77.2	60.9
Colorado	66.4	0	1	0	54	0	31.3	35.1
WYCO-B-3	204.5	1	3	2	191	5	107.8	96.7
Wyoming	138.1	1	2	2	139	5	77.2	60.9
Colorado	66.4	0	1	0	52	0	30.6	35.8
Alternative WYCO-C and Route Variations								
WYCO-C	210.4	1	3	2	191	5	122.1	88.3
Wyoming	144.0	1	2	2	139	5	93.3	50.7
Colorado	66.4	0	1	0	52	0	28.8	37.6
WYCO-C-1	210.8	1	3	2	189	5	121.2	89.6
Wyoming	144.0	1	2	2	139	5	93.3	50.7
Colorado	66.8	0	1	0	50	0	27.9	38.9
WYCO-C-2	210.4	1	3	2	193	5	124.6	85.8
Wyoming	144.0	1	2	2	139	5	93.3	50.7
Colorado	66.4	0	1	0	54	0	31.3	35.1
WYCO-C-3	210.4	1	3	2	191	5	123.9	86.5
Wyoming	144.0	1	2	2	139	5	93.3	50.7
Colorado	66.4	0	1	0	52	0	30.6	35.8
Alternative WYCO-D and Route Variation								
WYCO-D	250.0	1	5	9	225	9	165.7	84.3
Wyoming	135.0	1	4	7	123	6	103.7	31.3
Colorado	115.0	0	1	2	102	3	62	53
WYCO-D-1	250.0	1	5	9	225	9	167.5	82.5
Wyoming	135.0	1	4	7	123	6	103.7	31.3
Colorado	115.0	0	1	2	102	3	63.8	51.2
Alternative WYCO-F and Route Variations								
WYCO-F	218.9	1	3	1	201	5	116.6	102.3
Wyoming	152.5	1	2	2	149	5	87.8	64.7
Colorado	66.4	0	1	0	52	0	28.8	37.6
WYCO-F-1	219.3	1	3	2	199	5	115.7	103.6
Wyoming	152.5	1	2	2	149	5	87.8	64.7
Colorado	66.8	0	1	0	50	0	27.9	38.9

TABLE 3-197 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)	Alternative Route to be Accessed from Existing Versus New Access Roads ³ (miles)	
		Interstates	U.S. Highways	State Highways	Other Roads ²		Existing Access	New Access
WYCO-F-2	218.9	1	3	2	203	5	119.1	99.8
Wyoming	152.5	1	2	2	149	5	87.8	64.7
Colorado	66.4	0	1	0	54	0	31.3	35.1
WYCO-F-3	218.9	1	3	2	201	5	118.4	100.5
Wyoming	152.5	1	2	2	149	5	87.8	64.7
Colorado	66.4	0	1	0	52	0	30.6	35.8

NOTES:
¹Roadway crossings were identified using ESRI Road Layer data.
²Other roadways include roads identified using the ESRI Road Layer other than interstates, U.S. highways, and state highways.
³Based on results of the access modeling incorporated into the disturbance model (refer to Section 2.5.1.2); 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.

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Roadways

Alternative WYCO-B and route variations in Wyoming cross I-80 east of Walcott Junction and then parallel 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 and route variations also cross and/or parallel 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 and route variations cross four railroad lines in the area west/southwest of Hanna and Walcott Junctions, Wyoming.

Environmental Consequences (Wyoming)

Roadways

Moderate residual impacts would be anticipated on roadways crossed by Alternative WYCO-B and route variations 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 residual impacts would be anticipated on all railroads crossed by Alternative WYCO-B and route variations 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 and Route Variations WYCO-B-1 and WYCO-B-3 in Colorado cross U.S. Highway 40 southwest of Maybell, Colorado (Link C92) and Colorado State Highway 318 northwest of Maybell, Colorado (Link C91).

Route Variation WYCO-B-2 is similar to WYCO-B except it closely parallels U.S. Highway 40, crosses the highway farther southwest of Maybell, Colorado, and crosses Deerlodge Road (Link C93).

Railroads

Alternative WYCO-B and route variations in Colorado do not cross any railroads.

Environmental Consequences (Colorado)

Roadways

Moderate residual impacts would be anticipated on roadways crossed by Alternative WYCO-B and route variations 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 and route variations in Colorado.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Roadways

Roadways crossed and/or paralleled by Alternative WYCO-C and route variations in Wyoming are similar to those discussed for Alternative WYCO-B except that Standard/Hangout Road is not crossed.

Railroads

Alternative WYCO-C and route variations in Wyoming cross the same railroads as Alternative WYCO-B and route variations.

Environmental Consequences (Wyoming)

Roadways

Impacts on roadways for Alternative WYCO-C and route variations in Wyoming would be the same as Alternative WYCO-B and route variations.

Railroads

Impacts on railroads for Alternative WYCO-C and route variations in Wyoming would be the same as Alternative WYCO-B and route variations.

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative WYCO-C and route variations in Colorado would be the same as Alternative WYCO-B and route variations.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Roadways

Roadways crossed or paralleled by Alternative WYCO-D and Route Variation WYCO-D-1 in Wyoming are similar to those discussed for Alternative WYCO-B except that Alternative WYCO-D and Route Variation WYCO-D-1 generally parallel Wyoming Highway 789, crossing it five times (Links W32, W110, W111, and W299), and does cross Standard/Hangout Road.

Railroads

Alternative WYCO-D and Route Variation WYCO-D-1 in Wyoming cross five railroad lines in the area west/southwest of Hanna and Walcott Junctions, Wyoming.

Environmental Consequences (Wyoming)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative WYCO-D and route variation 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 residual impacts are anticipated on all railroads crossed by Alternative WYCO-D and route variation 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 and route variation in Colorado cross U.S. Highway 40 (Link C100), cross (two times) and parallel Colorado State Highway 13 (Links C20, C13, C100, and C105), and cross Colorado State Highway 394. The alternative and route variation also cross and/or parallel 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 and route variation in Colorado cross three railroad lines in the area around Craig, Colorado.

Environmental Consequences (Colorado)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative WYCO-D and route variations 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 residual impacts are anticipated on all railroads crossed by Alternative WYCO-D and route variations 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 and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Roadways

Roadways crossed and/or paralleled by Alternative WYCO-F and route variations in Wyoming are similar to those discussed for Alternative WYCO-B with the exception of crossing Sand Creek Road (Link W120) and does not cross Standard/Hangout Road.

Railroads

Alternative WYCO-F and route variations in Wyoming cross the same railroads as Alternative WYCO-B and route variations.

Environmental Consequences (Wyoming)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative WYCO-F and route variations 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 and route variations in Wyoming are the same as Alternative WYCO-B and route variations.

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative WYCO-F and route variations in Colorado are the same as Alternative WYCO-B and route variations.

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

The baseline resource inventory on COUT BAX alternative routes are presented in Table 3-198. The table identifies the type of roadway crossed by the Project alternative routes and route variations, the number of railroad crossings, and the amount of the reference centerline that would be accessed using existing access and new access.

TABLE 3-198 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)	Alternative Route to be Accessed from Existing Versus New Access Roads ³ (miles)	
		Interstates	U.S. Highways	State Highways	Other Roads ²		Existing Access	New Access
COUT BAX-B	279.2	3	1	7	186	8	158.5	120.7
<i>Colorado</i>	86.7	0	0	2	66	1	69.9	16.8
<i>Utah</i>	192.5	3	1	5	120	7	88.6	103.9
COUT BAX-C	289.7	3	3	7	189	11	171.6	118.1
<i>Colorado</i>	86.7	0	0	2	66	1	69.9	16.8
<i>Utah</i>	203.0	3	3	5	123	10	101.7	101.3
COUT BAX-E	291.5	3	3	12	192	17	180.1	111.4
<i>Colorado</i>	86.7	0	0	2	66	1	69.9	16.8
<i>Utah</i>	204.8	3	3	10	126	16	110.2	94.6

NOTES:
¹Roadway crossings were identified using ESRI Road Layer data.
²Other roadways include roads identified using the ESRI Road Layer other than interstates, U.S. highways, and state highways.
³Based on results of the access modeling incorporated into the disturbance model (refer to Section 2.5.1.2); 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.

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 residual 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 residual 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 (5 times) a railroad in the area of Thompson Springs, Utah (Links U486 and U487) and also crosses a railroad near Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate residual 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 residual 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 (9 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 on COUT alternative routes are presented in Table 3-199. The table identifies the type of roadway crossed by the Project alternative routes and variations, the number of railroad crossings, and the amount of the reference centerline that would be accessed using existing access and new access.

TABLE 3-199 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)	Alternative Route to be Accessed from Existing Versus New Access Roads ³ (miles)	
		Interstates	U.S. Highways	State Highways	Other Roads ²		Existing Access	New Access
Alternative COUT-A and Route Variation								
COUT-A	206.0	1	4	12	183	3	101.6	104.4
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	182.0	1	4	11	166	3	93.8	88.2
COUT-A-1	205.6	1	4	12	181	3	98.9	106.7
Colorado	181.6	0	0	1	17	0	7.8	16.2
Utah	24.0	1	4	11	164	3	91.1	90.5
Alternative COUT-B and Route Variations								
COUT-B	216.0	1	7	10	198	7	116.2	99.8
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	192.0	1	7	9	181	7	108.4	83.6
COUT-B-1	212.7	1	9	9	197	7	116.2	96.5
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	188.7	1	9	8	180	7	108.4	80.3
COUT-B-2	214.2	1	7	9	188	7	118.2	96
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	190.2	1	7	8	171	7	110.4	79.8
COUT-B-3	213.9	1	7	9	182	7	115.9	98
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	189.9	1	7	8	165	7	108.1	81.8
COUT-B-4	214.2	1	7	9	186	7	117.9	96.3
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	190.2	1	7	8	169	7	110.1	80.1
COUT-B-5	213.9	1	7	9	184	7	116.2	97.7
Colorado	24.0	0	0	1	17	0	7.8	16.2
Utah	189.9	1	7	8	167	7	108.4	81.5

TABLE 3-199 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)	Alternative Route to be Accessed from Existing Versus New Access Roads ³ (miles)	
		Interstates	U.S. Highways	State Highways	Other Roads ²		Existing Access	New Access
Alternative COUT-C and Route Variations								
COUT-C	209.8	1	5	7	126	8	118.0	91.8
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	185.0	1	5	6	109	8	108.4	76.6
COUT-C-1	206.4	1	7	6	138	8	120.5	85.9
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	181.6	1	7	5	120	8	110.9	70.7
COUT-C-2	207.9	1	5	6	129	8	122.5	85.4
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	183.1	1	5	5	111	8	112.9	70.2
COUT-C-3 (Agency Preferred Alternative)	207.6	1	5	6	125	8	120.5	87.1
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	182.8	1	5	5	107	8	110.9	71.9
COUT-C-4	207.9	1	5	6	109	8	117.4	90.5
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	183.1	1	5	5	91	8	107.8	75.3
COUT-C-5	207.6	1	5	6	105	8	115.4	92.2
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	182.8	1	5	5	87	8	105.8	77
Alternatives COUT-H and COUT-I								
COUT-H (Applicant Preferred Alternative)	200.6	1	2	10	173	8	121.3	79.3
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	175.8	1	2	9	155	8	111.7	64.1
COUT-I	240.2	1	2	9	180	4	138.7	101.5
<i>Colorado</i>	24.8	0	0	1	18	0	9.6	15.2
<i>Utah</i>	215.4	1	2	8	162	4	129.1	86.3
NOTES:								
¹ Roadway crossings were identified using ESRI Road Layer data.								
² Other roadways include roads identified using the ESRI Road Layer other than interstates, U.S. highways, and state highways.								
³ Based on results of the access modeling incorporated into the disturbance model (refer to Section 2.5.1.2); 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.								

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment (Colorado)

Roadways

Alternative COUT-A and route variation in Colorado cross 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.

Environmental Consequences (Colorado)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative COUT-A and route variation 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 and route variation in Colorado.

Affected Environment (Utah)

Roadways

Alternative COUT-A and route variation in Utah cross I-15 north of Nephi, Utah and then parallel 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 and route variation. Alternative COUT-A and route variation also cross and/or parallel various secondary roads such as Sheep Creek Road (Link U433).

Railroads

Alternative COUT-A and route variation in Utah crosses railroads in Spanish Fork Canyon (Link U433) and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative COUT-A and route variation 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 residual impacts are anticipated on all railroads crossed by Alternative COUT-A and route variation 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 and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-B and route variations in Colorado are the same as Alternative COUT-A and route variation.

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 and route variations cross U.S. Highway 191 (Links U524, U513 [variation] and U514 [variation]) and cross U.S. Highway 6 two more times than COUT-A. Additionally, Reservation Ridge Road is paralleled and crossed by Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 (Links U513 and U515).

Railroads

Railroads crossed and/or paralleled by Alternative COUT-B and route variations are similar to those discussed for Alternative COUT-A with the exception that there are additional crossings of the railroad in Spanish Fork Canyon by the route variations (Links U527, U530, U539, and U560).

Environmental Consequences (Utah)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative COUT-B and route variations 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 residual impacts are anticipated on all railroads crossed by Alternative COUT-B and route variations 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 and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative]), COUT-C-4, and COUT-C-5

Affected Environment and Environmental Consequences (Colorado)

The affected environment and environmental consequences for Alternative COUT-C and route variations in Colorado are the same as Alternative COUT-A and route variation.

Affected Environment (Utah)

Roadways

Alternative COUT-C and route variations in Utah cross I-15 north of Nephi, Utah and then parallel the interstate for a short distance (Link U650). U.S. Highway 191 is crossed north of Helper, Utah (Links U524, U514 [variation], and U513 [variation]), U.S. Highway 6 is crossed near Soldier Summit, Utah and Spanish Fork Canyon (Links U527, U530, U539, and U560 [variations]), 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 and route variations also cross and/or parallel various secondary roads such as Reservation Ridge Road (Links U513 [variations] and U515 [variations]) and Sheep Creek Road (Link U433).

Railroads

Alternative COUT-C and route variations in Utah crosses railroads northeast of Bonanza, Utah (Link U242), near Soldier Summit, Utah and Spanish Fork Canyon (Links U527, U530, U560 [variations], and U539), and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate residual impacts are anticipated on roadways crossed by Alternative COUT-C and route variations 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 residual impacts are anticipated on all railroads crossed by Alternative COUT-C and route variations 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-H (Applicant Preferred Alternative)

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 and route variations.

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 would also cross and/or parallel various secondary roads such as Argyle Canyon Road (Links U404 and U407).

Railroads

Alternative COUT-H 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 residual 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 residual 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.

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 and route variation.

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 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-H in Utah crosses railroads northeast of Bonanza, Utah (Link U242), southwest of Wellington, Utah (Link U494), and north of Nephi, Utah (Link U650).

Environmental Consequences (Utah)

Roadways

Moderate residual 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 residual 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.

3.2.12.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

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 Applicant 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, Colorado State Highway 318, Moffat County Road 10, and other roads that provide access into the siting area.

Environmental Consequences

Impacts on U.S. Highway 40 and Colorado State Highway 318 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 and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

Siting Area D – Bell Rock

Affected Environment

Siting Area D – Bell Rock contains U.S. Highway 40, Moffat County Road 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 and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

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. Within 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 that 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 would potentially 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 3.2.12.15.

Alternative COUT-A and Route Variation (COUT-A-1)

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 Applicant standards and there may be cases where new access roads need to be constructed.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment

Transportation and access resources for Siting Area F are the same as described for Alternative COUT-A and route variation.

Environmental Consequences

Impacts on transportation and access for Siting Area F are the same as described for Alternative COUT-A and route variation.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

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 Applicant standards and there may be cases where new access roads need to be constructed.

Alternatives COUT-H (Applicant Preferred Alternative) 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 and route variations.

Environmental Consequences

Impacts on transportation and access for Siting Area E are the same as described for Alternative COUT-C and route variations.

3.2.13 Special Designations and Other Management Areas

3.2.13.1 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 can be either administratively or congressionally designated. Congressionally designated areas include WSR, national monuments, and NCAs. 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 Wyoming wildlife habitat management areas (WHMA), Colorado state wildlife areas (SWA), and Utah WMA. 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.

Wilderness Areas, WSAs, and non-WSA lands with wilderness characteristics are described in Section 3.2.14 and IRAs and Unroaded and Undeveloped Areas are described in Section 3.2.15.

3.2.13.1.1 Regulatory Framework

The management plans (and plan amendments) relevant to the Project area are discussed in Section 1.7.3. State plans and 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 within alternative route study corridors are located in Section 3.2.13.4 under each special designation and other management area heading and description.

Bureau of Land Management

- **National Landscape Conservation System, H.R. 146 (111th): Omnibus Public Land Management Act of 2009, Title II, Sec. 2002.** This law established the National Landscape Conservation System, which was created by the BLM 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” (BLM 2009e). The National Landscape Conservation System 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 (BLM 2009e).

- **BLM Manual 6100 – National Landscape Conservation System Management Manual (Public).** This manual provides the general policy for BLM personnel on how to manage public lands in the National Landscape Conservation System (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 within 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 within a NLCS unit (BLM 2012c). Types of NLCS units inventoried for the Project include wilderness areas, wilderness study areas, a national monument, a national conservation area, and national scenic and historic trails.
- **BLM Manual 6220 – National Monuments, National Conservation Areas, and Similar Designations (Public).** This manual provides the general policy on how BLM personnel should manage the specific components of the National Landscape Conservation System (NLCS), specifically NCAs, national monuments and other similar designations (BLM 2012d). In general, the BLM’s objectives are the same as the objectives described above for BLM Manual 6100. The Dinosaur National Monument and McInnis Canyons NCA are the only national monuments or NCAs occurring within the Project alternative route study corridors.
- **BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management (Public).** This manual 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 2012e). An alternative route considered for the Project crosses the Lower Green River suitable WSR.

National Park Service

- **Land and Water Conservation Fund Sites, Land and Water Conservation Fund Annual Report (2011).** This report 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 (2010).** This guide provides information regarding what each WHMA was designated for and the allowable activities and developed facilities at each of these areas. The regulations within 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 (2011 to 2012).** This guide by CPW 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 (2002).** This guide by the UDWR provides details on the WMAs throughout Utah, including descriptions of the WMAs, available activities, rules for use, and maps of the sites.

3.2.13.2 Issues Identified for Analysis

During scoping, potential issues were identified by both the public and the agencies in relation to special designations. Table 3-200 outlines the issues raised, provides context, and identifies the relevant alternative routes. In addition to issues raised by the public and agencies during the scoping, other issues that were identified during the data inventory are identified below.

TABLE 3-200 SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREA ISSUES IDENTIFIED FOR ANALYSIS			
Issue	Concern	Relevant Document Section	Relevant Alternative Routes and Route Variations
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 3.2.13.4.1; subheading Areas of Critical Environmental Concern	COU BAX-B; COU C and route variations; COU H, COU I
Potential conflicts with Land and Water Conservation Fund Sites	Avoidance areas for rights-of-way	Refer to Section 3.2.13.4.1, subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	All WYCO alternative routes and route variations
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 3.2.13.4.1; subheading Conservation Easements, Preservation Areas, and Land and Water Conservation Sites	All WYCO alternative routes and route variations; COU BAX-B, COU BAX-C; COU I

TABLE 3-200 SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREA ISSUES IDENTIFIED FOR ANALYSIS			
Issue	Concern	Relevant Document Section	Relevant Alternative Routes and Route Variations
Potential conflicts with right-of-way exclusion and avoidance areas	Compliance with management prescriptions in relevant BLM management plans	Refer to Section 3.2.13.4.1; information for the different special designations and other management areas provided in subsections for each special designation	WYCO-D, WYCO-D-1; COUT BAX-B
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 3.2.13.4.1, subheading Wild Horse Herd Management Area	All WYCO alternative routes and route variations; all COUT BAX alternative routes
Wyoming			
Potential conflicts with crossing the Red Rim/Daley and other Wildlife Habitat Management Areas (WHMAs)	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 3.2.13.4.1; subheading Wyoming WHMAs, Colorado State Wildlife Areas (SWA), and Utah Wildlife Management Areas (WMA)	All WYCO alternative routes and route variations
Colorado			
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 3.2.13.4.1; subheading Wyoming WHMAs, Colorado SWAs, and Utah WMAs	WYCO-D, WYCO-D-1
Potential conflicts with a national monument	Avoid impacting a national monument.	Refer to Section 3.2.13.4.1; subheading National Monuments	WYCO-B-2, WYCO-B-3, WYCO-C-2, WYCO-C-3, WYCO-D-1, WYCO-F-2, WYCO-F-3
Utah			
Potential conflicts with Utah Reclamation Mitigation and Conservation Commission lands near Strawberry Reservoir in Wasatch County	Crosses lands managed for resource preservation protected by statute as mitigation for the Central Utah Project	Refer to Section 3.2.13.4; subheading Utah Reclamation Mitigation and Conservation Commission	COUT-A, COUT-A-1

TABLE 3-200 SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREA ISSUES IDENTIFIED FOR ANALYSIS			
Issue	Concern	Relevant Document Section	Relevant Alternative Routes and Route Variations
Potential conflict with the Allan Smith-Deep Creek Investment Conservation Easement and Grassland Reserve Program area	Precludes or restricts future right-of-ways from crossing lands	Refer to Section 3.2.13.4.1; Wyoming WHMAs, Colorado SWAs, and Utah WMAs	COUT-A, COUT-A-1
Potential conflict with Ioka Nature Conservancy Preservation property	Crossing property would require mitigation of flowers penstemon	Refer to Section 3.2.13.4.1; Wyoming WHMAs, Colorado SWAs, and Utah WMAs	All COUT-A and COUT-B alternative routes and route variations
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 3.2.13.4.1; Wyoming WHMAs, Colorado SWAs, and Utah WMAs	All COUT BAX and COUT alternative routes and route variations
Potential impacts on recreational and land use values of rivers designated as suitable or eligible in the Wild and Scenic Rivers (WSR)	Compliance with management prescriptions in relevant BLM management plans (i.e., avoidance or exclusion areas for utility rights-of-way; e.g., Lower Green River suitable WSRs	Refer to Section 3.2.13.4.1; WSRs	COUT-C and route variations; COUT-H, COUT-I

3.2.13.3 Regional Setting

There are several different special designations and other management areas that occur within the alternative route study corridor. This includes (by state), one WHHMA, one LWCF site and two WHMAs in Wyoming; five ACECs, a NCA, a national monument, two SWAs, one WHHMA, four LWCF sites and one conservation easement in Colorado; six ACECs, one research natural area (RNA), one WHHMA, one suitable WSR segment, four conservation sites, two Nature Conservancy properties, one LWCF site 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.

3.2.13.4 Study Methodology

3.2.13.4.1 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 within 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-17 includes information on the special designation and other management areas identified within the alternative route study corridors. The biological resources sections (Sections 3.2.5 through 3.2.9) and the visual resource and cultural resource sections (Sections 3.2.16 and 3.2.18, respectively) also discuss special designation and other management areas. This section identifies special designations within 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” (BLM 2001b).

Table 3-201 lists the ACECs within the alternative route study corridors and the relevant and important values and management prescriptions for each area.

TABLE 3-201 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) within 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 alternative routes
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 alternative routes
Raven Ridge	Candidate threatened and endangered plants, sensitive plants, and remnant vegetation associations	Exclusion area for land use authorizations including rights-of-way	COUT-C and route variations; COUT-H, COUT-I

TABLE 3-201 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
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-C and route variations; 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 alternative routes
Utah			
Bureau of Land Management Price Field Office			
Big Hole (part of the Rock Art ACEC)	Big Hole rock art site	Exclusion area for future rights-of-way	COUT BAX-B
Cottonwood Canyon (part of the Rock Art ACEC)	Cottonwood Canyon 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
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 and route variations; 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 and route variations; 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 and route variations; COUT-H, COUT-I

Research Natural Area

RNAs are designated to preserve significant natural ecosystems and their inherit 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 and Route Variations COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5 but is not crossed by these alternative routes and route variations. 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 2012f). WHHMAs are locations where populations of

wild horses are being managed for appropriate herd numbers. There are three WHHMAs occurring within the alternative route study corridors. Information including the location of WHHMAs is presented in Table 3-202.

TABLE 3-202 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 and Route Variations
Wyoming			
Bureau of Land Management Rawlins Field Office			
Adobe Town	Appropriate management level for unit is 700 adults before foaling and 812 after foaling	No restrictions on rights-of-way	All WYCO alternative routes and route variations
Colorado			
Bureau of Land Management White River Field Office			
Piceance/East Douglas	Appropriate management level for the unit is between 135 and 235 horses	No restrictions on rights-of-way	All COUT BAX alternative routes
Utah			
Bureau of Land Management Vernal Field Office			
Hill Creek	Field office is working to remove all wild horses from this unit	No restrictions for rights-of-way	COUT-C and route variations; COUT-H, COUT-I

Wild and Scenic Rivers

In 1968, Congress established a national policy to protect undeveloped rivers and streams, through the Wild and Scenic Rivers Act (P.L. 90-542) and the creation of the National WSRs System. To be included 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 further categorized either as wild, scenic, or recreational rivers, based on their naturalness and accessibility for recreational uses (BLM 2011j). Table 3-203 lists the suitable and eligible WSRs within alternative route study corridors.

TABLE 3-203 WILD AND SCENIC RIVERS BY STATE			
Name and Classification	Location and Outstandingly Remarkable Values and Classification	Bureau of Land Management Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes and Route Variations
Wyoming			
There are no Wild and Scenic River (WSR) segments within the alternative route study corridors in Wyoming.			
Colorado			
There are no WSR segments within 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	For river segments found suitable and recommended for designation, each will be managed in accordance with the WSR Act, to prevent impairment of	COUT-C and route variations, COUT-H, COUT-I

TABLE 3-203 WILD AND SCENIC RIVERS BY STATE			
Name and Classification	Location and Outstandingly Remarkable Values and Classification	Bureau of Land Management Management Prescriptions Relevant to Utility Rights-of-Way	Relevant Alternative Routes and Route Variations
	line with an additional 80 miles south of this point; outstandingly remarkable values are recreation and fish with a tentative scenic classification	remarkable values within the line of sight 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 3.2.16 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	

Conservation Easements, Preservation Areas, and Land and Water Conservation Fund Sites

Within 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 has also 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 2012b).

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 United States. 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” (NPS 2012b). 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 3-204, provides information of the conservation easements, NRCS grassland reserve program areas, LWCF sites, and nature conservancy properties within the alternative route study corridors, the managing agency, the management prescriptions for each, and the relevant alternative route.

TABLE 3-204 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 and Route Variations
Wyoming			
Hanna Energy Park/Municipal Park	Land and Water Conservation Fund Site, 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 utilized	WYCO-D, WYCO-D-1
Colorado			
Moffat County Road #11	LWCF, Moffat County	Received federal monies between 1967 and 1968 for acquisition of land; no development within road easement unless all other alternative routes have been found unfeasible, then a conversion process could be utilized	WYCO-D

TABLE 3-204 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 and Route Variations
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 alternative routes and route variations
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 is allowed within recreation area unless all other alternative routes considered are determined to unfeasible (then a conversion process could be used)	All COUT BAX alternative routes
Yampa River Park	LWCF site, Moffat County	Access point to the Yampa River located within 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, WYCO-D-1

TABLE 3-204 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 and Route Variations
Yampa River Recreation Area	LWCF site, Moffat County	The recreation area is portions of the Yampa River that are 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 within the recreation area unless all other alternative routes considered are determined to be unfeasible (then a conversion process could be used)	All WYCO alternative routes and route variations
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, COUT-A-1
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, 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 need required	All COUT-A and COUT-B alternative routes and route variations
Lasson Family	Conservation Easement; UDWR	Purchased to protect big game winter range adjacent to the Spencer Fork Unit wildlife management area	All COUT-A, COUT-B, and COUT-C alternative routes and route variations

TABLE 3-204 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 and Route Variations
Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site)	LWCF site; City of Nephi	Golf course for recreational use; 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)	All COUT BAX and COUT alternative routes and route variations
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
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	All COUT-B and COUT-C alternative routes and route variations

Utah Reclamation Mitigation and Conservation Commission Properties

The URMCC is an Executive Branch of the federal government, authorized under the CUP Completion Act of 1992 (P.L. 102-575). 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. 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 and Route Variation COUT-A-1 in Utah.

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 WGFD Commission, which under Title 23 directs the 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 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 2012). 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 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 U.S. Fish and Wildlife Service – 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 Utah Administrative Code R657-28, 'Use of Division Lands,' also would continue to apply.

Table 3-205 provides information on the Wyoming WHMAs, Colorado SWAs, and Utah WMAs within the alternative route study corridors.

Congressionally Designated Areas

National Conservation Areas

NCA's are designated by Congress to "... conserve, protect, enhance, and manage public lands for the enjoyment of present and future generations. NCA's offer visitors landscapes with exceptional natural, recreational, cultural, wildlife, aquatic, archaeological, paleontological, historical, educational or scientific resources" (BLM 2010d).

Within 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.

TABLE 3-205 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 and Route Variations
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, this WHMA is 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, WYCO-D-1
Red Rim-Daley WHMA (11,100)	Crucial winter habitat for pronghorn and nesting habitat for raptors	Ground-disturbing and disruptive activities are 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 alternative routes and route variations
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	Activities that conflict with the primary mission of this area (providing wildlife recreation opportunities) are strongly discouraged.	WYCO-D, WYCO-D-1
Yampa River SWA (850)	Provides opportunities for hunting mule deer, elk, and waterfowl, fishing, hiking, and wildlife viewing	Management prescription is the same as the Bitterbrush SWA	WYCO-D, WYCO-D-1
Utah – Wildlife Management Areas			
Utah Division of Wildlife Resources¹			
Birdseye/Lake Fork Wildlife Management Area (WMA) (3,750)	Big game winter range and to protect federally listed threatened Desert milkvetch population	This area was 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, and COUT-C and route variations
Burraston Ponds WMA (180)	Donated for use as a fish production area, provides unique fish and wildlife values, and is available for upland game hunting (pheasants and doves)	This area was 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 alternative routes and route variations

TABLE 3-205 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 and Route Variations
Cottonwood Canyon WMA (6,700)	Part of the Indian Canyon WMA; made up of three sub-units; units were acquired for big game winter range and to increase public access within an area of predominately private land	This area was 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 and route variations
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; the property also has angler access and aquatic/terrestrial habitat protections	Would 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, COUT-A-1
Dairy Fork WMA (4,900)	Part of the Northwest Manti WMA; acquired to preserve and enhance deer and elk winter range	This area was 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, and COUT-C and route variations
Fountain Green WMA (360)	Part of the North Nebo WMA; the Fountain Green Farm is 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.	This area was 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 alternative routes; COUT-H, COUT-I
Gordon Creek WMA (22,600)	Includes UDWR, BLM, Utah State Institutional Trust Lands and private property; managed to protect critical big game winter range	This area was acquired using federal funds creating an agreement between FWS and UDWR. Portions of Gordon Creek were 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	This area was 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 alternative routes and route variations
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	This area was 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-A-1

TABLE 3-205 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 and Route Variations
Salt Creek WMA (5,254)	Important nesting, resting, and feeding habitat for waterfowl	This area was 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 alternative routes and route variations
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	This area was 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-A and COUT-B alternative routes and route variations
Starvation WMA (5,700)	Part of Northwest Manti WMA; acquired to protect and enhance deer and elk winter range	This area was 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 and COUT-C and route variations
Strawberry River WMA (3,070)	Acquired as mitigation for CUP with the help of the Nature Conservancy; The middle portion of the Strawberry River within the Strawberry River WMA is a Blue Ribbon trout stream that is within an area that is primitive in nature with just a trail that allows fisherman to reach the river by foot; this is area is only open for day use	This WMA prohibits construction of new roads and all vehicle use is limited 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. This WMA is 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 would cross this WMA.	COUT-A, COUT-A-1
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 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 would cross the WMA.	COUT-A, COUT-A-1

TABLE 3-205 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 and Route Variations
Triangle Ranch WMA (2,880)	Part of the South Nebo WMA and includes Salt Creek WMA parcels; managed to protect big game winter range	This area was 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 alternative routes and route variations
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 U.S. Fish and Wildlife Service – Wildlife and Sport Fish Restoration Division (Mountain-Prairie Region) amends their existing grant agreements with UDWR.			

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” (NPS 1906). The majority of national monuments today are managed by the National Park Service. The Dinosaur National Monument is crossed by Route Variations WYCO-B-2, WYCO-C-2, and WYCO-F-2 and within the alternative route study corridor for Route Variations WYCO-B-3, WYCO-C-3, WYCO-D-1, and WYCO-F-3. Dinosaur National Monument, which straddles Colorado and Utah, was designated in October of 1915 under President Woodrow Wilson for 80 acres that protected the Carnegie Dinosaur Quarry where, “... there is located an extraordinary deposit of Dinosaurian and other gigantic reptilian remains of the Juratrias period” (NPS 1915). The boundary for Dinosaur National Monument was expanded in July 1938 by President Franklin D. Roosevelt to include the Green and Yampa rivers. These route variations cross Deerlodge Road, an entrance to and part of Dinosaur National Monument, is owned in fee and administered by the NPS. For that reason, crossing Deerlodge Road would require that a right-of-way permit be granted to the Applicant by the NPS prior to construction. Applicable NEPA and other required analyses (e.g., Section 106 of the National Historic Preservation Act, Section 7 of the ESA) would be required prior to the NPS granting the right-of-way permit. A right-of-way will only be granted by NPS if there is no practicable alternative to such use of NPS lands per the NPS Director’s Order 53.

3.2.13.4.2 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.

Criteria for Assessing Level of Impacts

Criteria were developed to assess the level of a potential effect on special designations resources associated with implementation of the Project (Table 3-206).

TABLE 3-206 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ▪ Areas where the Project would physically conflict with any special designation or other management area ▪ Areas where the Project would conflict with specific applicable adopted policies or goals of the affected land-managing agency, on a case-by-case basis (e.g., exclusion for aboveground utilities)
Moderate	<ul style="list-style-type: none"> ▪ Special designations or other management areas including avoidance areas for aboveground utilities
Low	<ul style="list-style-type: none"> ▪ Areas where the Project does not hinder the management prescriptions for a special designation and other management areas ▪ Areas where designation is compatible with a transmission line

Mitigation and Effects Analysis

Initial Impacts

The level of potential effects on special designations and other management areas that could result from implementation of the Project was used as the basis for assessing initial impacts on special designation and other management area resources. The level of initial impacts on these areas was based on whether the effects would impede an agency from properly managing or preclude the management of a special designation or other management area. The initial impacts were assigned using the criteria presented in Table 3-206.

Mitigation Planning and Effectiveness

In addition to the Design Features of the Proposed Action described 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 area measures in Table 3-207.

TABLE 3-207 SELECTIVE MITIGATION MEASURES APPLIED FOR SPECIAL DESIGNATIONS		
Mitigation Measure	Description of Measure	Example of Application
2	Sensitive resources avoidance	Use overland travel (i.e., clear and cut or drive and crush) rather than constructing a new access road through a wildlife management area to avoid impacts on sensitive resources.
4	Minimize tree clearing	Minimize vegetation removal in areas with designated habitat.
5	Minimize new and improved accessibility	Use existing roads to the greatest extent possible when an alternative route is adjacent to or crossing a wildlife management area.
7	Span sensitive features	Site tower foundations in a manner that would span a sensitive cultural site within a designated area.
9	Maximize the span between the transmission towers	Site tower foundations at the maximum distance possible from each side of a suitable wild and scenic river segment.
11	Minimize right-of-way clearing	Minimize vegetation removal in a wildlife management area.

Residual Impacts

Table 3-208 summarizes the initial impacts based on the level of a potential effect on a special designation or other management area, the selective mitigation measures (Table 3-207) applied to mitigate potentially adverse effects on those resources, and residual impacts. The level of initial and residual impacts depends on whether the effects would reduce the manageable size of the area (i.e., contiguous area with relevant values), such that the area may not be able to be managed for the values for which it was established, or would conflict with management prescriptions of the designation.

TABLE 3-208 SUMMARY OF INITIAL AND RESIDUAL IMPACTS BY SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS			
Special Designation or Other Management Area	Initial Impact	Selective Mitigation Measures Applied	Residual Impact
Areas of Critical Environmental Concern	High	5, 7, 11	High/Moderate/ Low
Conservation Easements, Grassland Reserve Program Areas, Preservation Areas, and Land and Water Conservation Fund Sites	High	5, 7	High/Moderate/ Low
Utah Reclamation Mitigation and Conservation Commission properties	High	2, 7, 9	Moderate
National Monuments	High	7, 9	High/Moderate
Wyoming Wildlife Habitat Management Areas, Colorado State Wildlife Areas, and Utah Wildlife Management Areas	High	4, 5, 7, 11	Moderate/Low
Wild Horse Herd Management Areas	Moderate	5, 7	Low
Wild and Scenic River (Suitable) segments	High	9	High

3.2.13.5 Results

This section and MV-17 provides a summary of inventory and impact results, which includes the affected environment and environmental consequences, for each alternative route and route variation considered.

3.2.13.5.1 No Action Alternative

If the Project was not built, the current resource conditions of special designations occurring within the alternative route study corridors would remain as it presently exists.

3.2.2.5.2 Impacts Common to All Action Alternatives

There are not any impacts common to all alternative routes, including route variations, for the Project.

3.2.2.5.3 345-kilovolt Ancillary Transmission Components

No special designations are located in the vicinity of the 345kV ancillary transmission components. No impacts on special designations or other management areas would be anticipated from implementation of the 345kV ancillary transmission components.

3.2.2.5.4 500-kilovolt Transmission Line Components

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

The resource inventory and residual impacts on WYCO alternative routes considered are presented in Table 3-209.

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Alternative WYCO-B and route variations cross the following special designations and other management areas (including miles crossed):

- Adobe Town WHHMA (13.3 miles)
- Red Rim-Daley WHMA (4.1 miles)

There are no other special designations or other management areas that are within the alternative route study corridor but not crossed by Alternative WYCO-B.

Environmental Consequences (Wyoming)

Alternative WYCO-B would have a total of 4.1 miles of moderate impacts that occur where the reference centerline and associated right-of-way crosses the 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. Minimizing clearing of the right-of-way, including tree clearing, minimizing new or improved accessibility to the WHMA, and spanning sensitive features (Selective Mitigation Measures 4, 5, 7, and 11) would minimize ground-disturbing activities that could affect crucial winter habitat for pronghorn and nesting habitat for raptors. 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. Impacts on Adobe Town WHHMA would be mitigated to a low level by minimizing new or improved access into the WHHMA (Selective Mitigation Measure 5) and spanning or avoiding areas that the horses frequent for food, water or shelter (Selective Mitigation Measure 7).

Affected Environment (Colorado)

Alternative WYCO-B crosses the following special designations and other management areas (including miles crossed):

- Yampa River Recreation Area LWCF site (0.1 mile)
- Tuttle Ranch Conservation Easement (2.8 miles)

There are no other special designations or other management areas that are within the alternative route study corridor but not crossed by Alternative WYCO-B.

Alternative WYCO-B route variations in Colorado cross the following special designations and other management areas (including miles crossed):

- Route Variation WYCO-B-1 crosses the same special designations and other management areas as Alternative WYCO-B
- Route Variation WYCO-B-2 does not cross the Tuttle Ranch Conservation Easement but does cross Dinosaur National Monument's Deerlodge Road (0.1 mile) in addition to the Yampa River Recreation Area LWCF site (0.1 mile)
- Route Variation WYCO-B-3 crosses the same special designations and other management areas as Alternative WYCO-B but crosses the Tuttle Ranch Conservation Easement for 3.0 miles instead of 2.8 miles. Dinosaur National Monument's Deerlodge Road is within the alternative route corridor but not crossed by Route Variation WYCO-B-3.

Environmental Consequences (Colorado)

Alternative WYCO-B

Alternative WYCO-B would have a total of 2.8 miles of high residual impacts that occur where the reference centerline and associated right-of-way crosses 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.

In addition, Alternative WYCO-B would have a total of 0.1 miles of moderate impacts where the reference centerline and associated right-of-way crosses the Yampa River Recreation Area LWCF Site. The Yampa River Recreation Area was developed using federal monies, and should be considered avoidance areas for tower placement. By applying mitigation to span the Yampa River Recreation Area, it could be avoided by placing structures outside of the site. If the site could not be spanned, however, a conversion process could be utilized to place structures on the site. This process should only be utilized if all other options have been analyzed and determined unfeasible, due to the complexity of the process.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Alternative WYCO-B route variations in Colorado would have the following high and moderate residual impacts (including miles of impacts):

- Route Variation WYCO-B-1 would have the same impacts on Tuttle Ranch and the Yampa River Recreation Area as Alternative WYCO-B
- Route Variation WYCO-B-2 would have 0.1 mile of moderate impacts where the route variation and associated right-of-way would cross Dinosaur National Monument's Deerlodge Road. By applying mitigation for a maximum span across Deerlodge Road (Selective Mitigation Measures 7 and 9) direct impacts on the road could be mitigated from high initial to moderate residual impact. Because Deerlodge Road is part of the Dinosaur National Monument, a right-of-way permit would need to be granted by the National Park Service. This would include any applicable NEPA and/or cultural resource analysis prior to granting the right-of-way permit. A right-of-way could only be granted if there are no practicable alternatives to such use of NPS lands. Refer to Section 3.2.16 for discussion of visual impacts on Deerlodge Road from the Project
- In addition, Route Variation WYCO-B-2 would have 0.1 mile of moderate impacts where the reference centerline would cross the Yampa River Recreation Area LWCF Site. Refer to WYCO-B for discussion of the impacts on this LWCF.
- Route Variation WYCO-B-3 crosses the same special designations and other management areas as Alternative WYCO-B but crosses the Tuttle Ranch Conservation Easement for 3.0 miles instead of 2.8 miles. Impacts and mitigation for crossing these special designations and other management areas would be the same as what is described for Alternative WYCO-B.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Alternative WYCO-C and route variations cross the following special designations and other management areas (including miles crossed):

- Adobe Town WHHMA (16.6 miles)
- Red Rim-Daley WHMA (4.1 miles; the same as Alternative WYCO-B and route variations)

There are no other special designations or other management areas that are within the alternative route study corridor but not crossed by Alternative WYCO-C.

Environmental Consequences (Wyoming)

Alternative WYCO-C shares the same alignment with Alternative WYCO-B across the Red Rim-Daley WHMA; thus, the moderate impacts would be the same. Alternative WYCO-C would have a total of 16.6 miles of impacts on Adobe Town WHMA, which would be mitigated to a low level by minimizing new or improved access into the WHMA (Selective Mitigation Measure 5) and spanning or avoiding areas that the horses frequent for food, water or shelter (Selective Mitigation Measure 7).

Affected Environment (Colorado)

Alternative WYCO-C and route variations in Colorado cross and have within the alternative route study corridor the same special designations and other management areas (including miles crossed) as WYCO-B and its route variations.

Environmental Consequences (Colorado)

Alternative WYCO-C and route variations have the same impacts as Alternative WYCO-B and route variations.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Alternative WYCO-D and its route variation cross the following special designations and other management areas (including miles crossed):

- Red Rim-Daley WHMA (4.2 miles)
- Upper Muddy Creek Watershed/Grizzly WHMA (0.6 mile)

The Hanna Energy Park/Municipal Park LWCF site is within the alternative route study corridor but is not crossed by Alternative WYCO-D.

Environmental Consequences (Wyoming)

Alternative WYCO-D

Alternative WYCO-D would have a total of 4.7 miles of moderate impacts where the reference centerline would cross Red Rim-Daley WHMA (4.2 mile) and Upper Muddy Creek Watershed/Grizzly WHMA (0.6 mile). There are no high impacts for this alternative route. 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. Minimizing clearing of the right-of-way and spanning sensitive features (Selective Mitigation Measures 7 and 11) would minimize ground-disturbing activities. Disruptive activities may still occur during construction and maintenance of the alternative route; however, disturbance during sensitive periods would be avoided (Selective Mitigation Measure 12). 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 Rawlins Field Office to cross. 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 and 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 (Selective Mitigation Measures 7 and 11). 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.

Due to overlap of WHMA boundaries, the total miles of moderate residual impacts would be less than when individual WHMA impacts are added together.

Alternative WYCO-D Route Variation (WYCO-D-1)

Route Variation WYCO-D-1 would have the same impacts on special designations and other management areas as Alternative WYCO-D.

Affected Environment (Colorado)

Alternative WYCO-D crosses the following special designations and other management areas (including miles crossed):

- Moffat County Road #11 LWCF site (0.1 mile)
- Yampa River Recreation Area LWCF site (0.4 mile)
- Bitterbrush SWA (3.7 miles)
- Tuttle Ranch Conservation Easement (2.8 miles)

The Yampa River SWA, Yampa River Park and Yampa River Recreation area LWCF sites are within the alternative route study corridor but are not crossed by Alternative WYCO-D.

Route Variation WYCO-D-1 crosses the same special designations and other management areas as Alternative WYCO-D, but Route Variation WYCO-D-1 would cross 3.0 miles of the Tuttle Ranch Conservation Easement instead of 2.8 miles. The Dinosaur National Monument's Deerlodge Road is also within the alternative route corridor but is not crossed by the route variation.

Environmental Consequences (Colorado)

Alternative WYCO-D

Alternative WYCO-D shares the same alignment with Alternative WYCO-B across the Tuttle Ranch Conservation Easement; thus, the high residual impacts would be the same.

Alternative WYCO-D would have a total of 3.0 miles of moderate impacts. The reference centerline crosses 0.4 miles of the Yampa River Recreation Area LWCF Site and Moffat County Road #11 LWCF Site (0.1 mile). 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. By applying mitigation to span (Selective Mitigation Measure 7), the sites could be avoided. If the site cannot be spanned, a conversion process could be utilized to place structures on a site. This process should only be utilized if all other options have been analyzed and determined unfeasible, due to the complexity of the conversion process.

In addition to the 0.5 miles discussed above, there would be 3.7 miles of moderate impacts where the reference centerline crosses the Bitterbrush SWA. Although the area does not preclude overhead transmission line development, Colorado Division of Parks and Wildlife 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, (Selective Mitigation Measures 4, 5, 7, and 11), 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 (Selective Mitigation Measure 12).

Alternative WYCO-D Route Variation (WYCO-D-1)

Route Variation WYCO-D-1 would have the same impacts on special designations and other management areas as Alternative WYCO-D, except where the route variation would cross the Tuttle Ranch Conservation Easement for 3.0 miles instead of 2.8 miles.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Alternative WYCO-F in Wyoming crosses the following special designations and other management areas (including miles crossed), similar to the Alternatives WYCO-B and WYCO-C:

- Adobe Town WHHMA (0.6 miles)
- Red Rim-Daley WHMA (4.1 miles; the same as Alternatives WYCO-B and WYCO-C and route variations)

There are no other special designations or other management areas that are within the alternative route study corridor but are not crossed by Alternative WYCO-F.

Alternative WYCO-F route variations in Wyoming cross and have within their alternative route study corridors the same special designations and other management areas as Alternative WYCO-F.

Environmental Consequences (Wyoming)

Alternative WYCO-F

Alternative WYCO-F and route variations share the same alignment with Alternatives WYCO-B and WYCO-C across the Red Rim-Daley WHMA; thus, the moderate impacts would be the same. Alternative WYCO-F would have a total of 0.6 mile of impacts on Adobe Town WHHMA, which would be mitigated to a low level by minimizing new or improved access into the WHHMA (Selective Mitigation Measure 5) and spanning or avoiding areas that the horses frequent for food, water or shelter (Selective Mitigation Measure 7).

Affected Environment (Colorado)

Alternative WYCO-F and route variations cross and have within the alternative route study corridor the same special designations and other management areas (including miles crossed) as the Colorado portions of Alternatives WYCO-B and WYCO-C and their route variations.

Environmental Consequences (Colorado)

Alternative WYCO-F and route variations have the same impacts as Alternatives WYCO-B and WYCO-C and route variations.

TABLE 3-209 ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES												
Alternative Route	Total Miles	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
WYCO-B and Route Variations												
WYCO-B (Applicant Preferred Alternative)	204.5	0.0	2.8	0.1	0.0	0.0	13.3	4.1	0.0	13.3	4.2	2.8
<i>Wyoming</i>	<i>138.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>13.3</i>	<i>0.0</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>
<i>Colorado</i>	<i>66.4</i>	<i>0.0</i>	<i>2.8</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>4.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>2.8</i>
WYCO-B-1	204.9	0.0	2.8	0.1	0.0	0.0	13.3	4.1	0.0	13.3	4.2	2.8
<i>Wyoming</i>	<i>138.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>
<i>Colorado</i>	<i>66.8</i>	<i>0.0</i>	<i>2.8</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>2.8</i>
WYCO-B-2 (Agency Preferred Alternative)	204.5	0.0	0.0	0.1	0.1	0.0	13.3	4.1	0.0	13.3	4.3	0.0
<i>Wyoming</i>	<i>138.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>
<i>Colorado</i>	<i>66.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.0</i>
WYCO-B-3	204.5	0.0	3.0	0.1	0.0	0.0	13.3	4.1	0.0	13.3	4.2	3.0
<i>Wyoming</i>	<i>138.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>	<i>13.3</i>	<i>4.1</i>	<i>0.0</i>
<i>Colorado</i>	<i>66.4</i>	<i>0.0</i>	<i>3.0</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>3.0</i>
WYCO-C and Route Variations												
WYCO-C	210.4	0.0	2.8	0.1	0.0	0.0	16.6	4.1	0.0	16.6	4.2	2.8
<i>Wyoming</i>	<i>66.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>16.6</i>	<i>4.1</i>	<i>0.0</i>	<i>16.6</i>	<i>4.1</i>	<i>0.0</i>
<i>Colorado</i>	<i>144.0</i>	<i>0.0</i>	<i>2.8</i>	<i>0.1</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.1</i>	<i>2.8</i>

TABLE 3-209 ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES												
Alternative Route	Total Miles	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
WYCO-C-1	210.8	0.0	2.8	0.1	0.0	0.0	16.6	4.1	0.0	16.6	4.2	2.8
Wyoming	144.0	0.0	0.0	0.0	0.0	0.0	16.6	4.1	0.0	16.6	4.1	0.0
Colorado	66.8	0.0	2.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.8
WYCO-C-2	210.4	0.0	0.0	0.1	0.1	0.0	16.6	4.1	0.0	16.6	4.3	0.0
Wyoming	144.0	0.0	0.0	0.0	0.0	0.0	16.6	4.1	0.0	16.6	4.1	0.0
Colorado	66.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0
WYCO-C-3	210.4	0.0	3.0	0.1	0.0	0.0	16.6	4.1	0.0	16.6	4.2	3.0
Wyoming	144.0	0.0	0.0	0.0	0.0	0.0	16.6	4.1	0.0	16.6	4.1	0.0
Colorado	66.4	0.0	3.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.0
WYCO-D and Route Variation												
WYCO-D	250.0	0.0	2.8	0.5	0.0	0.0	0.0	8.4	0.0	0.0	8.9	2.8
Wyoming	135.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	4.7	0.0
Colorado	115.0	0.0	2.8	0.5	0.0	0.0	0.0	3.7	0.0	0.0	4.2	2.8
WYCO-D-1	250.0	0.0	3.0	0.5	0.0	0.0	0.0	8.4	0.0	0.0	8.9	3.0
Wyoming	135.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	4.7	0.0
Colorado	115.0	0.0	3.0	0.5	0.0	0.0	0.0	3.7	0.0	0.0	4.2	3.0

TABLE 3-209 ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS INVENTORY DATA AND RESIDUAL IMPACTS FOR THE WYOMING TO COLORADO – AEOLUS TO U.S. HIGHWAY 40 (WYCO) ALTERNATIVE ROUTES												
Alternative Route	Total Miles	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
WYCO-F and Route Variations												
WYCO-F	218.9	0.0	2.8	0.1	0.0	0.0	0.6	4.1	0.0	0.6	4.2	2.8
Wyoming	152.5	0.0	0.0	0.0	0.0	0.0	0.6	4.1	0.0	0.6	4.1	0.0
Colorado	66.4	0.0	2.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.8
WYCO-F-1	219.3	0.0	2.8	0.1	0.0	0.0	0.6	4.1	0.0	0.6	4.2	2.8
Wyoming	152.5	0.0	0.0	0.0	0.0	0.0	0.6	4.1	0.0	0.6	4.1	0.0
Colorado	66.8	0.0	2.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.8
WYCO-F-2	218.9	0.0	0.0	0.1	0.1	0.0	0.6	4.1	0.0	0.6	4.3	0.0
Wyoming	152.5	0.0	0.0	0.0	0.0	0.0	0.6	4.1	0.0	0.6	4.1	0.0
Colorado	66.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0
WYCO-F-3	218.9	0.0	3.0	0.1	0.0	0.0	0.6	4.1	0.0	0.6	4.2	3.0
Wyoming	152.5	0.0	0.0	0.0	0.0	0.0	0.6	4.1	0.0	0.6	4.1	0.0
Colorado	66.4	0.0	3.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.0

NOTE: ¹Due to overlap of special designations and management areas, the number of total miles of residual impacts would be less than if impacts on individual special designations and other management areas were added together.

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

The baseline resource inventory and residual impacts on COUT BAX alternative routes considered are presented in Table 3-210.

Alternative COUT BAX-B

Affected Environment (Colorado)

Alternative COUT BAX-B crosses the following special designations and other management areas (including miles crossed):

- Piceance/East Douglas WHHMA (0.8 mile)

The White River Recreation Area LWCF Site, White River Riparian ACEC, Oil Spring Mountain ACEC, Badger Wash ACEC, and McInnis Canyons NCA are within the alternative route study corridor but are not crossed by Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Alternative COUT BAX-B would have no high or moderate impacts.

Alternative COUT BAX-B would have a total of 0.8 mile of impacts on Piceance/East Douglas WHHMA, which would be mitigated to a low level by minimizing new or improved access into the WHHMA (Selective Mitigation Measure 5) and spanning or avoiding areas that the horses frequent for food, water or shelter (Selective Mitigation Measure 7).

Affected Environment (Utah)

Alternative COUT BAX-B crosses the following special designations and other management areas (including miles crossed):

- Big Hole ACEC (0.3 mile)
- North Moroni Conservation Easement (0.5 mile)
- Fountain Green WMA (0.1 mile) and Salt Creek WMA (1.1 miles)

The Triangle Ranch WMA, Nephi WMA, Burraston Ponds WMA, and Canyon Hills Park Golf Course (Jaub Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by Alternative COUT BAX-B.

Environmental Consequences (Utah)

Alternative COUT BAX-B would have a total of 0.8 mile of high impacts. A portion of these impacts occur where the reference centerline would cross 0.3 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 the boundary (Selective Mitigation Measure 7).

In addition to crossing the Big Hole ACEC high impacts, the reference centerline would also cross the North Moroni Conservation Easement (0.5 mile). 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. If approval is granted, minimizing new and improved accessibility into the conservation easement (Selective Mitigation Measure 5) and spanning or avoiding sensitive features in the

conservation easement (Selective Mitigation Measure 7) could be used to mitigate impacts on the big game herds and the winter range be protected.

Alternative COUT BAX-B would have 1.2 miles of moderate residual impacts where the reference centerline would cross 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. Minimizing tree removals, reducing the creation of new access routes, and spanning sensitive features (Selective Mitigation Measures 4, 5, 7, and 11), wildlife conflicts could be reduced. Disruptive activities may still occur during construction and maintenance of the alternative route. However, disturbance during sensitive periods would be avoided (Selective Mitigation Measure 12). 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 (Colorado)

Alternative COUT BAX-C crosses and has within the alternative route study corridor the same special designations and other management areas (including miles crossed) as the Colorado portions of Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Alternative COUT BAX-C would have no high or moderate residual impacts and low impacts would be the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Alternative COUT BAX-C 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 San Rafael Canyon ACEC, Triangle Ranch WMA, Nephi WMA, Burraston Ponds WMA, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by Alternative COUT BAX-C.

Environmental Consequences (Utah)

Alternative COUT BAX-C shares the same alignment with Alternative COUT BAX-B across the North Moroni Conservation Easement, Fountain Green WMA, and Salt Creek WMA; thus, the impacts on these areas would be the same. COUT BAX-C does not cross Big Hole ACEC, and therefore has a total of 0.5 mile rather than 0.8 mile of high impacts.

Alternative COUT BAX-E

Affected Environment (Colorado)

Alternative COUT BAX-E crosses and has within the alternative route study corridor the same special designations and other management areas (including miles crossed) as the Colorado portions of Alternatives COUT BAX-B and COUT BAX-C.

Environmental Consequences (Colorado)

Alternative COUT BAX-E would have no high or moderate residual impacts and would have the same low impacts as Alternatives COUT BAX-B and COUT BAX-C.

Affected Environment (Utah)

Alternative COUT BAX-E crosses the following special designation and other management areas (including miles crossed):

- Gordon Creek WMA (4.7 miles) and Salt Creek WMA (1.1 miles)

The San Rafael Canyon ACEC, Hilltop Conservation Easement, Fountain Green WMA, Triangle Ranch WMA, Nephi WMA, Burraston Ponds WMA, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by Alternative COUT BAX-E.

Environmental Consequences (Utah)

Alternative COUT BAX-E would have a total of 5.8 miles of moderate residual impacts occurring where the reference centerline would cross 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. By applying mitigation such as minimizing tree clearing, new and improved accessibility, and right-of-way clearing and spanning sensitive features, (Selective Mitigation Measures 4, 5, 7, and 11), 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 (Selective Mitigation Measure 12). 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. 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.

Alternative Route	Total Miles	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
COUT BAX-B	279.2	0.3	0.5	0.0	0.0	0.0	0.8	1.2	0.0	0.8	1.2	0.8
<i>Colorado</i>	86.7	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0
<i>Utah</i>	192.5	0.3	0.5	0.0	0.0	0.0	0.0	1.2	0.0	0.0	1.2	0.8
COUT BAX-C	289.7	0.0	0.5	0.0	0.0	0.0	0.8	1.2	0.0	0.8	1.2	0.5
<i>Colorado</i>	86.7	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0
<i>Utah</i>	203.0	0.0	0.5	0.0	0.0	0.0	0.0	1.2	0.0	0.0	1.2	0.5
COUT BAX-E	291.5	0.0	0.0	0.0	0.0	0.0	0.8	5.8	0.0	0.8	5.8	0.0
<i>Colorado</i>	86.7	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0
<i>Utah</i>	204.8	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	5.8	0.0

NOTE: ¹Due to overlap of special designations and management areas, the total miles of impacts would be less than if individual special designations and management impacts are added together.

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

The baseline resource inventory and residual impacts on the COUT alternative routes considered are presented in Table 3-211.

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment (Colorado)

Alternative COUT-A and Route Variation COUT-A-1 do not cross any special designations or other management areas.

Environmental Consequences (Colorado)

Alternative COUT-A and Route Variation COUT-A-1 would have no impacts.

Affected Environment (Utah)

Alternative COUT-A and its route variation cross the following special designations and other management areas (including miles crossed):

- URMCC Property (4.0 miles)
- Rabbit Gulch WMA (3.5 miles), Tabby Mountain WMA (1.7 miles), Currant Creek WMA (2.3 miles), Dairy Fork WMA (1.9 miles), Lake Fork WMA (0.9 mile), Birdseye WMA (1.4 miles), Spencer Fork WMA (4.1 miles), and Salt Creek WMA (1.1 miles)

The 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, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by the reference centerline.

Environmental Consequences (Utah)

Alternative COUT-A and Route Variation COUT-A-1 would have a total of 19.4 miles of moderate residual impacts, 16.8 miles occurring where the reference centerline would cross WMAs. The WMAs that would be crossed include Rabbit Gulch WMA (3.5 miles), Tabby Mountain WMA (1.6 miles), Currant Creek WMA (2.3 miles), Dairy Fork WMA (1.9 miles), Lake Fork WMA (0.9 mile), Birdseye WMA (1.4 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. By applying mitigation such as minimizing tree clearing, new and improved accessibility, right-of-way clearing, and spanning sensitive features, (Selective Mitigation Measures 4, 5, 7, and 11), 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 (Selective Mitigation Measure 12). 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-A and Route Variation COUT-A-1 would have 4.0 miles of moderate residual impacts where the reference centerline would cross 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 and COUT-A-1 to cross these lands.

Due to overlap of WMAs and URMCC managed lands, the total miles of moderate residual impacts would be less than if WMAs and URMCC area impacts are added together.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment (Colorado)

Alternative COUT-B and route variations do not cross any special designations or other management areas.

Environmental Consequences (Colorado)

Alternative COUT-B and route variations in Colorado would have no identifiable impacts.

Affected Environment (Utah)

Alternative COUT-B and route variations crosses the following special designations and other management areas (including miles crossed):

- Cottonwood WMA (1.6 miles), Starvation WMA (0.7 mile), Dairy Fork WMA (2.1 miles), Lake Fork WMA (0.9 mile), Birdseye WMA (1.4 miles), Spencer Fork WMA (4.1 miles), and Salt Creek WMA (1.1 miles)

The 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, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by the reference centerline.

Environmental Consequences (Utah)

Alternative COUT-B and route variations would have 11.8 miles of moderate residual impacts where the reference centerline crosses Cottonwood WMA (1.6 miles), Starvation WMA (0.7 mile), Dairy Fork WMA (2.1 miles), Lake Fork WMA (0.9 mile), Birdseye WMA (1.4 miles), Spencer Fork WMA (4.0 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. By applying mitigation such as minimizing tree clearing, new and improved accessibility, right-of-way clearing, and spanning sensitive features, (Selective Mitigation Measures 4, 5, 7, and 11), 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 (Selective Mitigation Measure 12). 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 and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Affected Environment (Colorado)

Alternative COUT-C does not cross any special designations or other management areas.

The Badger Wash ACEC is within the alternative route study corridor but is not crossed by the reference centerline.

Alternative COUT-C route variations do not cross any special designations or other management areas with the reference centerlines and have the same special designations within the alternative route study corridor as Alternative COUT-C.

Environmental Consequences (Colorado)

Alternative COUT-C and route variations in Colorado would have no impacts.

Affected Environment (Utah)

Alternative COUT-C crosses the following special designations and other management areas (including miles crossed):

- Lower Green River Corridor ACEC in the BLM Vernal Field Office (0.7 mile)
- Lower Green River Suitable WSR segment in the BLM Vernal Field Office (0.6 mile)
- Starvation WMA (0.7 mile), Dairy Fork WMA (2.1 miles), Lake Fork WMA (0.9 mile), Birdseye WMA (1.4 miles), Spencer Fork WMA (4.1 miles), and Salt Creek WMA (1.1 miles)

The 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, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by the reference centerline.

The Utah portions of Alternative COUT-C route variations cross and have within the alternative route study corridors the same special designations and other management areas as Alternative COUT-C.

Environmental Consequences (Utah)

Alternative COUT-C and route variations would result in a total of 0.6 mile of high residual impacts where the alternative routes crosses the Lower Green River suitable WSR, impacting the outstandingly remarkable values and a tentative scenic classification. Short-term impacts from the alternative crossing the suitable WSR 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 WSR that would impact a recreational user's experience along the river and noise and dust during maintenance activities. Selective Mitigation Measure 9 (maximize transmission span at crossings) would be used for the alternative route to span the suitable WSR to reduce impacts to the outstandingly remarkable value for fish in the river and reduce visual dominance of transmission structures being located directly adjacent to the river. To further minimize effects on views for recreationists along the river, selective mitigation would be applied to limit the construction of new access roads within view of the river, minimizing ground disturbance associated with construction access roads, and positioning transmission structures where they would be backdropped as viewed from the river (Selective Mitigation Measures 3, 5, and 7).

Even after the application of these selective mitigation measures, the outstandingly remarkable value for recreation and tentative scenic classification would begin to be dominated by the Project.

Alternative COUT-C and route variations would result in a total of 11.0 miles of moderate residual impacts. Alternative COUT-C and route variations would have 0.7 mile of moderate residual impacts where the alternative route crosses the Lower Green River Corridor ACEC, impacting the relevant and important values (scenery and riparian habitat) for which the ACEC was designated. The Vernal RMP also designated this area as VRM Class II to retain the existing character of the landscape, which allows management activities to be seen but not attract attention of the casual observer (Section 3.2.16). 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 and not meet the objectives associated with VRM Class II. By applying mitigation that minimizes new and improved accessibility and right-of-way clearing (Selective Mitigation Measures 5 and 7), potential impacts on riparian habitat and scenery could be reduced. Impacts on the riparian habitat would be avoided by spanning the river (Selective Mitigation Measure 9), which would also reduce impacts on visual values; however the Project would not be able to be mitigated to meet VRM Class II objectives. A plan amendment for Alternative COUT-C to cross VRM Class II lands would be required (Chapter 5).

In addition, Alternative COUT-C would cross 10.3 miles of WMAs including Starvation WMA (0.7 mile), Dairy Fork WMA (2.1 miles), Lake Fork WMA (0.9 mile), Birdseye WMA (1.4 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. By applying mitigation such as minimizing tree clearing, new and improved accessibility, and right-of-way clearing and spanning sensitive features, (Selective Mitigation Measures 4, 5, 7, and 11), 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 (Selective Mitigation Measure 12). 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-H (Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-H does not cross any special designations or other management areas with the reference centerline.

The Badger Wash ACEC is within the alternative route study corridor but is not crossed by COUT-H.

Environmental Consequences (Colorado)

Alternative COUT-H would have no identifiable impacts.

Affected Environment (Utah)

Alternative COUT-H crosses the following special designations and other management areas (including miles crossed):

- Lower Green River Corridor ACEC in the BLM Vernal Field Office (0.7 mile)
- Lower Green River Suitable WSR segment in the BLM Vernal Field Office (0.6 mile)
- Gordon Creek WMA (5.1 mile) and Salt Creek WMA (1.1 miles)

The Nine Mile ACEC, Lears Canyon ACEC, Hilltop Conservation Easement, Hill Creek WHHMA, Fountain Green WMA, Triangle Ranch WMA, Nephi WMA, Burraston Ponds WMA, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridor but are not crossed by the reference centerline.

Environmental Consequences (Utah)

Alternative COUT-H would have the same impacts as Alternative COUT-C where the reference center line crosses the Lower Green River WSR and Lower Green River ACEC.

In addition, Alternative COUT-H would have 6.2 miles of moderate residual impacts where the reference centerline crosses the Gordon Creek WMA (5.1 miles) and Salt Creek WMA (1.1 miles).

Alternative COUT-I

Affected Environment (Colorado)

Alternative COUT-I does not cross any special designations or other management areas.

The Badger Wash ACEC is within the alternative route study corridor but is not crossed by COUT-I.

Environmental Consequences (Colorado)

Alternative COUT-I would have no identifiable impacts.

Affected Environment (Utah)

Alternative COUT-I crosses the following special designations and other management areas (including miles crossed):

- Lower Green River Corridor ACEC in the BLM Vernal Field Office (0.7 mile)
- Lower Green River Suitable WSR segment in the BLM Vernal Field Office (0.6 mile)
- North Moroni Conservation Easement (0.5 mile)
- Fountain Creek WMA (0.1 mile) and Salt Creek WMA (1.1 miles)

The Hill Creek WHHMA, Nine Mile ACEC, Lears Canyon ACEC, Hilltop Conservation Easement, Triangle Ranch WMA, Nephi WMA, Burraston Ponds WMA, and Canyon Hills Park Golf Course (Juab Golf Course 104 LWCF site) are within the alternative route study corridors but are not crossed by the reference centerline.

Environmental Consequences (Utah)

Alternative COUT-I would have the same impacts as Alternative COUT-C where the reference centerline crosses the Lower Green River WSR and Lower Green River ACEC .

In addition, Alternative COUT-I would have a total of 0.5 miles of high impacts where the reference centerline would cross 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. If approval is granted, minimizing new and improved accessibility into the conservation easement (Selective Mitigation Measure 5) and spanning or avoiding sensitive features in the conservation easement (Selective Mitigation Measure 7) could be used to mitigate impacts on the big game herds and the winter range be protected.

In addition, Alternative COUT-I would cross 1.1 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. By applying mitigation such as minimizing tree clearing, new and improved accessibility, and right-of-way clearing and spanning sensitive features, (Selective Mitigation Measures 4, 5, 7, and 11), 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 (Selective Mitigation Measure 12). 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.

3.2.13.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Siting Area A – Powder Wash

Affected Environment

The Adobe Town Wild Horse Herd Management Area (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. Impacts could include temporary displacement of wild horses due to noise and dust during construction and maintenance activities. However by minimizing new or improved access (Selective Mitigation Measure 5) and avoiding areas horses use for food, water, or shelter (Selective Mitigation Measure 7), impacts would most likely be low and temporary. Additional mitigation may be required by the agencies and would be incorporated into the construction POD.

**TABLE 3-211
 ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS
 AND OTHER MANAGEMENT AREAS 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	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
COUT-A and Route Variation												
COUT-A	206.0	0.0	0.0	0.0	0.0	4.0	0.0	16.8	0.0	0.0	19.4	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	182.0	0.0	0.0	0.0	0.0	4.0	0.0	16.8	0.0	0.0	19.4	0.0
COUT-A-1	205.6	0.0	0.0	0.0	0.0	4.0	0.0	16.8	0.0	0.0	19.4	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	181.6	0.0	0.0	0.0	0.0	4.0	0.0	16.8	0.0	0.0	19.4	0.0
COUT-B and Route Variations												
COUT-B	216.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	192.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
COUT-B-1	212.7	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	188.7	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
COUT-B-2	214.2	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	190.2	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
COUT-B-3	213.9	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	189.9	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0

**TABLE 3-211
 ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS
 AND OTHER MANAGEMENT AREAS 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	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
COUT-B-4	214.2	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	190.2	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
COUT-B-5	213.9	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
<i>Colorado</i>	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	189.9	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0	11.8	0.0
COUT-C and Route Variations												
COUT-C	209.8	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	185.0	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
COUT-C-1	206.4	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	181.6	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
COUT-C-2	207.9	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	183.1	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
COUT-C-3 (Agency Preferred Alternative)	207.6	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
<i>Colorado</i>	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Utah</i>	182.8	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6

**TABLE 3-211
 ALTERNATIVE ROUTE COMPARISON FOR SPECIAL DESIGNATIONS
 AND OTHER MANAGEMENT AREAS 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	Inventory Data								Residual Impacts ¹ (miles)		
		Area of Critical Environmental Concern	Conservation Easements and Preservation Areas	Land and Water Conservation Fund Site	National Park Service – Dinosaur National Monument	Utah Reclamation Mitigation Conservation Commission	Wild Horse Herd Management Area	Utah Wildlife Management Area, Wyoming Wildlife Habitat Management Area, and Colorado State Wildlife Area	Wild and Scenic River (Suitable)	Low	Moderate	High
COUT-C-4	207.9	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utah	183.1	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
COUT-C-5	207.6	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utah	182.8	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.6	0.0	11.0	0.6
COUT-H and COUT-I												
COUT-H (Applicant Preferred Alternative)	200.6	0.7	0.0	0.0	0.0	0.0	0.0	6.2	0.6	0.0	6.9	0.6
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utah	175.8	0.7	0.0	0.0	0.0	0.0	0.0	6.2	0.6	0.0	6.9	0.6
COUT-I	240.2	0.7	0.5	0.0	0.0	0.0	0.0	1.1	0.6	0.0	1.8	1.1
Colorado	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Utah	215.4	0.7	0.5	0.0	0.0	0.0	0.0	1.1	0.6	0.0	1.8	1.1

NOTE: ¹Due to overlap of special designations and management areas, the total miles of impacts would be less than if individual special designations and management impacts are added together.

Siting Area B – Nine Mile Basin

Affected Environment

There are no special designations or other management areas in Siting Area B.

Environmental Consequences

No effects on special designations or other management areas in Siting Area B 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)
- Deerlodge Road (part of Dinosaur National Monument) (located in the southern portion 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 Conservation Easement and Deerlodge Road 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 and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

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 and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

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.

Environmental Consequences

There are no effects on special designations or other management areas in Siting Area G.

Alternative COUT-A and Route Variation (COUT-A-1)

Siting Area F – Roosevelt

Affected Environment

There are no special designations or other management areas in Siting Area F.

Environmental Consequences

No effects on special designations or other management areas in Siting Area F would be anticipated.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

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

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Siting Area E – Bonanza

Affected Environment

There are no special designations or other management areas in Siting Area E.

Environmental Consequences

No effects on special designations or other management areas in Siting Area E would be anticipated.

Alternatives COUT-H (Applicant Preferred Alternative) 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 and route variations.

3.2.14 Wilderness Areas, Wilderness Study Areas, and Non-wilderness Study Area Lands with Wilderness Characteristics

3.2.14.1 Introduction and Regulatory Framework

This section discusses congressionally designated wilderness areas, WSAs, and inventoried non-WSA lands with wilderness characteristics located in the 2-mile-wide alternative route study corridors. In general, these areas have been identified as lands with little to no human disturbance that reflect a unique natural environment. Laws, regulations, and policies that establish and provide overall direction for the management of wilderness areas, WSAs, and non-WSA lands with wilderness characteristics.

- **Wilderness Act of 1964; (16 U.S.C. 1131-1136, 78 Stat. 890).** P.L. 88-577, approved September 3, 1964 (FWS 2012e). Designated by Congress, wilderness areas are defined as, "...an area where the earth and its community of life are untrammelled 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 a 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, or 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)** (BLM 2001b). Similar to wilderness areas, WSAs are part of the National Landscape Conservation System. 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 only 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, or historical value

For WSAs, FLPMA mandates that the BLM “not impair the suitability” of areas identified as “having wilderness characteristics” (BLM 2012i).

Specific management objectives and prescriptions for the individual wilderness areas and WSAs are provided in the relevant BLM and USFS land-use plans for the administrative jurisdiction in which they occur.

Pursuant to Section 201 of FLPMA, the BLM is required 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 provides that the preparation and maintenance of the inventory will not change or prevent change of the management or use of the 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.

If during inventories lands are determined to meet the criteria for non-WSA lands with wilderness characteristics, this area is then maintained as part of a non-WSA lands with wilderness characteristics inventory for that BLM field office. The potential effects of a proposed action on the inventoried wilderness characteristics and compliance with management-level decisions (established in BLM RMPs) for the areas must be considered by the BLM when making project-level decisions.

For the BLM Field Offices (Little Snake, Price, Moab, Vernal, and Richfield) in the 2-mile-wide alternative route study corridor, the applicable RMPs have been amended to provide management objectives and prescriptions for non-WSA lands with wilderness characteristics. In Utah, these areas have been identified as “Natural Areas” in the RMP. The BLM Little Snake Field Office recently completed an inventory for non-wilderness study areas lands with wilderness characteristics that updates their previous inventory, which was documented in the Little Snake RMP.

In the BLM Rawlins Field Office, BLM manages non-WSA lands with wilderness characteristics for multiple-use. Due to valid existing lease rights; implementation of management actions to protect identified wilderness characteristics are prohibited (BLM 2008b).

The BLM Grand Junction and White River Field Offices have recently completed inventories for non-WSA lands with wilderness characteristics but have not yet conducted or are in the process of a planning effort for revising or amending their RMPs with management for the areas.

- **BLM Manual 6310 – Conducting Wilderness Characteristics Inventory on BLM Lands (Public).** For lands with wilderness characteristics, “This policy contains the BLM guidance and general procedure for conducting wilderness characteristics inventories under Section 201 of FLPMA and supersedes all previous guidance on this topic”. 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 these areas have been identified, a complete inventory is done on the area, looking at the size, naturalness, and outstanding opportunities for solitude or a primitive and unconfined type of recreation, as well as the delineation of the boundary. If an inventory meets all of these criteria, the area is considered for and managed as lands with wilderness characteristics (BLM 2012g).

Effects on non-WSA lands with wilderness characteristics were only addressed for the inventory areas crossed by the Project because BLM Manual 6310 directs that inventory only consider outside influences on solitude that are pervasive and omnipresent, and only major disturbances as disruptions of the naturalness of an area.

- **BLM Manual 6320.** Considering lands with wilderness characteristics in the BLM Land Use Planning Process (Public). This manual 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 areas, outlining the management actions with allowable uses and restrictions (i.e., right-of-way exclusion or avoidance area (BLM 2012h).
- **BLM Manual 6330 – Management of Wilderness Study Areas (Public).** This manual provides, “...policy on the non-impairment standard to Bureau of Land Management (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 2012i). 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 on the management of the WSAs” (BLM 2012j). No alternative route study corridor would cross a WSA.
- **BLM Manual 6340 – Management of Designated Wilderness Areas (Public).** This manual 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 2012j). No alternative route study corridor would cross a wilderness area.
- **National Landscape Conservation System, H.R. 146 (111th): Omnibus Public Land Management Act of 2009, Title II, Sec. 2002** (BLM 2009e). This law established the National

Landscape Conservation System, which was created by the BLM 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 National Landscape Conservation 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.

3.2.14.2 Issues Identified for Analysis

The potential for effects on the wilderness characteristics of wilderness areas, WSAs, and non-WSA lands with wilderness characteristics was identified as an issue for analysis by the BLM and USFS.

Additionally, an assessment of compliance with BLM RMP management objectives and decisions for non-WSA lands with wilderness characteristics also was required.

3.2.14.3 Regional Setting

No wilderness areas or WSAs are located within the 2-mile-wide alternative route study corridor in Wyoming. There are wilderness areas and WSAs within the 2-mile-wide alternative route study corridor in Colorado and Utah, but none of these areas are crossed by alternative routes or route variations considered for the Project.

Non-WSA lands with wilderness characteristics in the BLM Little Snake, White River, and Grand Junction Field Offices in Colorado, and BLM Moab and Price Field Offices in Utah occur within the 2-mile-wide alternative route study corridor and several are crossed by alternative routes and route variations considered for the Project (Table 3-213).

3.2.14.4 Study Methodology

3.2.14.4.1 Inventory

Wilderness areas, WSAs, and non-WSA lands with wilderness characteristics were inventoried within the 2-mile-wide alternative route study corridors (MV-18). Table 3-212 identifies the wilderness areas and WSAs in the 2-mile-wide alternative route study corridors. Table 3-213 identifies the non-WSA lands with wilderness characteristics in the 2-mile-wide alternative route study corridors.

Wilderness Areas and Wilderness Study Areas

Pursuant to the Wilderness Act of 1964, the BLM and USFS manage congressionally designated portions of the lands they administer as wilderness areas for protection of primitive, natural landscapes that have no permanent improvements and are primarily changed by weather and other natural processes. These areas allow for a primitive experience for the recreationist.

In contrast, WSAs were identified for potential designation after an inventory and study of roadless areas on federal lands was completed. 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 2013c).

TABLE 3-212 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 or Route Variation	Relevant Alternative Route(s) and Route Variation(s)
Wyoming				
No wilderness areas or Wilderness Study Areas (WSA) are within 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 alternative routes
Oil Spring Mountain WSA	BLM White River Field Office	17,700	No	All COUT BAX alternative routes
Utah				
Mount Nebo Wilderness Area	Uinta-Wasatch-Cache National Forest	22,800	No	All COUT BAX and COUT alternative routes and route variations
Mexican Mountain WSA	BLM Price Field Office	59,600	No	COUT BAX-B

Non-wilderness Study Area Lands with Wilderness Characteristics

Public lands within each BLM field office within the 2-mile-wide study corridor have been inventoried to identify lands that meet the size requirements and contain naturalness, opportunities for solitude, primitive and unconfined recreation, and any additional supplemental values to be identified as lands with wilderness characteristics. Table 3-213 identifies the non-WSA lands with wilderness characteristics inventoried in the study corridor by BLM field office.

3.2.14.4.2 Impact Assessment and Mitigation Planning

Wilderness Areas and Wilderness Study Areas

Types of Potential Environmental Effects

Direct effects associated with construction, operation, and maintenance activities could include impacts on wilderness characteristics in wilderness areas and WSAs associated with presence of the transmission line, ancillary facilities, and permanent access routes. Other potential environmental impacts include reduced size of the non-WSA lands with wilderness characteristics or dividing the non-WSA lands with wilderness characteristics into more than one unit. Some examples of these impacts could include diminished recreational and wilderness experience for users by reducing the naturalness in the setting and introducing new access with limited or restricted admittance.

Indirect effects would include potential impacts on wilderness characteristics of wilderness areas and WSAs as a result of increased access. If destination points are made more accessible by new access roads constructed for the Project, these areas could be affected to an extent that would preclude management of an area for the values for which it was established or the objectives for which it is managed.

Effects Analysis

Effects on wilderness areas or WSAs from the Project would not occur because the Project would avoid crossing these areas. Potential visual impacts on wilderness areas and WSAs are discussed in Section 3.2.16.

Non-wilderness Study Area Lands with Wilderness Characteristics

Types of Potential Environmental Effects

Direct effects on the inventoried wilderness characteristics of non-WSA lands with wilderness characteristics associated with construction, operation, and maintenance activities could include diminished recreational and wilderness experience for users by reducing the naturalness in the setting and introducing new access with limited or restricted admittance.

Indirect effects on the inventoried wilderness characteristics of non-WSA lands with wilderness characteristics could occur if temporary or permanent access routes were to result in increased access to non-WSA lands with wilderness characteristics.

Effects Analysis

A qualitative assessment of the potential effects of the Project on the inventoried wilderness characteristics identified for non-WSA lands with wilderness characteristics was conducted for each area and, if applicable, management and objectives identified for the inventoried area.

Mitigation Planning

Selective mitigation measures that would be applied to reduce, avoid or mitigate effects on the wilderness characteristics of a Non-wilderness Study Area Lands with Wilderness Characteristics unit, include (refer also to Section 2.4):

- **Selective Mitigation Measure 3 (Minimize Slope Cut and Fill)** was applied to areas where access road construction would occur on steep slopes. 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, affecting the wilderness characteristics in a unit.
- **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 effects on the wilderness characteristics of a unit 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 the of landscape, thus reducing effects on the wilderness characteristics of a unit, through rehabilitating access roads and tower pads not required beyond construction.
- **Selective Mitigation Measure 7 (Span and/or Avoid Sensitive Features)** was applied where sensitive features within a unit 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 effects on the wilderness characteristics of a unit.

- **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, road, scenic byway, or other sensitive feature to the greatest extent practicable, thereby reducing dominance of the transmission line structures in a viewer's viewshed and/or effecting the wilderness characteristics of a unit.
- **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 effects on the wilderness characteristics 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. By using this selective mitigation measure no new access infrastructure would be developed resulting in reduced effects on the wilderness characteristics of a unit.

TABLE 3-213 INVENTORIED NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICS IN THE STUDY CORRIDOR									
Unit ID/Name	Unit Size (Acres)	Wilderness Inventory Characteristic Values					Supplemental Values	Crossed by Reference Centerline Route or Route Variation (Link)	Relevant Alternative Routes or Route Variation(s)
		Sufficient Size	Naturalness	Solitude	Primitive and Unconfined Recreation				
Wyoming									
Bureau of Land Management Rawlins Field Office									
There are no lands with inventoried wilderness characteristics within the study corridor for Rawlins Field Office.									
Colorado									
Bureau of Land Management Grand Junction Field Office									
Spring Canyon	8,884	✓	✓	✓	✓	No	Yes C197	All COUT BAX alternative routes	
Bureau of Land Management Little Snake Field Office									
Lower Little Snake (Unit 406)	10,312	✓	✓	✓	✓	Yes – Visual	Yes C71, C72	WYCO-B, WYCO-C and WYCO-F and route variations	
Simsberry Draw (Unit 409)	6,343	✓	✓	✓	✓	Yes – Visual	Yes C91	WYCO-B, WYCO-C and WYCO-F and route variations	
West Sevenmile (Unit 353)	6,323	✓	✓	✓	✓	Yes – Visual	Yes C61	WYCO-B, WYCO-C and WYCO-F and route variations	
Bureau of Land Management White River Field Office									
Bluejay Creek (Unit 7)	9,895	✓	✓	✓	✓	Yes – Geological and Visual	Yes C196	All COUT BAX alternative routes	
Coal Oil Gulch (Unit 22)	9,376	✓	✓	✓	✓	Yes – Scenic	Yes C186	COUT-A, COUT-B; and COUT-C and route variations; COUT-H and COUT-I	
Coal Ridge (Unit 21)	9,021	✓	✓	✓	✓	Yes – Scenic	Yes C177	All COUT BAX alternative routes	
Gilsonite Hills (Unit 31)	11,948	✓	✓	✓	✓	No	Yes C195	All COUT BAX alternative routes	
Oil Spring Mountain Wilderness Study Area Adjacent (Unit 35)	8,213	✓	✓	✓	✓	No	Yes C196	All COUT BAX alternative routes	

TABLE 3-213 INVENTORIED NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICS IN THE STUDY CORRIDOR									
Unit ID/Name	Unit Size (Acres)	Wilderness Inventory Characteristic Values					Supplemental Values	Crossed by Reference Centerline Route or Route Variation (Link)	Relevant Alternative Routes or Route Variation(s)
		Sufficient Size	Naturalness	Solitude	Primitive and Unconfined Recreation				
Whiskey Creek (Unit 2)	5,205	✓	✓	✓	✓	Yes – Scenic and Geological	Yes C196	All COUT BAX alternative routes	
Utah									
Bureau of Land Management Fillmore Field Office									
There are no lands with inventoried wilderness characteristics within the study corridor for Fillmore Field Office.									
Bureau of Land Management Moab Field Office									
Floy Canyon	9,983	✓	✓	✓	✓	Yes – Scenic, Cultural, and Endangered Species	Yes U487	All COUT BAX alternative routes	
Harley Dome	5,300	✓	✓	✓		No	Yes U490	All COUT BAX alternative routes	
Bureau of Land Management Price Field Office									
Desolation Canyon	86,453	✓	✓	✓	✓	No	Yes U488, U489, U734	COUT BAX-C; COUT BAX-E	
Lost Spring Wash	32,100	✓	✓	✓	✓	Yes – Cultural (Old Spanish National Historic Trail)	Yes U730, U734	COUT BAX-B; COUT BAX-C	
Never Sweat Wash	29,200	✓	✓	✓	✓	Yes – Cultural	Yes U734	COUT BAX-C	
Price River	104,200	✓	✓	✓	✓	Yes – Historical	Yes U495	COUT BAX-E	
Bureau of Land Management Richfield Field Office									
There are no lands with inventoried wilderness characteristics within the study corridor for Richfield Field Office.									
Bureau of Land Management Vernal Field Office									
There are no lands with inventoried wilderness characteristics within the study corridor for Vernal Field Office.									

3.2.14.5 Results

The summary of the inventories of wilderness areas and WSAs and non-WSA lands with wilderness characteristics is presented in Tables 3-212 and 3-213. The results of the effects analysis are described in this section and should be reviewed in conjunction with the resource inventory map (MV-18). Table S-1c presents a comparison of results of the effects analysis for the alternative routes. Potential visual impacts on wilderness areas and WSAs discussed in the Section 3.2.16.

3.2.14.5.1 No Action Alternative

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

3.2.14.5.2 Impacts Common to All Action Alternatives

There are no wilderness areas, WSAs, or non-WSA lands with wilderness characteristics managed and protected by a BLM or USFS land-use related plan that would be crossed by an alternative or route variation being considered. Thus, no effects on wilderness areas, WSAs, or management and protection prescriptions for non-WSA lands with wilderness characteristics would be anticipated from implementation of the Project.

3.2.14.5.3 345-kilovolt Ancillary Transmission Components

There are no non-WSA lands with wilderness characteristics located in the vicinity of the 345kV ancillary transmission components. Thus, no effects on non-WSA lands with wilderness characteristics would be anticipated from implementation of the 345kV ancillary transmission components of the Project.

3.2.14.5.4 500-kilovolt Transmission Line Components

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

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Alternative WYCO-B and route variations in Wyoming do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Wyoming)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative WYCO-B and route variations in Wyoming.

Affected Environment (Colorado)

Alternative WYCO-B and route variations would cross West Sevenmile, Lower Little Snake, and Simsberry Draw non-WSA lands with wilderness characteristics in the BLM Little Snake Field Office.

West Sevenmile (Unit 353) inventoried area according to the wilderness criteria forms (available on the BLM Little Snake website), meets the minimum 5,000 acre size requirement 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 inventoried area 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 extremely visually segregated from the rest of the inventoried area. There are no current manmade land uses on or immediately adjacent to (other than recreation) the inventoried area, adding to the extreme quiet and sense of solitude.

Lower Little Snake (Unit 406) inventoried area according to the wilderness criteria forms (available on the BLM Little Snake website), meets the minimum of 5,000 acre size requirement and is dominated by a north to south high-relief ridgeline to the west that steps down to a series of plateaus that slope down to the Little Snake River Valley floor and river bed. The eastern side of the inventoried area slopes up from the Little Snake River to moderately elevated plateaus in the northern and central portions and then follows the river for the remaining sections. 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 northern portion of the inventoried area also allows for opportunities to find solitude. The Little Snake River Valley and northern portion of the inventoried area has a variety of rangeland and agricultural activities and infrastructure including ranches and agricultural fields, as well as recreation activities including great hunting opportunities.

Simsberry Draw (Unit 409) inventoried area according to the wilderness criteria forms (available on the BLM Little Snake website), meets the minimum of 5,000 acre size requirement 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 inventoried area offers outstanding opportunities for primitive and unconfined recreation due to available access, beautiful scenery, and evidence of wildlife, hunting opportunities, as well as alcoves that provide for seclusion. Scenic values 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 inventoried area.

Environmental Consequences (Colorado)

Alternative WYCO -B

Alternative WYCO-B would cross the eastern portion of the West Sevenmile inventory area, separating the inventory area into two portions. 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 inventoried area. Long-term effects from the Project would be the reduced size of the inventoried area and the influences of the Project infrastructure, including the vertical prominence of transmission structures, on the area's wilderness characteristics. Effects on this inventory area would be reduced if the Project was located outside of the inventory area. If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11), as well as using overland access (Selective Mitigation Measure 13), would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative WYCO-B would cross a small portion of the Lower Little Snake inventory area, bisecting the eastern portion of the inventoried area from the western portion. The western portion of the inventoried area would still meet the 5,000 acre threshold but the eastern portion would not meet the size requirements. 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 along the Little Snake River. The influences of the Project on the wilderness characteristics would be limited in the core area of this inventoried area, northwest of the Little Snake River due to topographic screening offered by Sevenmile Ridge. By spanning this portion of the inventory area, effects on wilderness values could be reduced (Selective Mitigation Measure 9).

Alternative WYCO-B would bisect the Simsberry Draw inventoried area 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 inventoried area. Long-term effects from the Project would dominate 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. If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics but the unit would still not meet the 5,000-acre wilderness criteria.

Alternative WYCO –B Route Variations ((WYCO-B-1, WYCO-B-2, and WYCO-B-3)

The effects on non-WSA lands with wilderness characteristics would be the same as Alternative WYCO-B, except for Route Variation WYCO-B-1 that would cross a large portion of the eastern half of West Sevenmile inventoried area, which would further reduce the size, dominate the wilderness values and effect wilderness characteristics of the area.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Alternative WYCO-C and route variations in Wyoming do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Wyoming)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative WYCO-C and route variations in Wyoming.

Affected Environment (Colorado)

Alternative WYCO-C and route variations in Colorado cross the same non-WSA lands with wilderness characteristics as Alternative WYCO-B and route variations.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics crossed by Alternative WYCO-C and route variations would be the same as Alternative WYCO-B and route variations.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Alternative WYCO-D and route variation in Wyoming do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Wyoming)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative WYCO-D and route variation in Wyoming.

Affected Environment (Colorado)

Alternative WYCO-D and route variation in Colorado does not cross non-WSA lands with wilderness characteristics.

Environmental Consequences (Colorado)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative WYCO-D and route variation in Colorado.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Alternative WYCO-F and route variations in Wyoming do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Wyoming)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative WYCO-F and route variations in Wyoming.

Affected Environment (Colorado)

Alternative WYCO-F and route variations in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternative WYCO-B and Alternative WYCO-C including route variations.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics that would be crossed by Alternative WYCO-F and route variations would be the same as Alternative WYCO-B including route variations.

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

Alternative COUT BAX-B

Affected Environment (Colorado)

Non-WSA lands with wilderness characteristics that would be crossed by the Project include Bluejay Creek, and Whiskey Creek, Coal Ridge, Gilsonite Hills, Oil Spring Mountain, in the BLM White River Field Office, and Spring Canyon in the BLM Grand Junction Field Office.

Coal Ridge (Unit 02) inventory area, according to the wilderness criteria forms (available on the BLM White River website), meets the minimum 5,000-acre size requirement. The landscape 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 inventory area has been modified by natural processes and topographic features allow for opportunities of solitude. Recreational activities include hunting, hiking, camping, climbing, and wildlife observation. The inventory area can attribute its distinct scenic value to the abrupt ridge topography that is visually unique in this region.

Gilsonite Hills (Unit 31) inventory area, according to the wilderness criteria forms (available on the BLM White River website), meets the minimum 5,000-acre size requirement. The landscape has plateaus, shallow draws, and canyons with mainly grass and shrub land vegetation in the lower elevations and pinyon-juniper at higher elevations. The 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 within the inventory area include hiking, horseback riding, primitive camping, and areas to study rock formations. Please note, the eastern edge of this area is overlain with a utility corridor designated in the White River Field Office RMP.

Oil Spring Mountain (Unit 35) inventory area, according to the wilderness criteria forms (available on the BLM White River website), meets the minimum 5,000-acre size requirement. The inventory area 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 inventory area boundary. In 2013 the Wild Rose Fire burned more than 1,000 acres on west side and down the slope from Texas Mountain in the inventory area. Suppression tactics resulted in the area still largely appearing natural after the fire was extinguished. The inventory area is adjacent to the Oil Spring Mountain WSA. Naturalness of the inventory area has been slightly influenced by signs of minor range improvements, reclaimed roads and oil and gas well pads. Opportunities for solitude occur within 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 inventory area. The inventory area has moderate to high density of cultural sites and important habitat for various wildlife. Please note, the western edge of this area is overlain with a utility corridor designated in the White River Field Office RMP.

Bluejay Creek (Unit 07) inventory area, according to the wilderness criteria forms (available on the BLM White River website), meets the minimum 5,000-acre size requirement 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 inventory area. The Oil Spring Mountain WSA is adjacent to the eastern portion of the inventory area. Naturalness, solitude, and primitive and unconfined types of recreation are influenced by lands uses including several oil and gas wells and recreational activities (hunting, camping, hiking, OHV, and wildlife observation). The inventory area has visually distinct and unique horizontally bedded tan and reddish sandstone cliff

formations. The inventory area may also contain a geological value for natural gas extraction. Please note, the northwestern edge of this area is overlain with a utility corridor designated in the White River Field Office RMP.

Whiskey Creek (Unit 02) inventory area according to the wilderness criteria forms (available on the BLM White River website), meets the minimum 5,000-acre size requirement and is characterized by extremely steep terrain. The topography is high-relief with sandstone cliffs at the base of the unit that slope quickly up toward steep forested slopes and turn to steep ridgelines at the middle of the inventory area. Vegetation in the lower elevations is sage and mixed grasses with dense spruce and pinyon-juniper forests in the higher elevations. With private land surrounding almost the entire inventory area, in addition to the steep topography, access to the inventory area is severely limited. Naturalness of the area is has minor influences by lands uses including oil and gas development and range improvement activities (cattle ranches). The steep terrain and limited access to the inventory area allow for opportunities of solitude. The inventory area contains scenic qualities attributed to the unique topographical area. The inventory area may also contain an outstanding geological value for oil and gas development. Please note, the southwestern edge of this area is overlain with a utility corridor designated in the White River Field Office RMP.

Spring Canyon inventory area according to the wilderness criteria forms, (available on the BLM Grand Junction website), meets the minimum 5,000-acre size requirement and is located within the Book Cliffs with elevations ranging from 8,100 feet in the northern portion of the inventory area to 5,000 feet in the southeastern portion of the inventory area along South Canyon. Rising and falling slopes, associated with a number of small drainages, creates coverage topographically which provides opportunities for solitude. Vegetation in the inventory area is primarily a mix of pinyon-juniper, mountain shrub mix, serviceberry, and Gambel oak with Douglas fir in the higher elevations. Naturalness, solitude are slightly influenced by range management and recreation activities. Primitive and unconfined types of recreation include hunting and OHV. The majority of the inventory area is undeveloped and natural, offering opportunities for solitude. In the future, this could change with 99% of the inventory area leased for oil and gas development. Please note, the western edge of this area is overlain with a utility corridor designated in the White River Field Office RMP.

Environmental Consequences (Colorado)

Alternative COUT BAX-B would cross the western portion of Coal Ridge inventory area. Even with removing a portion of the inventory area, the remaining portion 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 would include influencing the areas wilderness characteristics along the western edge of Coal Ridge. There would be reduced effects on wilderness characteristics within the core of the inventoried area due to the topographic screening offered by Coal Ridge. Effects on the wilderness values for this inventory area could be reduced if the Project was located outside of the inventory area or where views from the core area would be further screened by topography (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative COUT BAX-B would cross the eastern edge Gilsonite Hills inventory area. Even with the Project crossing the edge of inventory area, 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 eastern edge of the inventory area would include further influencing and dominating of wilderness values in this area. Due to the highly dissected terrain in this area that would screen views of the Project, the influence of the Project into the core area would be limited. Effects on the wilderness values for this inventory area could be reduced if the Project was located east of Dragon Road instead of crossing the road twice and traversing this inventoried area (Selective Mitigation Measure 7).

Alternative COUT BAX-B would cross the western edge of the Oil Spring Mountain (addition) inventoried area. Even with the Project crossing the western edge of the inventory area, 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 and dominating wilderness values of this portion of the inventory area. Effects on these wilderness values could be reduced if the Project was sited farther to the west outside of this inventoried area (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11), as well as using overland access (Selective Mitigation Measure 13), would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative COUT BAX-B would cross the northwestern edge of the Bluejay Creek inventory area. Even with the Project crossing the northwestern edge of the inventory area, 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 further influence wilderness values of this area adjacent to existing oil and gas development and cherry stem roads. Effects on these wilderness values could be reduced if the Project was sited farther to the northwest outside of this inventoried area (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative COUT BAX-B would cross the western edge of the Whiskey Canyon inventory area. Even with the Project crossing the western edge of the inventory area, 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 and dominating of wilderness values of this area adjacent to a series of pipelines encroaching on the eastern edge of the inventory area. Effects on these wilderness values could be reduced if the Project was sited farther to the west outside of this inventoried area (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11), as well as using overland access (Selective Mitigation Measure 13),

would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative COUT BAX-B would cross the western edge of the Spring Canyon inventory area. Even with the Project crossing the western edge of the inventory area, the area would still meet the 5,000 acre size requirement. Short term effects from the Project to the naturalness, solitude, and 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 and dominating of wilderness values of this area. Effects on these wilderness values could be reduced if the Project was sited farther to the west outside of this inventoried area (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11), as well as using overland access (Selective Mitigation Measure 13), would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Affected Environment (Utah)

Alternative COUT BAX-B crosses areas with inventoried wilderness characteristics in the BLM Moab and Price Field Offices including: Harley Dome (Moab Field Office), Floy Canyon (Moab Field Office), and Lost Spring Wash (Price Field Office).

Harley Dome inventoried area, according to the wilderness criteria forms, (available on the BLM Moab Field Office website), meets the minimum 5,000-acre size requirement and is relatively flat and treeless with gently rolling valleys. The area's boundary roads receive little traffic but it is important to note that I-70 is located in proximity to the southern boundary of this inventoried area. The low hills and drainages provide opportunities for solitude, especially where views of I-70 and adjacent modification are screened by topography. Opportunities for primitive and unconfined recreation are minimal as this area is not a recreation destination because of limited access to water. No supplemental values were identified in this inventoried area. Please note, the southeastern portion of this area is overlain with a utility corridor designated in the Moab Field Office RMP.

Floy Canyon inventoried area, according to the wilderness criteria forms, (available on the BLM Moab Field Office website), meets the minimum 5,000-acre size requirement 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 all of this inventoried area 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 which screen views of modifications outside of this area and allow visitors to experience a sense of isolation and remoteness. Primitive recreation opportunities in this inventoried area 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. Please note, the southwestern portion of this area is overlain with a utility corridor designated in the Moab Field Office RMP.

Lost Spring Wash inventoried area meets the minimum 5,000-acre size requirement and is 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 a less visually striking extension of the San Rafael Reef which forms the eastern boundary of this inventoried area. Except for a few roads which traverse this area (excluded from the boundary of the inventoried area), the Green River Cutoff Road which separates this area from the adjacent Never Sweat Wash inventoried area, and an existing 345kV paralleling the area's

western edge, the area generally appears natural. Opportunities for solitude are available in this inventoried area due to the enclosed setting associated with the washes, where views of adjacent areas are screened by topography. The most apparent areas for primitive recreation opportunities are located adjacent to the Green River Cutoff Road, Lost Spring Wash, and Cottonwood Wash, but due to the opportunity for solitude in the majority of this area, primitive recreation could occur throughout the inventoried area.

Environmental Consequences (Utah)

Alternative COUT BAX-B would cross the southeastern portion of the Harley Dome inventory area bisecting this portion of the area from the core area farther to the north. The remaining portion of the inventoried area to the north would no longer meet the 5,000-acre size requirement unless the Project was sited farther to the south where a contiguous area could meet this requirement. Please note that the Project is located within a Moab Field Office designated utility corridor where this inventoried area is traversed. 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 not meeting the area's size requirements as well as influencing, and potentially dominating, the wilderness characteristics along the southeast portion of this inventoried area. Due to limited screening opportunities where the Project is located, the influence of the Project into the core area would further modify these characteristics. Effects on these wilderness values could be reduced if the Project were located adjacent to I-70 (Selective Mitigation Measure 8). Minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative COUT BAX-B would cross the southern portion of the Floy Canyon inventory area 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 southern portion would not meet this size requirement. Please note that the Project is located within a Moab Field Office designated utility corridor where this inventoried area is traversed. 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 as intact as the area north of this mesa. Effects on these wilderness values could be reduced if the Project were colocated with the existing rail line and I-70 farther to the south, which would consolidate disturbances as viewed from this inventoried area (Selective Mitigation Measure 7). Minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Alternative COUT BAX-B would cross the southwestern portion of the Lost Spring Wash inventory area, 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 not meet this size requirement. Please note that the Project is located within a Price Field Office designated utility corridor where this inventoried area is traversed. 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 and locally dominating wilderness characteristics adjacent to Cottonwood Wash where these values have been

indirectly influenced by the existing transmission line. Effects on these wilderness values could be reduced if the Project were colocated with the existing transmission line, which would further consolidate disturbances as viewed from this inventoried area (Selective Mitigation Measure 8). Minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics but the southwestern portion of the unit would still not meet the 5,000 acre wilderness criteria.

Alternative COUT BAX-C

Affected Environment (Colorado)

Alternative COUT BAX-C in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics that would be crossed by Alternative COUT BAX-C would be the same as Alternative COUT BAX-B.

Affected Environment (Utah)

The inventory described for the Harley Dome, Floy Canyon, and Lost Spring Wash non-WSA lands with wilderness characteristics would be the same as Alternative COUT BAX-B. Additionally, the Project would cross the Desolation Canyon and Never Sweat Wash inventoried areas in the BLM Price Field Office.

Desolation Canyon inventoried area meets the minimum 5,000-acre size requirement 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 level to rolling in nature, there are limited opportunities to experience solitude except within small enclosed landscapes associated with draws descending from the Book Cliffs. There are limited opportunities for primitive recreation within this area but an important value are the views from the adjacent Desolation Canyon WSA, whose boundary is defined by the top edge of the Book Cliffs, where recreationists have expansive views across this area and into the San Rafael Swell.

Never Sweat Wash inventoried area meets the minimum 5,000-acre size requirement and is characterized by rolling and dissected terrain typical of the San Rafael Swell and along the western edge, a series of escarpments which descend into Buckhorn Flat. Other than the Green River Cutoff Road, which forms the southern boundary of this inventoried area, there are limited modifications and the area generally appears natural. Opportunities for solitude are available in this inventoried area 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, but due to the opportunity for solitude in the majority of this area, primitive recreation could occur throughout the inventoried area.

Environmental Consequences (Utah)

Effects on the Harley Dome and Floy Canyon non-WSA lands with wilderness characteristics would be the same as Alternative COUT BAX-B.

Alternative COUT BAX-C would cross the western edge of the Desolation Canyon inventory area bisecting a portion of the area from the core area farther to the east. The remaining portion of the inventoried area to the east would meet the 5,000-acre size requirement but the western 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 and beginning to dominate the area's wilderness characteristics that, due to limited screening opportunities, would extend the influence of the Project further into the core of the area. Effects on these wilderness values could be reduced if the Project were colocated with U.S. Highway 6, a designated scenic road, to limit the area modified by the Project within this inventoried area (Selective Mitigation Measure 7). Minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics but the western edge of the unit would still not meet the 5,000 acre wilderness criteria.

Alternative COUT BAX-C would cross the northern portion of the Lost Spring Wash inventory area bisecting a portion of the area from the core area farther to the south. The remaining portion of the inventoried area 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 further influencing and locally dominating wilderness characteristics adjacent to the Green River Cutoff Road, which indirectly influences these values but does not directly impact the area's wilderness characteristics. Minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics but the northern portion of the unit would still not meet the 5,000 acre wilderness criteria.

Alternative COUT BAX-C would cross the southern portion of the Never Sweat Wash inventory area 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 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 and locally dominating wilderness characteristics adjacent to the Green River Cutoff Road, which indirectly influences these values but does not directly impact the area's wilderness characteristics. Minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics but the southern portion of the unit would still not meet the 5,000 acre wilderness criteria.

Alternative COUT BAX-E

Affected Environment (Colorado)

Inventoried Non-Wilderness Study Areas Lands with Wilderness Characteristics (including Natural Areas)

Alternative COUT BAX-E in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternatives COUT BAX-B and COUT BAX-C.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics that would be crossed by Alternative COUT BAX-E would be the same as Alternatives COUT BAX-B and COUT BAX-C.

Affected Environment (Utah)

The inventory described for the Harley Dome, Floy Canyon, and Desolation Canyon non-WSA lands with wilderness characteristics would be the same as Alternatives COUT BAX-B and COUT BAX-C. Additionally, the Project would cross the Price River inventory area in the BLM Price Field Office.

Price River inventoried area meets the minimum 5,000-acre size requirement 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 which dominates the character of the northern portion of this area. A series of roads excluded from the boundary of this inventoried area 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 inventoried area, there are opportunities for solitude and primitive recreation throughout the area. Recreation opportunities are most apparent along the Price River and on Cedar Mountain, but due to the opportunity for solitude in the majority of this area, primitive recreation could occur throughout the inventoried area.

Environmental Consequences (Utah)

Effects on the Harley Dome and Floy Canyon non-WSA lands with wilderness characteristics would be the same as Alternative COUT BAX-B. Since this alternative route would traverse the Desolation Canyon area for approximately twice as many miles as Alternative COUT BAX-C, effects would be similar but more intense than those described for Alternative COUT BAX-C.

Alternative COUT BAX-E would cross the northern portion of the Price River inventory area bisecting a portion of the area from the core area farther to the south. The remaining portion of the inventoried area 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 within the core of the inventoried area due to topographical screening offered by the canyon walls adjacent to the Price River. Effects on these wilderness values could be reduced if the Project were sited farther to the north, outside of this inventoried area (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11 would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and

primitive recreation wilderness characteristics but the northern portion of the unit would still not meet the 5,000 acre wilderness criteria.

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

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment (Colorado)

The non-WSA lands with wilderness characteristics that would be crossed include Coal Oil Gulch in the BLM White River Field Office.

Coal Oil Gulch (Unit 022) inventory area, according to the wilderness criteria forms (available on the BLM White River Field Office website), meets the minimum 5,000 acre size requirement. The topography to north and west consist of moderate relief landscape with sometimes significant valleys and escarpments with deep streambed channels. Vegetation consists of mixed pinyon-juniper with sagebrush in higher elevations and mixed sagebrush and grasses in the lower elevations. Naturalness and solitude are slightly influenced by range improvements and historic oil and gas activities. The southern portion of inventory area lacks a sense of solitude due to the presence of oil and gas development including access routes associated with this development. Primitive and unconfined types of recreation include hunting, hiking, camping, OHV, shooting, mountain biking, and wildlife observation. This inventory area has excellent scenic appeal with vast, expansive views in the northern and western portions of the area. Please note, the northern portion of this area is overlain with a utility corridor designated in the White River RMP and WWEC.

Environmental Consequences (Colorado)

Alternative COUT-A and Route Variation (COUT-A-1)

Alternative COUT-A would cross the northern edge of the Coal Oil Gulch inventory area. Even with the project crossing the northern edge of the inventory area, the area would still meet the 5,000-acre size requirement. Short term effects from the Project to the naturalness, solitude, and 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 northern edge of the inventory area would be the influences on the wilderness characteristics for this area. Due to the proximity of the two existing transmission lines, in addition to the Project, the wilderness values along the northern edge would be furthered influenced, with the core of the inventoried area being minimally affected. Effects on these wilderness values could be reduced if the Project was sited farther to the north outside of this inventoried area (Selective Mitigation Measure 7). If the transmission line could not be located outside of the inventoried area, matching transmission line spans with the two existing transmission lines (Selective Mitigation Measure 8), minimizing vegetation clearing (Selective Mitigation Measure 4), new and improved accessibility to the unit (Selective Mitigation Measure 5), and right-of-way clearing (Selective Mitigation Measure 11) would reduce the extent or magnitude of effects on the inventoried naturalness, solitude/unconfined, and primitive recreation wilderness characteristics.

Affected Environment (Utah)

Alternative COUT-A and route variation in Utah do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Utah)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative COUT-A and route variation in Utah.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment (Colorado)

Alternative COUT-B and route variations in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternative COUT-A and its route variation.

Environmental Consequences (Colorado)

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Potential effects on non-WSA lands with wilderness characteristics that would be crossed by Alternative COUT-B and route variations would be the same as Alternative COUT-A and its route variation.

Affected Environment (Utah)

Alternative COUT-B and route variations in Utah do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Utah)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative COUT-B and route variations in Utah.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Affected Environment (Colorado)

Alternative COUT-C and route variations in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternatives COUT-A and COUT-B and associated route variations.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics crossed by Alternative COUT-C and route variations would be the same as Alternatives COUT-A and COUT-B and associated route variations.

Affected Environment (Utah)

Alternative COUT-C and route variations in Utah do not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Utah)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative COUT-C and route variation in Utah.

Alternative COUT-H (Applicant Preferred Alternative)

Affected Environment (Colorado)

Alternative COUT-H in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternatives COUT-A, COUT-B, and COUT-C and associated route variations.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics crossed by Alternative COUT-H and route variations would be the same as Alternatives COUT-A, COUT-B, and COUT-C and associated route variations.

Affected Environment (Utah)

Alternative COUT-H in Utah does not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Utah)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative COUT-H in Utah.

Alternative COUT-I

Affected Environment (Colorado)

Alternative COUT-I in Colorado would cross the same non-WSA lands with wilderness characteristics as Alternatives COUT-A, COUT-B, COUT-C, and COUT-H and associated route variations.

Environmental Consequences (Colorado)

Potential effects on non-WSA lands with wilderness characteristics crossed by Alternative COUT-I would be the same as Alternatives COUT-A, COUT-B, COUT-C, and COUT-H and associated route variations.

Affected Environment (Utah)

Alternative COUT-I in Utah does not cross any non-WSA lands with wilderness characteristics.

Environmental Consequences (Utah)

No effects on non-WSA lands with wilderness characteristics would occur for Alternative COUT-I in Utah.

3.2.14.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Siting Area A – Powder Wash

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area A.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area A.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B contains the following wilderness areas, WSAs, and non-WSA lands with wilderness characteristics:

- BLM Little Snake Field Office West Sevenmile Non-WSA Lands with Wilderness Characteristics area (located in the northwestern portion of Siting Area B);
- BLM Little Snake Field Office Sevenmile Draw Non-WSA Lands with Wilderness Characteristics area (located in the western portion of Siting Area B);
- BLM Little Snake Field Office Lower Little Snake Non-WSA Lands with Wilderness Characteristics area (located in the central portion of Siting Area B);
- BLM Little Snake Field Office Simsberry Draw Non-WSA Lands with Wilderness Characteristics area (located in the southern 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 non-WSA lands with wilderness characteristics unit. However, if a series compensation station were located within a non-WSA lands with wilderness characteristics unit, it would reduce a unit up to 160 acres. All units in Siting Area B would still meet the size criteria, even with this loss of acreage. Impacts on the non-WSA land with wilderness characteristics unit's naturalness, outstanding solitude and primitive and unconfined 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 values.

Siting Area C – Maybell

Affected Environment

Siting Area C contains the following wilderness areas, WSAs, and non-WSA lands with wilderness characteristics:

- BLM Little Snake Field Office Peck Mesa WSA adjacent non-WSA lands with wilderness characteristics area (located in the northwestern portion of Siting Area C);
- BLM Little Snake Field Office Cross Mountain WSA adjacent non-WSA lands with wilderness characteristics area (located in the central and western portions of Siting Area C);
- BLM Little Snake Field Office Twelvemile Mesa Non-WSA lands with wilderness characteristics area (located in the southwestern corner of Siting Area C).

Environmental Consequences

Once a specific series compensation station location has been identified, effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics described above will be analyzed.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area A.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area A.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

Siting Area D – Bell Rock

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area D.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area D.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area A.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics in Siting Area A.

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

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

Siting Area G – Green River

Affected Environment

Siting Area G contains the following wilderness areas, WSAs, and non-WSA lands with wilderness characteristics:

- BLM Price Field Office Desolation Canyon Non-WSA Lands with Wilderness Characteristic area (located in the north eastern 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 non-WSA lands with wilderness characteristics unit. However, if a series compensation station were located within a non-WSA lands with wilderness characteristics unit, it would reduce a unit up to 160 acres. All units in Siting Area B would still meet the size criteria, even with this loss of acreage. Impacts on the non-WSA land with wilderness characteristics unit's naturalness, outstanding solitude and primitive and unconfined 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 values.

Alternative COUT-A and Route Variation (COUT-A-1)

Siting Area F – Roosevelt

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area F.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area F.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area F.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area F.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Siting Area E – Bonanza

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area E.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area E.

Alternatives COUT-H (Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area E.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area E.

Alternative COUT-I

Siting Area E – Bonanza

Affected Environment

There are no wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area E.

Environmental Consequences

There are no effects on wilderness areas, WSAs, and non-WSA lands with wilderness characteristics areas in Siting Area E.

3.2.15 Inventoried Roadless Areas and Unroaded/Undeveloped Areas

3.2.15.1 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 non-WSA lands with wilderness characteristics, which are described in Section 3.2.14. 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 forest has guidelines for implementation of ROS criteria in each of the LRMPs.

3.2.15.1.1 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 within 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” (USFS 2001). The rule established criteria for identifying IRAs and prescribed management for road construction and timber harvesting. Pursuant to the *Roadless Area Review and Evaluation (RARE) 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 (USFS 2001).

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 within 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.

3.2.15.2 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.

3.2.15.3 Regional Setting

Portions of the USFS-administered lands located within 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 within these national forests, but not necessarily within 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 within the boundaries of either an IRA or unroaded/undeveloped area within the 2-mile-wide alternative route study corridors. IRAs and unroaded/undeveloped areas within the Project's 2-mile-wide alternative route study corridors occur only in Utah.

3.2.15.4 Study Methodology

3.2.15.4.1 Inventory

There are 21 IRAs and 12 unroaded/undeveloped areas within the area crossed by the 2-mile-wide alternative route study corridors, as presented in Table 3-214 and a graphic representation of the units and the impacts identified during analysis are depicted on MV-19a and MV-19b.

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. Five unroaded/undeveloped areas in the Ashley National Forest (totaling 83,421 acres) and seven unroaded/undeveloped areas in the Manti-La Sal National Forest (totaling 125,645 acres) are 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 3 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.

TABLE 3-214 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	30,355	1,022	No	No
0401010	21,869	7,625	135	10.1
0401011	30,039	7,662	35	5.6
0401012	46,363	4,412	5 or 3 ¹	1.2
0401013	11,900	1,734	1	0.7
Manti-La Sal National Forest				
Boulger-Black Canyon	14,142	976	No	No
Cedar Knoll	22,484	894	0.1	0.1
Coal Hollow	6,265	1,731	No	No
East Mountain	6,265	2,221	No	No
Nuck Woodward	12,072	52	No	No
Oak Creek	16,756	682	No	No
Sanpitch	29,108	464	No	No
Uinta National Forest				
Chipman Creek (418008)	9,360	1,930	84 or 0.1 ¹	3.1
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	2,763	No	No
Solider Summit (418019)	6,848	988	0.1	0.3
Hop Creek Ridge (418021)	6,250	146	No	No
Golden Ridge (418028)	33,978	973	No	No
Nephi (418029)	15,662	141	No	No
Unroaded/Undeveloped Areas				
Ashley National Forest				
Cottonwood	25,989	7,814	34	5.6
First Canyon	6,748	1,227	No	No
Mill Hollow	6,131	1,591	No	No
Right Fork Indian Canyon	37,473	37,473	0.3	0.1
Sowers Canyon East	17,028	17,028	117	8.7
Manti-La Sal National Forest				
Boulger-Black Canyon	24,432	512	No	No
Cedar Knoll	28,351	2,398	30	1.2
Coal Hollow	7,095	1,761	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	7,537	805	No	No
NOTES:				
¹ Route variations result in different acres or miles crossed.				

Any IRA or unroaded/undeveloped area crossed by the Project’s associated right-of-way (250-foot-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.

3.2.15.4.2 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 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 3-215). 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 3-215 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ■ Areas where the Project would cross 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	<ul style="list-style-type: none"> ■ Areas where the Project would cross 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 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.

TABLE 3-215 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS	
Level of Impacts	Description
Low	<ul style="list-style-type: none"> ▪ 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 within 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 would also not preclude management of the area for roadless characteristics or wilderness attributes.
<p>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</p>	

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 nonnative 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 25 and 13 percent of federally listed animal and plant 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 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. 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 in terms of the criteria presented in Table 3-215, which reflect impacts on roadless characteristics and wilderness attributes (Section 3.2.15.5).

Wilderness Quality or Attributes Identified for Unroaded/Undeveloped Areas

It is important to note 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-19a and MV-19b) 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 within 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 presence of others. 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 in terms of the criteria presented in Table 3-215, which reflect impacts on these wilderness attributes (Section 3.2.15.5).

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. 5,000 acres is the size threshold that 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 above in Table 3-215.

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 3-216 and 3-217, respectively.

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 or 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.
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 3-216		
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 3-217		
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, therefore 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 inventoried roadless area or 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.

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 3-218).

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	High/Moderate/ Low
Unroaded/Undeveloped Areas	High/Moderate	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, 16	High/Moderate/ Low
NOTES: ¹ The level of initial impacts for each inventoried roadless area and unroaded/undeveloped area was evaluated on based on the criteria identified in Table 3-215. 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.			

3.2.15.5 Results

IRAs and unroaded/undeveloped areas crossed by the proposed right-of-way of alternative routes considered for the Project are presented in Table 3-214.

3.2.15.5.1 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.

3.2.15.5.2 Impacts Common to All Action Alternatives

There would be no impacts common to all action alternatives.

3.2.15.5.3 345-kilovolt Ancillary Transmission Components

For the 345kV ancillary transmission components, there would be no impacts on IRAs and unroaded/undeveloped areas.

3.2.15.5.4 500-kilovolt Transmission Line Components

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

Alternatives WYCO-B (Applicant Preferred Alternative) (WYCO-B-2, Agency Preferred Alternative), WYCO-C, WYCO-D, WYCO-F and Route Variations

Affected Environment and Environmental Consequences (Wyoming and Colorado)

The proposed rights-of-way for the WYCO alternative routes and route variations 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 does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-B does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-B crosses the following unroaded/undeveloped area in the Manti-La Sal National Forest:

- East Mountain Unroaded/Undeveloped Area would be crossed by Link U629 (refer to MV-19b) occupying 1 acre within 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.

Environmental Consequences (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-B does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-B 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 structures adjacent to the area. Note, views of the Project from the Left Fork of Huntington National Recreation Trail, located 6 miles away, would be screened by topography.

Alternative COUT BAX-C

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT BAX-C does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-C does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-C 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 does not cross IRAs.

Unroaded/Undeveloped Areas

Impacts on unroaded/undeveloped areas 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 does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT BAX-E does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-E crosses the following unroaded/undeveloped areas in the Manti-La Sal National Forest:

- Oak Creek Unroaded/Undeveloped Area would be crossed by Link U600 (refer to MV-19b) occupying 44 acres with the unroaded/undeveloped area. The Project would cross 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 within 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-E does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT BAX-E 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 reestablishment of vegetation within the right-of-way and re-contouring structure work areas to reestablish 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.

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

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment and Environmental Consequences (Colorado)

The proposed rights-of-way for the Colorado portions of Alternative COUT-A and Route Variation COUT-A-1 do not cross any IRA or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-A crosses the following IRAs:

- Cedar Knoll IRA (Manti-La Sal National Forest) would be crossed by Link U621 (see MV-19b) occupying 0.1 acre within 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 (see MV-19b) occupying 0.1 acres within 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 (see MV-19b) occupying 0.6 acres with 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 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. It is important to note that 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.

The proposed right-of-way for Route Variation COUT-A-1 crosses the following IRAs:

- Cedar Knoll IRA (Manti-La Sal National Forest) would be crossed by Link U621 (see MV-19b) occupying 0.1 acre within 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.

- Chipman Creek IRA – 418008 (Uinta National Forest) would be crossed by Link U428 (see MV-19b) occupying 84 acres within 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 right-of-way for Alternative COUT-A crosses the following unroaded/undeveloped areas in the Manti-La Sal National Forest:

- Cedar Knoll Unroaded/Undeveloped Area would be crossed by Link U621 (refer to MV-19b) occupying 30 acres within 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.

The proposed right-of-way for Route Variation COUT-A-1 crosses the same unroaded/undeveloped area units as Alternative COUT-A.

Environmental Consequences (Utah)

Inventoried Roadless Areas

Alternative COUT-A

The proposed right-of-way for Alternative COUT-A crosses 0.1 mile of the Cedar Knoll IRA (Manti-La Sal National Forest) and would result in a low residual impact on the area's characteristics and qualities. Since only the Project's right-of-way would traverse the IRA, adjacent to an existing 345kV transmission line that crosses further into the IRA than the Project, there would be limited effects anticipated on natural processes in the area. Access into the IRA using Forest Road 070 –Lake Fork Road and Forest Road 126 – Blind Canyon Road could be temporary limited 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 also crosses 0.1 mile of the Chipman Creek IRA – 418008 (Uinta 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 IRA, in an area influenced by an existing 345kV transmission line, there would be limited effects on natural processes and wildlife species, including greater sage-grouse, in the area. 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 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.

Alternative COUT-A Route Variation (COUT-A-1)

Impacts on the Cedar Knoll IRA are the same as Alternative COUT-A.

Impacts on the Chipman Creek IRA are more intense than those described for Alternative COUT-A since the Project would cross the area 1,500 feet north of the existing 345kV transmission line for 3.1 miles and as such, a moderate residual impact on the area's characteristics and qualities was identified.

Recreationists accessing the southern portion of the IRA, using Forest Road 079 and Forest Road 335, could have their access limited during construction activities. Through the application of selective mitigation measures, to maximize the span length between transmission structures at these road crossings, long-term impacts on access into the IRA, as well as on these views, would be reduced. Additionally, due to the siting of the Project on Little Baldy Mountain and adjacent high points, scenic integrity would be compromised in the interior of the IRA where the existing transmission line is not visible. Habitat for wildlife species could be affected by construction, maintenance, and operation of the Project that would include habitat fragmentation, loss of habitat connectivity, and increase in predation pressure from the loss of cover for prey species. Please note the Project would not traverse any greater sage-grouse habitat and as such, there would be minimal impacts on these habitat values. To reduce potential effects on other resources in the IRA, selective mitigation measures would be applied to limit vegetation clearing in the right-of-way to the extent practicable.

Unroaded/Undeveloped Areas

Alternative COUT-A

The proposed right-of-way for Alternative COUT-A 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 1.2 miles 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 3 to 5 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 reestablishment of vegetation within the right-of-way and recontouring structure work areas to reestablish 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 temporary limited 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.

Alternative COUT-A Route Variation (COUT-A-1)

Impacts on the Cedar Knoll Unroaded/Undeveloped Area are the same as Alternative COUT-A.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment and Environmental Consequences (Colorado)

The proposed rights-of-way Colorado portions of Alternative COUT-B and route variations do not cross any IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed rights-of-way for Alternative COUT-B and route variations cross the following IRAs:

- IRA 0401010 (Ashley National Forest) would be crossed by Link U431 (refer to MV-19b) occupying 135 acres within 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, and boundary and cherry-stemmed roads. The IRA provides opportunity for solitude except for the area along Sowers Canyon and where forest roads traverse 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 within 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 (refer to MV-19b) occupying 35 acres within the IRA. The Project would traverse this area adjacent to an existing 138kV transmission line. The area contains modifications include the existing 138kV transmission line and associated cleared right-of-way, livestock grazing and range improvements, vegetation treatments, and boundary and cherry-stemmed roads. The IRA provides opportunity for solitude except for the area along Sowers Canyon and where forest roads traverse IRA due to the increased influence of man. Primitive recreation opportunities include hiking (Quitcampau Trail [Trail #101] and Mill Hollow Trail [Trail #125], snowmobiling, and ATV riding. Occupied habitat for greater sage-grouse occurs within 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 (refer to MV-19b) occupying 0.1 acre within 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.

In addition, Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 cross the following IRAs:

- Soldier Summit IRA - 418019 (Uinta National Forest) would be crossed by Link U515 (refer to MV-19b) occupying 0.1 acres within the IRA. The Project would traverse an area with limited visible existing modifications. Modifications within the IRA include limited range improvements and cherry-stemmed roads. The IRA provides opportunity for solitude except for the area along Tabbyune Road and other cherry-stemmed roads due to the increase influence of man. Primitive recreation opportunities include fishing, skiing, mountain climbing, and hiking. The IRA provides habitat for a variety of wildlife species including bald eagle and northern goshawk. No known special features are located in the area.
- IRA 0401013 (Ashley National Forest) would be crossed by Link U515 (refer to MV-19b) occupying 1 acre within the IRA. The Project would traverse an area with limited visible

modifications except for the Reservation Ridge Scenic Backway that forms the edge of the IRA. The area contains modifications including grazing/range improvements, vegetation treatments, and cherry-stemmed roads into the IRA. The IRA provides opportunities, especially in the steeply sloped canyons, for solitude due to the dense vegetation and steep terrain. Opportunities for solitude are more limited on the ridgelines due to increased use from recreationists utilizing numerous forest roads. Primitive recreation opportunities include hunting, ATV riding, and hiking (Trail #129). The IRA provides habitat for a variety of wildlife species including deer, elk, and pronghorn. No known special features are located in the area.

- IRA 0401012 (Ashley National Forest) would be crossed by Links U513 and U515 (refer to MV-19b) occupying 5 acres on Route Variation COUT-B-1 and COUT-B-3 and 3 acres on Route Variations COUT-B-2 and COUT-B-4. The Project would traverse an area with limited visible modifications except for the Reservation Ridge Scenic Backway that forms the edge of the IRA. The area contains modifications including grazing/range improvements, vegetation treatments, and cherry-stemmed roads into the IRA. The IRA provides opportunities, especially in the steeply sloped canyons, for solitude due to the dense vegetation and steep terrain. Opportunities for solitude are afforded in this area due to limited recreation pressure, the screening effects and challenge of the terrain, and vegetation screening in canyon areas where there is no motorized use. Primitive recreation opportunities include hunting, ATV riding, snowmobiling, hiking (Grass Hollow Trail [Trail #099], Wilbur Canyon Trail [Trail #094], and Left and Right Fork Lake Canyon Trails) and camping. The IRA provides habitat for a variety of wildlife species including deer, elk, and pronghorn. No known special features are located in the area.

Unroaded/Undeveloped Areas

The proposed rights-of-way for Alternative COUT-B and route variations cross the following unroaded/undeveloped areas:

- Cedar Knoll Unroaded/Undeveloped area (Manti-La Sal National Forest) would be crossed by Link U621 (refer to MV-19b) occupying 30 acres within 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 (refer to MV-19b) occupying 34 acres within 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, 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 within 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 (refer to MV-19b) occupying 117 acres within 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, 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 within 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.

In addition, Route Variation COUT-B-1 crosses the following unroaded/undeveloped area:

- Right Fork Indian Canyon Unroaded/Undeveloped Area (Ashley National Forest) would be crossed by Link U513 (refer to MV-19b) occupying 0.3 acres within the unroaded/undeveloped area. The Project would traverse an area with limited visible modifications except for the Reservation Ridge Scenic Backway that forms the edge of the unroaded/undeveloped area. The area contains modifications including grazing/range improvements, vegetation treatments, and cherry-stemmed roads into the unroaded/undeveloped area. The area provides opportunities, especially in the steeply sloped canyons, for solitude due to the dense vegetation and steep terrain. Opportunities for solitude are afforded in this area due to limited recreation pressure, the screening effects and challenge of the terrain, and vegetation screening in canyon areas where there is no motorized use. Primitive recreation opportunities include hunting, ATV riding, snowmobiling, hiking (Grass Hollow Trail [Trail #099], Wilbur Canyon Trail [Trail #094], and Left and Right Fork Lake Canyon Trails) and camping. The unroaded/undeveloped area provides habitat for a variety of wildlife species including deer, elk, and pronghorn. No known special features are located in the area.

Environmental Consequences (Utah)

Inventoried Roadless Areas

Alternative COUT-B

The proposed right-of-way for Alternative COUT-B 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 reestablishment of vegetation within the right-of-way and re-contouring structure work areas to reestablish 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 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 within the IRA. These activities could alter or disrupt natural drainage patterns in the short-term but through the reestablishment of vegetation within the right-of-way and re-contouring structure work areas to reestablish 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.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Impacts on the Cedar Knoll IRA, IRA 0401010, and IRA 0401011 are the same as Alternative COUT-B.

Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 have the same impacts on Solider Summit IRA and IRA 0401013. The proposed right-of-way for the Utah portion of these route variations cross 0.3 mile of the Solider Summit IRA (Uinta 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 IRA, there are limited effects anticipated on natural processes in the area. Opportunities for solitude in the IRA would be affected by the Project, including primitive recreation opportunities, but these effects would occur along the edge of the IRA where these opportunities are limited. Access into the IRA using Tabbyune Road could be temporary limited during construction activities but once constructed, the Project would not affect opportunities to access primitive recreation. Since only the Project's right-of-way would traverse the IRA, there would be limited effects on wildlife species and associated habitat values in the IRA.

Similar to the Solider Summit IRA, only the proposed right-of-way for these route variations cross 0.7 mile of IRA 0401013 (Ashley 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 IRA, there are limited effects anticipated on natural processes in the area. Opportunities for solitude exist in the canyons where there is limited existing influence from man and the Project would be screened from these views by the steep topography. Additionally, the Project would be located adjacent to the Reservation Ridge Scenic Backway, which intermittently enters the IRA and reduces scenic integrity of this area (discussed further in Section 3.2.16). Access into the IRA using the Reservation Ridge Scenic Backway could be temporary limited during construction activities but once constructed, the Project would not affect opportunities to access primitive recreation. Since only the Project's right-of-way would traverse the IRA, there would be limited effects on wildlife species and associated habitat values in the IRA.

The proposed right-of-way for Route Variation COUT-B-1 crosses 1.2 miles of IRA 0401012 (Ashley National Forest), considered a moderate impact on the area's characteristics and qualities. There is one area where the Project's proposed centerline crosses the IRA but no structures would be anticipated to be built in this area, only the Project's right-of-way would traverse the area, therefore there would be limited effects anticipated on natural processes in the area. Opportunities for solitude exist in the canyons where there is limited influence from man and the Project would be screened from these views by steep topography. Additionally, the Project would be located adjacent to the Reservation Ridge Scenic Backway, which intermittently enters the IRA and reduces scenic integrity of this area (discussed further in Section 3.2.16). Access into the IRA using the Reservation Ridge Scenic Backway could be temporary limited during construction activities but once constructed, the Project would not affect opportunities to access primitive recreation including access to hiking trails and access to Gray Head Peak. Since only the Project's right-of-way would traverse the IRA, there would be limited effects on wildlife species and associated habitat values in the IRA. Impacts on IRA 0401012 resulting from Route Variations

COUT-B-2 and COUT-B-4 would be similar to those described for Route Variation COUT-B-1. Due to reduced amount of IRA affected by the Project, the proposed right-of-way only traverses 0.5 mile of the IRA and the Project's proposed centerline does not cross the IRA, low residual impact were identified on the area's characteristics and qualities.

Unroaded/Undeveloped Areas

Alternative COUT-B

Impacts on the Cedar Knoll Unroaded/Undeveloped Area are the same as Alternative COUT-A.

The proposed right-of-way for Alternative COUT-B 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 reestablishment of vegetation within the right-of-way and re-contouring structure work areas to reestablish 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 crosses 5.6 miles of the Cottonwood Unroaded/Undeveloped Area (Ashley National Forest), considered a moderate impacts 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 within the area. These activities could alter or disrupt natural drainage patterns in the short-term but through the reestablishment of vegetation within the right-of-way and re-contouring structure work areas to reestablish 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-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

The proposed right-of-way for Route Variation COUT-B-1 crosses 0.1 mile of the Right Fork Indian Canyon Unroaded/Undeveloped Area (Ashley National Forest), considered a low 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 15 to 22 structures are located adjacent to the boundary and through construction, grading associated with one structure pad would occur adjacent to or partially within the area. These activities could alter or disrupt natural drainage patterns in the short-term but

through the reestablishment of vegetation within the right-of-way and re-contouring structure work areas to reestablish any altered natural drainage patterns, these effects would be reduced. Opportunities for solitude exist in the canyons where there is limited influence from man and the Project would be screened from these views by steep topography. Additionally, the Project would be located adjacent to the Reservation Ridge Scenic Backway, which forms the boundary of the unroaded/undeveloped area and reduces scenic integrity of this area (discussed further in Section 3.2.16). Access into the area using the Reservation Ridge Scenic Backway could be temporary limited during construction activities but once constructed, the Project would not affect opportunities to access primitive recreation including access to hiking trails and access to Gray Head Peak. Since only the Project's right-of-way would traverse the unroaded/undeveloped area, there would be limited effects on wildlife species and associated habitat values in the area.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Affected Environment and Environmental Consequences (Colorado)

The proposed rights-of-way for Alternative COUT-C and route variations do not cross any IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed rights-of-way for Alternative COUT-C and route variations cross the following IRA:

- Cedar Knoll IRA (Manti-La Sal National Forest) would be crossed by Link U621 (refer to MV-19b) occupying 30 acres within 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.

In addition, Route Variations COUT-C-1, COUT-C-2, and COUT-C-4 cross the same IRAs in the Uinta and Ashley National Forests as the associated Alternative COUT-B route variations (COUT-B-1, COUT-B-2, and COUT-B-4).

Unroaded/Undeveloped Areas

The proposed rights-of-way for Alternative COUT-C and route variations cross 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 (refer to MV-19b) occupying 30 acres within 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.

In addition, Route Variation COUT-C-1 crosses the following unroaded/undeveloped area:

- Right Fork Indian Canyon Unroaded/Undeveloped Area (Ashley National Forest) would be crossed by Link U513 (refer to MV-19b) occupying 0.3 acre within the unroaded/undeveloped area. The Project would traverse an area with limited visible modifications except for the Reservation Ridge Scenic Backway that forms the edge of the unroaded/undeveloped area. The characteristics and qualities for the area are the same as those described for Route Variation COUT-B-1.

Environmental Consequences (Utah)

Inventoried Roadless Areas

Alternative COUT-C

Impacts on the Cedar Knoll IRA are the same as Alternative COUT-A.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

In addition, the proposed rights-of-way for Route Variations COUT-C-1, COUT-C-2, and COUT-C-4 cross the same mileage and IRAs as Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 producing the same impacts as these route variations.

Unroaded/Undeveloped Areas

Impacts on the Cedar Knoll Unroaded/Undeveloped Area are the same as Alternative COUT-A.

Impacts on the Right Fork Indian Canyon (Ashley National Forest) are the same as Route Variation COUT-B-1.

Alternative COUT-H (Applicant Preferred Alternative)

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT-H does not cross IRAs or unroaded/undeveloped areas

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-H does not cross IRA or unroaded/undeveloped areas.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT-H crosses the same unroaded/undeveloped area as Alternative COUT BAX-E. Characteristics and qualities for the Oak Creek Unroaded/Undeveloped Area (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 does not cross IRAs.

Unroaded/Undeveloped Areas

Impacts on the Oak Creek Unroaded/Undeveloped Area (Manti-La Sal National Forest) are the same as Alternative COUT BAX-E.

Alternative COUT-I

Affected Environment and Environmental Consequences (Colorado)

The proposed right-of-way for Alternative COUT-I does not cross IRAs or unroaded/undeveloped areas.

Affected Environment (Utah)

Inventoried Roadless Areas

The proposed right-of-way for Alternative COUT-I does not cross IRAs.

Unroaded/Undeveloped Areas

The proposed right-of-way for Alternative COUT-I crosses the same unroaded/undeveloped area as Alternatives COUT BAX-B and COUT BAX-C. Characteristics and qualities for the East Mountain Unroaded/Undeveloped Area (Manti-La Sal National Forest) 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-I does not cross IRAs.

Unroaded/Undeveloped Areas

Impacts on the East Mountain Unroaded/Undeveloped Area (Manti-La Sal National Forest) are the same as Alternative COUT BAX-B.

3.2.15.5.5 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.

3.2.16 Visual Resources

3.2.16.1 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 3.2.16.2). 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).

3.2.16.1.1 Regulatory Framework

As directed by FLPMA, the BLM and USFS 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 Visual Resource Management [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 or USFS LRMP describes additional visual resource guidance presented as management policies, standards, and guidelines. Goals, policies, 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 Key Observation Points (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 3.2.16.4.

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 (BLM 2009f).

National Scenic and Historic Trail Manuals

In September 2012, the BLM developed three manuals describing the administration and management of NSTs and 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 3.2.17.

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 RMP⁵
 - Wild and Scenic Rivers Management Action: Manage wild and scenic rivers to meet the Wyoming Standards for Healthy Rangelands
- Grand Junction Field Office (Colorado) – 1987 RMP and Record of Decision
- 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 within 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 as a suitable scenic segment to protect its outstandingly remarkable values. Management will include: VRM – Class I and II
 - Scenery ACECs: Lower Green River Corridor and Nine Mile Canyon

⁵The 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 is 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 Routed) 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 WVEC 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 Office manager or National Forest supervisor will determine the role of the Applicant in completing this task (BLM and DOE 2012).

3.2.16.2 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 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 3.2.16.5). 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 3.2.16.4.

3.2.16.2.1 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 3-223.

3.2.16.2.2 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. These views would potentially be adversely modified 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 3-224.

3.2.16.2.3 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.

3.2.16.3 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.

3.2.16.3.1 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 2-2a). 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 cuernas (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.

3.2.16.3.2 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 alternative route would cross this section with the WYCO route groupings (refer to Map 2-2a) located in the far northeast corner of the section, while a major portion of the COUT and COUT BAX route groupings (refer to Map 2-2b) 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-H, COUT-I, COUT BAX-B, COUT BAX-C, and COUT BAX-E (refer to Map 2-2b) 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 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 Alternatives COUT-A, COUT-B, COUT-C, COUT-H, COUT-I, COUT BAX-B, COUT BAX-C, and COUT BAX-E (refer to Map 2-2b). 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.

3.2.16.3.3 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 2-2b). 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 Project alternative routes in this province, but several large cities are located directly adjacent to the province.

3.2.16.3.4 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 Alternatives COUT-A, COUT-B, COUT-C, COUT-H, COUT-I, COUT BAX-B, COUT BAX-C, and COUT BAX-E (refer to Map 2-2b). It is characterized by isolated, parallel, north-south oriented mountain ranges, typically 50 to 75 miles long, that are surrounded by nearly level, typically un-drained 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 within the Basin and Range province includes the communities of Nephi and Mona, Utah.

3.2.16.4 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 (land 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 3.2.16.5. The project-level inventory and impact assessment were primarily focused within 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 the Project Visual Resource Technical Report.

Table 3-219 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.

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-midground (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]), midground (extending beyond the foreground distance zone to 3 or 5 miles [determined on a case-by-case basis]), and background (extending beyond the midground 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 Historic Register Places 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 Jones & Jones 1976 report (Jones & Jones 1976), *Measuring the Visibility of H.V. Transmission Facilities in the Pacific Northwest*, as well as decades of experience conducting visual studies for transmission line projects across the western United States, 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 3.2.16.5.2. 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 88 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*:

- (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 (BLM 1986).

In the following table are the four VRM Class objectives as described per BLM Manual Handbook 8410-1.

TABLE 3-220	
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.

TABLE 3-220	
BUREAU OF LAND MANAGEMENT VISUAL RESOURCE MANAGEMENT CLASSES	
Visual Resource Management Class	Objective
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 3-221. 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.

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.

TABLE 3-221	
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 3-221 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	

3.2.16.4.1 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.

3.2.16.4.2 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 2.5.1.

- **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 3-222). These criteria form the baseline for determining whether an impact on scenery or views would occur at a high, moderate, or low level.

TABLE 3-222 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON VISUAL RESOURCES	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ■ 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.

TABLE 3-222 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON VISUAL RESOURCES	
Level of Impacts	Description
Moderate	<ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> ▪ 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 of where the Project would be viewed from. 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 3-222).

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 1.0 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 3-222).

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 H). 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 H), 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 2.5.1.2, 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 to all 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 3.2.16.5, 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 H. 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 Project 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 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 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 49 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 H.

For the detailed impact assessment methodology, refer to the Project Visual Resource Technical Report.

3.2.16.5 Results

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

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.

3.2.16.5.3 345-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 which 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/midground
- VRI Classes: VRI Class III

3.2.16.5.4 500-kilovolt Transmission Line Components

As described in Issues Identified for Analysis, Table 3-223 includes the detailed list of scenery concerns raised during scoping and refers to the appropriate Project alternative routes. In a similar manner, Table 3-224 includes the scoping issues associated with impacts on views. The third table (Table 3-225) identifies which BLM Field Office and USFS National Forests would be potentially traversed by each alternative route. Maps 3-7 through 3-12 present the BLM and USFS visual management classes or objectives used for determining visual resources as well as the BLM VRI components.

TABLE 3-223 SCENERY ISSUES BY ALTERNATIVE ROUTE												
Issue	Map Panel	Alternative Route										
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D and Route Variation	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A and Route Variation	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H
Wyoming												
Adobe Town region. ¹ This area was designated by the State of Wyoming as a “very rare or uncommon” area that was also recognized by the Bureau of Land Management Rawlins Field Office 2008 Resource Management Plan. Unique landscapes are located within the Adobe Town WSA and adjacent lands, including Willow Creek Rim, the Haystacks, and Powder Mountain.	MV-22a		✓									
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 are also located throughout these landscapes, adding to the rural character.	MV-22a	✓	✓	✓	✓							
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-22b					✓	✓	✓				
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-22b					✓	✓	✓				
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-22a			✓								

**TABLE 3-223
SCENERY ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D and Route Variation	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A and Route Variation	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
Yampa River landscape	MV-22a			✓									
Tavaputs Plateau landscape	MV-22b					✓	✓	✓					
Rural landscape character. ¹ Refer to Wyoming description	MV-22a, b	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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-22b									✓	✓	✓	✓
Bad Land Cliffs landscape	MV-22b										✓	✓	✓
Book Cliffs. ¹ Refer to Colorado description	MV-22b										✓	✓	✓
Green River landscape	MV-22b									✓	✓	✓	✓
Strawberry River landscape	MV-22b								✓				
Tavaputs Plateau landscape	MV-22b									✓	✓	✓	✓
Wasatch Plateau Alpine landscape	MV-22b					✓	✓						✓
Wasatch Plateau landscape	MV-22b							✓			✓		
Wasatch Plateau Parks landscape	MV-22b							✓			✓	✓	✓
Rural landscape character. ¹ Refer to Wyoming description	MV-22b					✓	✓	✓	✓	✓	✓	✓	✓
NOTE: ¹ Issue identified during scoping													

**TABLE 3-224
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route										
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H
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-20a			✓								
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-20a	✓	✓	✓	✓							
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-20a			✓								
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-20a	✓	✓	✓	✓							
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-20a			✓								

TABLE 3-224 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE												
Issue	Map Panel	Alternative Route										
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H
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 would cross the interstate then parallel the road approximately 4 miles away.	MV-21a	✓	✓	✓	✓							
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-21a			✓								
Hanna Draw Road	MV-21a	✓	✓		✓							
Recreation Areas												
Continental Divide National Scenic Trail (NST). ¹ This NST roughly follows the Continental Divide of the Americas from the U.S. 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-20a	✓	✓	✓	✓							
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-20a	✓	✓	✓	✓							

**TABLE 3-224
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
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-20a	✓	✓	✓	✓								
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-20a	✓	✓	✓	✓								
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-21a				✓								
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 would cross the river 15 miles east of Rawlins, Wyoming, in an area designated as a special recreation management area.	MV-20a	✓	✓	✓	✓								
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-20a	✓	✓	✓	✓								
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	✓	✓	✓	✓								

TABLE 3-224 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE												
Issue	Map Panel	Alternative Route										
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COU BAX-B	COU BAX-C	COU BAX-E	COU-T-A (and route variation)	COU-T-B and Route Variations	COU-T-C and Route Variations	COU-T-H
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-20a	✓	✓	✓	✓							
Continental Divide NST Special Recreation Management Area	MV-20a	✓	✓	✓	✓							
North Platte Special Recreation Management Area	MV-20a	✓	✓	✓	✓							
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-21a	✓	✓	✓	✓							
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-21a			✓								
Colorado												
Residences												
Dispersed residences. ¹ Refer to Wyoming description	MV-20ab	✓	✓	✓	✓	✓	✓	✓				
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-20b					✓	✓	✓	✓	✓	✓	✓
U.S. Highway 40 (area east of Craig)	MV-21a			✓								

TABLE 3-224 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE												
Issue	Map Panel	Alternative Route										
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COU BAX-B	COU BAX-C	COU BAX-E	COU-A (and route variation)	COU-B and Route Variations	COU-C and Route Variations	COU-H
Demaree Wilderness Study Area (WSA) Baxter Pass Destination Route	MV-20b					✓	✓	✓				
Oil Spring Mountain WSA Destination Route	MV-20b					✓	✓	✓				
Rabbit Valley Recreation Destination Route	MV-21b					✓	✓	✓				
Rio Blanco County Road 23	MV-21b					✓	✓	✓				
Sevenmile Ridge Destination Route (proposed back country byway)	MV-21a	✓	✓		✓							
Recreation Areas												
Crook’s Brand, Carrot Men, and Fremont Ridge Rock Art Sites	MV-20b					✓	✓	✓				
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-21a	✓	✓		✓							
Yampa River	MV-20a	✓	✓	✓	✓							
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-20a	✓	✓	✓	✓							
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-20ab	✓	✓	✓	✓				✓	✓	✓	✓

**TABLE 3-224
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
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-20a	✓	✓		✓								
Demaree WSA	MV-20b					✓	✓	✓					
Oil Spring Mountain WSA	MV-20b					✓	✓	✓					
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-20b					✓	✓	✓					
Yampa River State Park	MV-20a	✓	✓		✓								
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-20b									✓	✓	✓	✓
Clear Creek. ¹ A group of residences are located at the terminus of Utah State Route 96, set within the steep terrain of the Wasatch Plateau.	MV-20b							✓				✓	
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-20b							✓				✓	

**TABLE 3-224
VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
Fruitland. ¹ Scattered residences are located along U.S. Highway 40 and throughout the agriculturally dominated landscape.	MV-20b								✓				
Helper	MV-20b											✓	
Huntington	MV-20b												✓
Mount Pleasant	MV-20b					✓	✓						✓
Thompson Springs	MV-20b					✓	✓	✓					
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-20b								✓	✓			
Dispersed residences. ¹ Refer to Wyoming description	MV-20b					✓	✓	✓	✓	✓	✓	✓	✓
Travel Routes													
Dinosaur Diamond Scenic Byway	MV-20b					✓	✓	✓	✓	✓	✓	✓	✓
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 within 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-20b					✓	✓	✓		✓	✓	✓	✓
Indian Canyon Scenic Byway	MV-20b									✓	✓	✓	
Nine Mile Canyon Scenic Backway	MV-20b										✓	✓	✓
Reservation Ridge Scenic Backway	MV-20b									✓	✓		
Skyline Drive Scenic Backway	MV-20b					✓	✓	✓				✓	✓
Wedge Overlook/Buckhorn Draw Scenic Backway	MV-20b					✓	✓						

**TABLE 3-224
 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
White River/Strawberry Road Scenic Backway	MV-20b								✓				
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-21b					✓	✓	✓					
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-20b					✓	✓	✓	✓	✓	✓	✓	✓
Dinosaur National Monument Destination Route	MV-20b												
Floy Canyon WSA Destination Route	MV-20b					✓	✓	✓					
Horseshoe Canyon Destination Route	MV-20b					✓	✓	✓					
Mexican Mountain WSA Destination Route	MV-20b					✓	✓	✓					
San Rafael Swell Destination Route	MV-20b					✓	✓	✓					
Sand Wash/Nine Mile Area of Critical Environmental Concern (ACEC) Destination Route (Sand Wash Road)	MV-20b										✓	✓	✓
Sego Canyon Destination Route	MV-20b					✓	✓	✓					

**TABLE 3-224
 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	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). Within the study area, the trail stretches from the Colorado/Utah border along I-70 through the San Rafael Swell.	MV-20b					✓	✓	✓					
Arapeen Trail System	MV-20b					✓	✓						✓
Aspen Grove Campground	MV-20b								✓				
Avintaquin Campground	MV-20b									✓	✓		
Carbon County Multi-Use Trail "Western Loop"	MV-21b											✓	
Great Western Trail	MV-20b								✓				
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-20b					✓	✓	✓	✓	✓	✓	✓	✓
Indian Creek Campground	MV-20b					✓	✓						✓
Potters Pond	MV-20b					✓	✓						✓

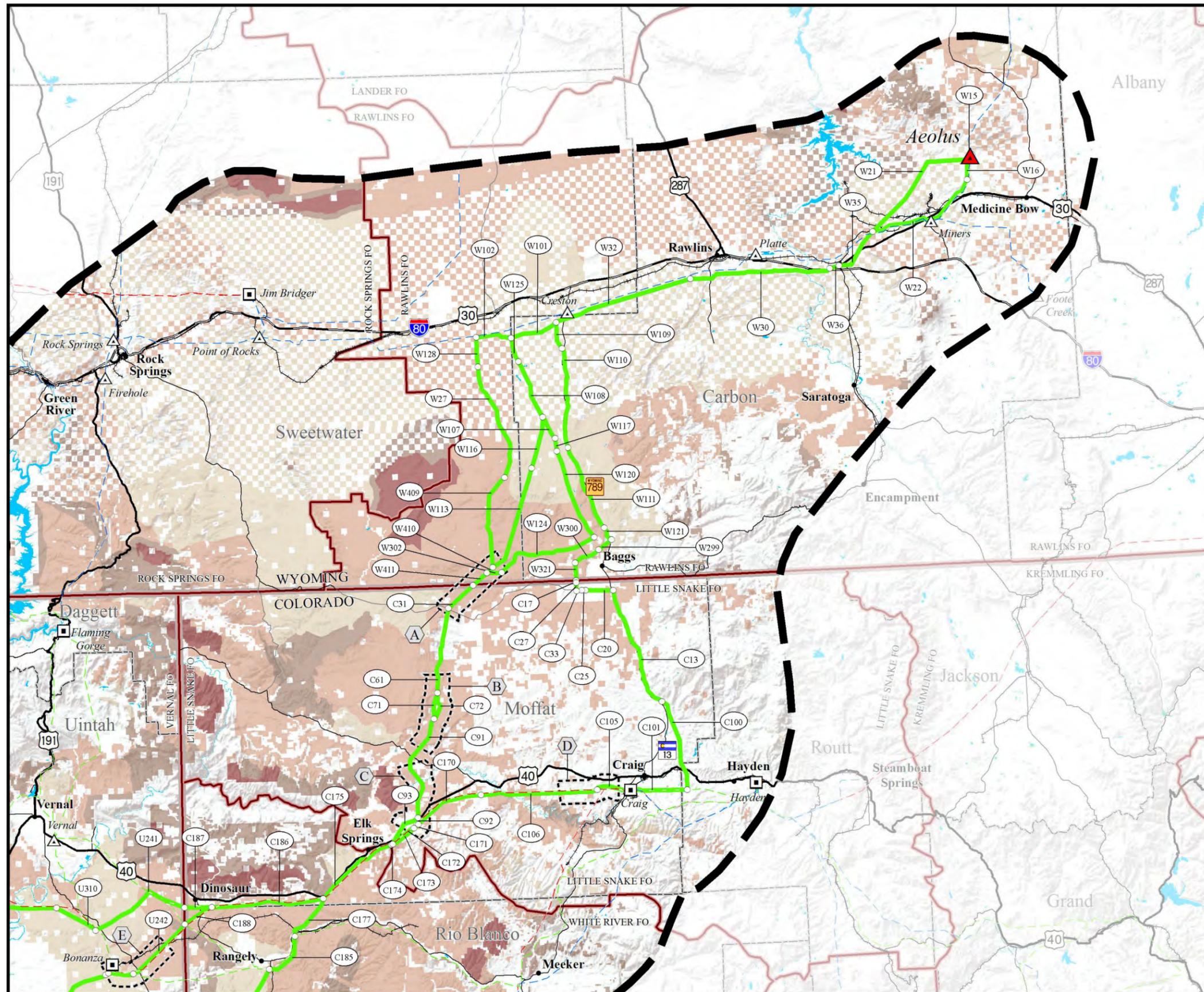
**TABLE 3-224
 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
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-20b MV-21b					✓	✓	✓					
Strawberry Reservoir recreation. ¹ Boating and fishing are the primary recreation activities on Strawberry Reservoir, but opportunities exist for hiking and camping within adjacent lands managed by the Uinta-Wasatch-Cache National Forest.	MV-20b MV-21b								✓				
Strawberry River	MV-20b								✓				
Wasatch Plateau recreation. ¹ A variety of recreation opportunities occur within the Manti-La Sal National Forest on the Wasatch Plateau, including scenic driving, hiking, camping, fishing, and all-terrain vehicle riding.	MV-20b MV-21b					✓	✓	✓				✓	✓
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 would 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-20b										✓	✓	✓
Dispersed recreation. ¹ Refer to Wyoming description	Not applicable					✓	✓	✓	✓	✓	✓	✓	✓

**TABLE 3-224
 VIEWING LOCATION ISSUES BY ALTERNATIVE ROUTE**

Issue	Map Panel	Alternative Route												
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D (and route variation)	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A (and route variation)	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I	
Special Designations														
Lower Green River Eligible 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-20b											✓	✓	✓
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-20b											✓	✓	✓
Nine Mile Canyon ACEC. ¹ This area of critical environmental concern encompasses more than 44,000 acres and was designated to protect cultural resources, high quality scenery, and special status species.	MV-20b											✓	✓	✓
San Rafael Canyon ACEC	MV-20b					✓	✓							
NOTE: ¹ Issue identified during scoping														

TABLE 3-225 BUREAU OF LAND MANAGEMENT FIELD OFFICE AND U.S. FOREST SERVICE NATIONAL FORESTS CROSSED BY ALTERNATIVE ROUTE													
Issue	Map Panel	Alternative Route											
		WYCO-B and Route Variations	WYCO-C and Route Variations	WYCO-D and Route Variation	WYCO-F and Route Variations	COUT BAX-B	COUT BAX-C	COUT BAX-E	COUT-A and Route Variation	COUT-B and Route Variations	COUT-C and Route Variations	COUT-H	COUT-I
Bureau of Land Management													
Wyoming													
Rawlins Field Office	MV-23a	✓	✓	✓	✓								
Colorado													
Grand Junction Field Office	MV-23b					✓	✓	✓					
Little Snake Field Office	MV-23a	✓	✓	✓	✓								
White River Field Office	MV-23ab	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Utah													
Fillmore Field Office	MV-23b					✓	✓	✓	✓	✓	✓	✓	✓
Moab Field Office	MV-23b					✓	✓	✓					
Price Field Office	MV-23b					✓	✓	✓		✓	✓	✓	✓
Richfield Field Office	MV-23b					✓	✓	✓	✓	✓	✓	✓	✓
Salt Lake Field Office	MV-23b									✓	✓		
Vernal Field Office	MV-23b								✓	✓	✓	✓	✓
U.S. Forest Service													
Ashley National Forest	MV-23b									✓	✓		
Manti-La Sal National Forest	MV-23b					✓	✓	✓	✓	✓	✓	✓	✓
Uinta-Wasatch-Cache National Forest	MV-23b								✓	✓	✓		



Map 3-7a
BLM Visual Resource Management Classes Northern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Visual Resource Management Classes¹

- | | |
|----------|-----------|
| Class I | Class III |
| Class II | Class IV |

Project Features

- | | |
|-------------------------------|--|
| Project Area Boundary | 345kV Proposed Rebuild (Segment 4a and 4b - Inset B) |
| Substation (Project Terminal) | 345kV Proposed Reroute (Segment 4c - Inset B) |
| Alternative Route | Series Compensation Station Siting Area |
| Link Number | |
| Link Node | |

General Reference

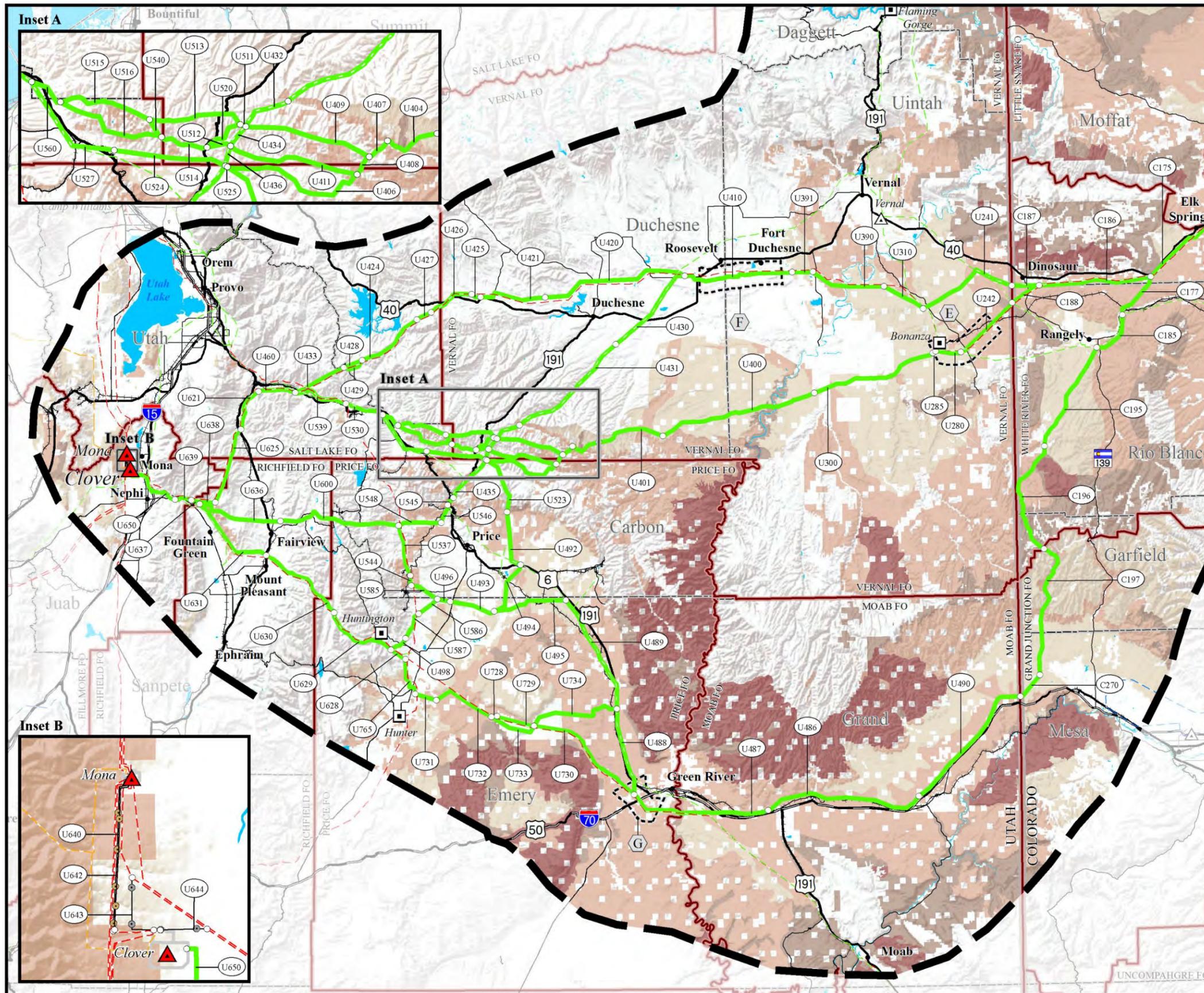
- | | |
|-------------------------|---------------------------|
| City or Town | Interstate Highway |
| Substation | U.S. Highway |
| Power Plant | State Highway |
| 500kV Transmission Line | Other Road |
| 345kV Transmission Line | Lake or Reservoir |
| 230kV Transmission Line | State Boundary |
| 138kV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

SOURCES:
BLM Visual Resource Management Classes, BLM 2011, 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM 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: April 1, 2013
DRAFT EIS: February 2014





Map 3-7b
BLM Visual Resource Management Classes Southern Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Visual Resource Management Classes¹

Class I	Class III
Class II	Class IV

Project Features

Project Area Boundary	345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
Substation (Project Terminal)	345kV Proposed Reroute (Segment 4c - Inset B)
Alternative Route	Series Compensation Station Siting Area
Link Number	
Link Node	

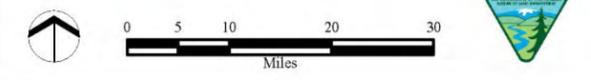
General Reference

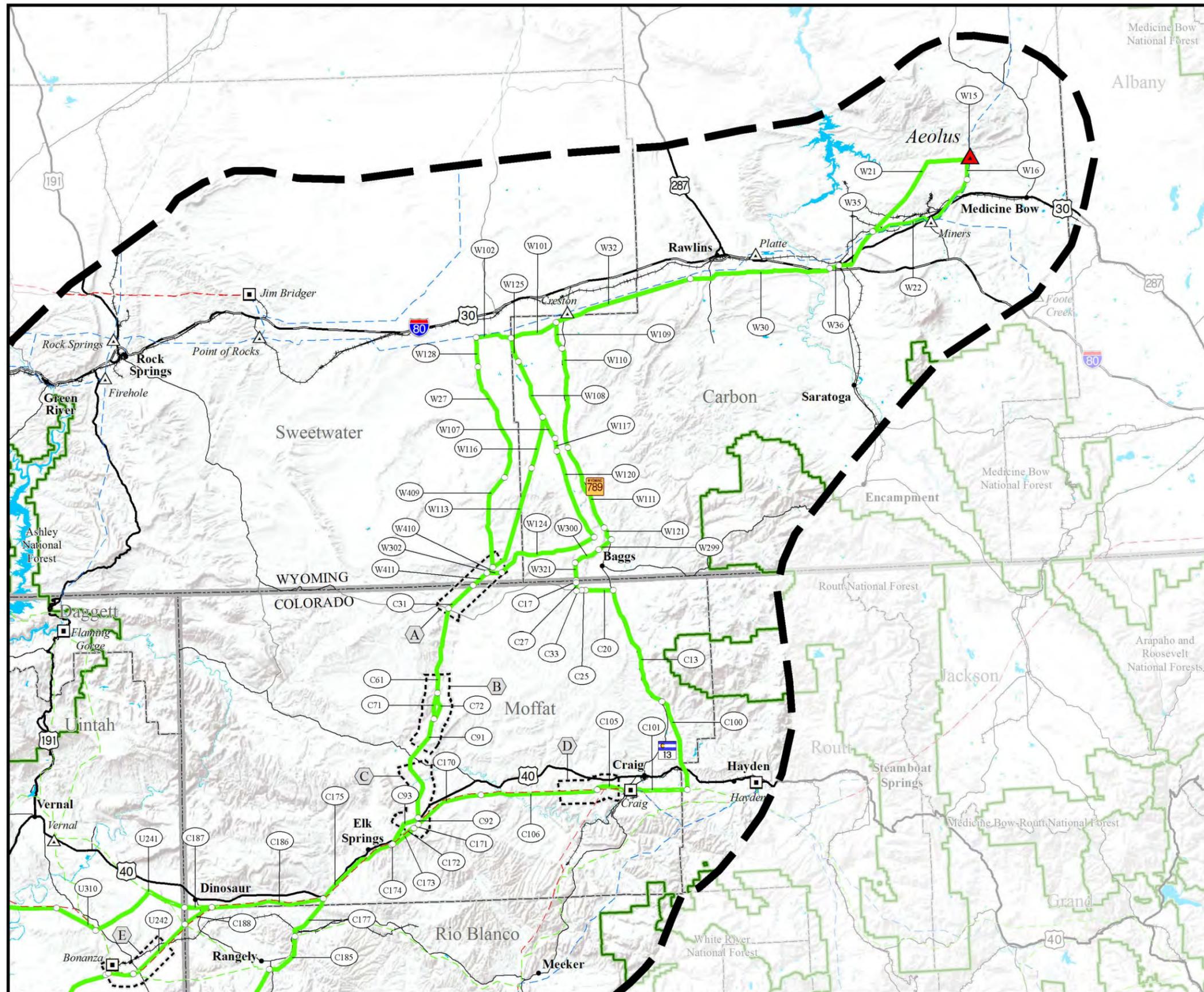
City or Town	Interstate Highway
Substation	U.S. Highway
Power Plant	State Highway
500kV Transmission Line	Other Road
345kV Transmission Line	Lake or Reservoir
230kV Transmission Line	State Boundary
138kV Transmission Line	County Boundary
Railroad	BLM Field Office Boundary

SOURCES:
BLM Visual Resource Management Classes, BLM 2011, 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
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• FO is Field Office (BLM)
• Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: April 1, 2013
DRAFT EIS: February 2014





Map 3-8a
**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
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
- 345kV Proposed Reroute (Segment 4c - Inset B)
- Series Compensation Station Siting Area

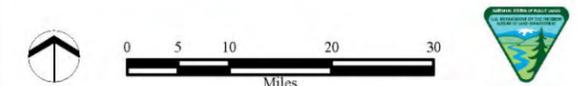
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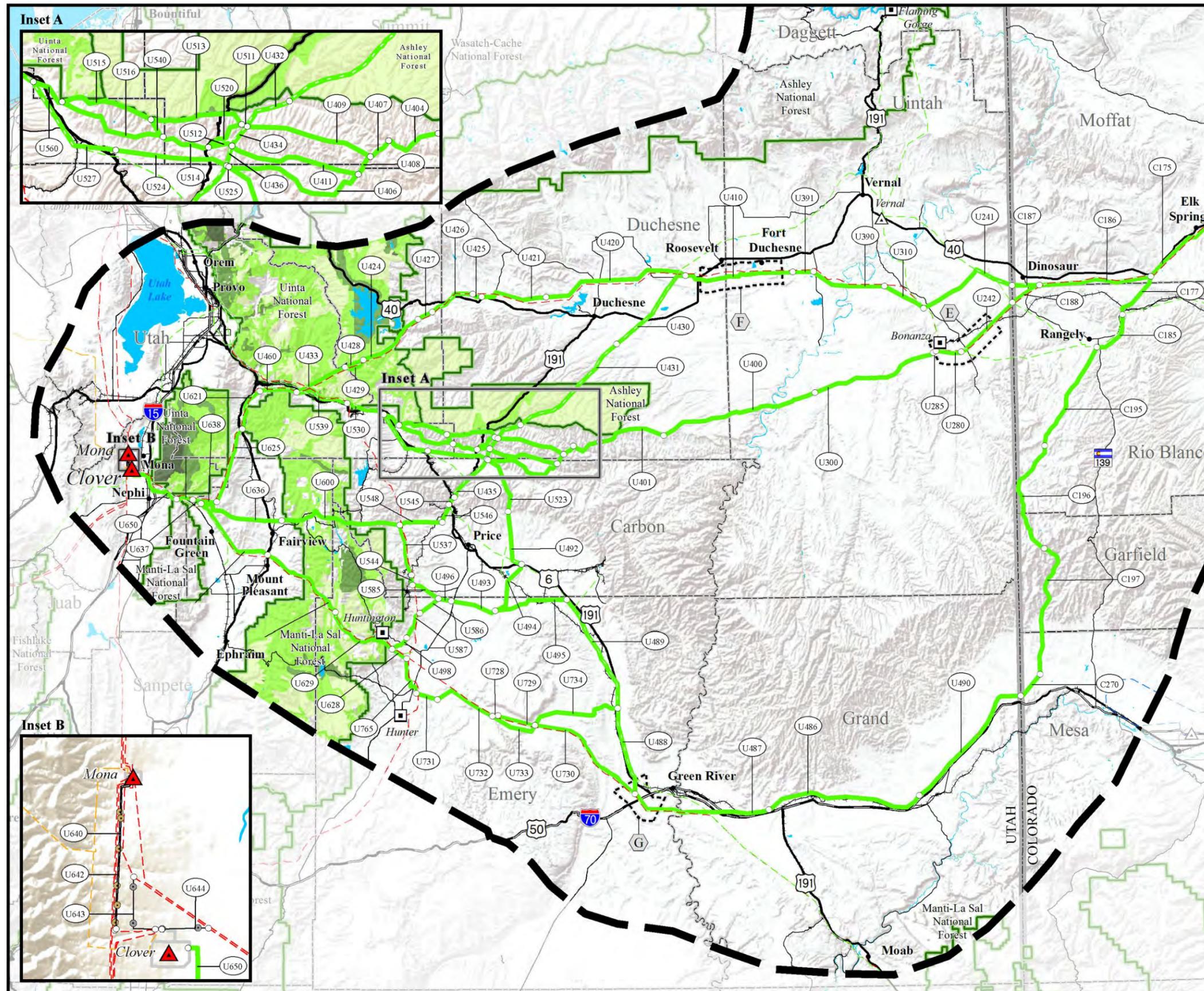
- City or Town
- ▲ Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary
- U.S. Forest Service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

SOURCES:
VQO, USFS 2003, 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008;
U.S. Forest Service Boundary, USFS 2006

NOTES:
¹U.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: April 1, 2013
DRAFT EIS: February 2014





Map 3-8b
**U.S. Forest Service
Visual Quality Objectives
Southern Area**

**ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT**

Visual Quality Objectives (VQO)¹

Preservation	Partial Retention
Retention	Modification

Project Features

Project Area Boundary	345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
Substation (Project Terminal)	345kV Proposed Reroute (Segment 4c - Inset B)
Alternative Route	Link Number
Link Node	Series Compensation Station Siting Area

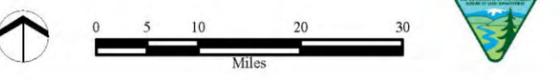
General Reference

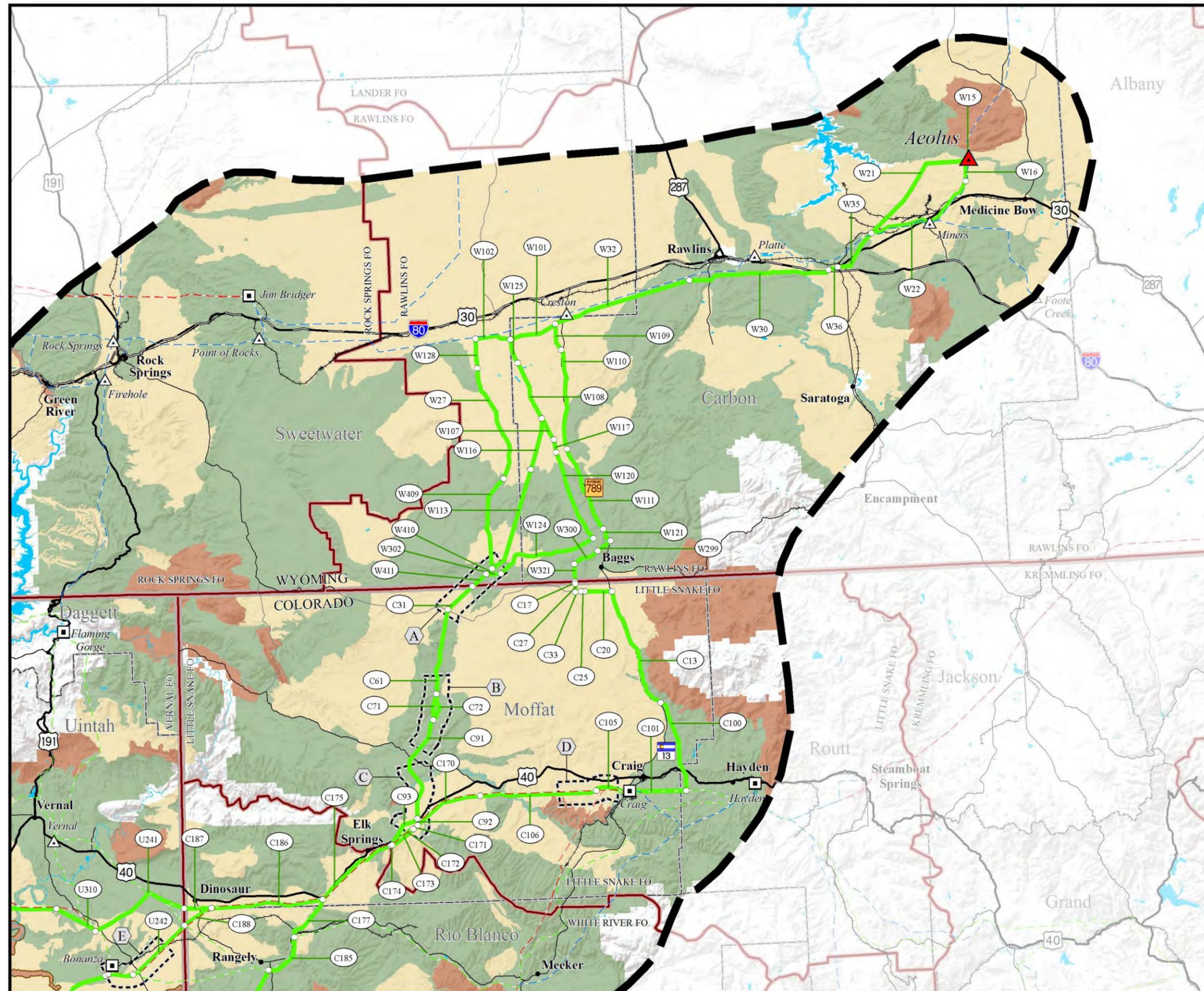
City or Town	Interstate Highway
Substation	U.S. Highway
Power Plant	State Highway
500kV Transmission Line	Other Road
345kV Transmission Line	Lake or Reservoir
230kV Transmission Line	State Boundary
138kV Transmission Line	County Boundary
Railroad	U.S. Forest Service Boundary

SOURCES:
VQO, USFS 2003, 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008;
U.S. Forest Service Boundary, USFS 2006

NOTES:
¹U.S. Forest Service Visual Quality Objectives shown only within the Project area boundary for National Forests potentially crossed by the Project.
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• Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: April 1, 2013
DRAFT EIS: February 2014





Map 3-9a
**BLM Visual Resource Inventory
Scenic Quality Rating Units
Northern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BLM Scenic Quality Rating Code¹

- | | |
|----------------|-----|
| A ² | C |
| B | N/A |

Project Features

- | | |
|-------------------------------|--|
| Project Area Boundary | 345kV Proposed Rebuild (Segment 4a and 4b - Inset B) |
| Substation (Project Terminal) | 345kV Proposed Reroute (Segment 4c - Inset B) |
| Alternative Route | Link Number |
| Link Node | Series Compensation Station Siting Area |

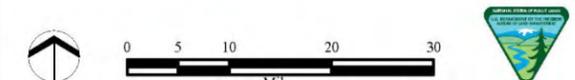
General Reference

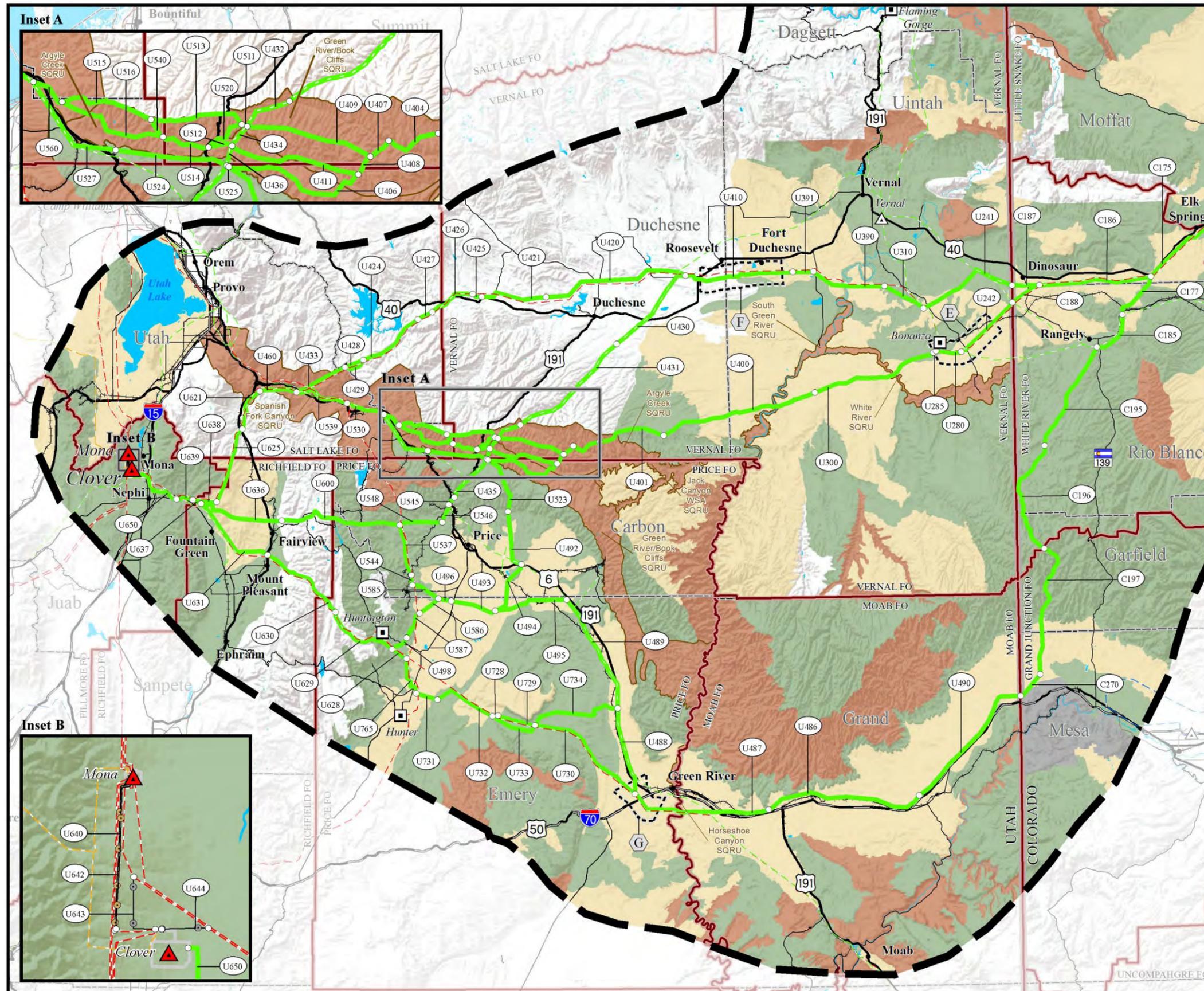
- | | |
|-------------------------|---------------------------|
| City or Town | Interstate Highway |
| Substation | U.S. Highway |
| Power Plant | State Highway |
| 500kV Transmission Line | Other Road |
| 345kV Transmission Line | Lake or Reservoir |
| 230kV Transmission Line | State Boundary |
| 138kV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

SOURCES:
BLM Scenic Quality Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM Scenic Quality Rating Units (SQRU) shown only within the Project area boundary.
²Class A SQRUs potentially crossed by the Project are labeled for reference.
• 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: April 1, 2013
DRAFT EIS: February 2014





Map 3-9b
**BLM Visual Resource Inventory
Scenic Quality Rating Units
Southern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BLM Scenic Quality Rating Code¹

 A ²	 C
 B	 N/A

Project Features

 Project Area Boundary	— 345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
▲ Substation (Project Terminal)	— 345kV Proposed Reroute (Segment 4c - Inset B)
— Alternative Route	 Link Number
 Link Node	 Series Compensation Station Siting Area

General Reference

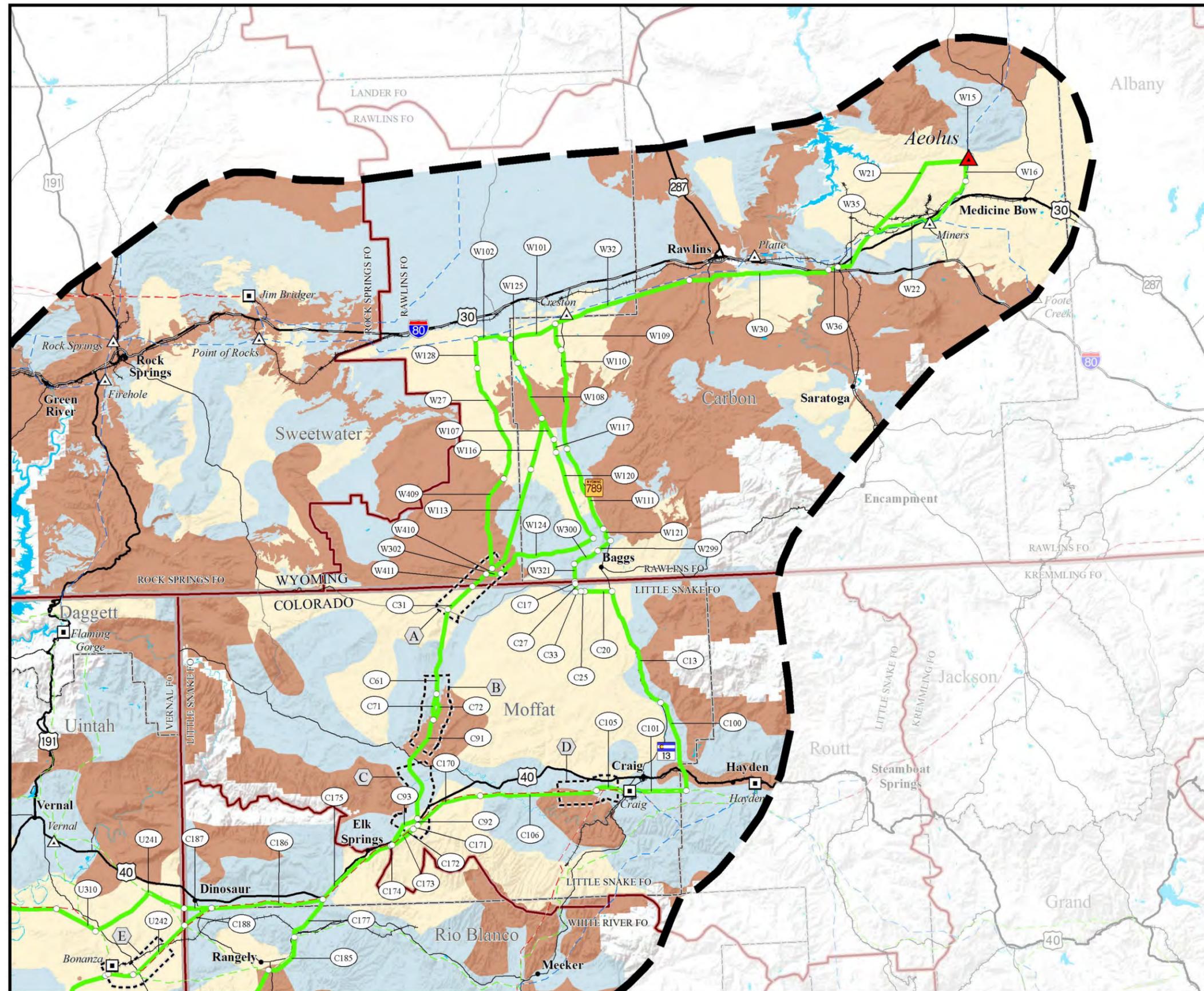
● City or Town	 Interstate Highway
▲ Substation	 U.S. Highway
 Power Plant	 State Highway
 500kV Transmission Line	 Other Road
 345kV Transmission Line	 Lake or Reservoir
 230kV Transmission Line	 State Boundary
 138kV Transmission Line	 County Boundary
 Railroad	 BLM Field Office Boundary

SOURCES:
BLM Scenic Quality Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM Scenic Quality Rating Units (SQRU) shown only within the Project area boundary.
²Class A SQRUs potentially crossed by the Project are labeled for reference.
• 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: April 1, 2013
DRAFT EIS: February 2014

0 5 10 20 30
Miles



Map 3-10a
**BLM Visual Resource Inventory
Sensitivity Level Rating Units
Northern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BLM Sensitivity Level Rating Units¹

 High	 Low
 Moderate	 N/A

Project Features

 Project Area Boundary	 345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
▲ Substation (Project Terminal)	 345kV Proposed Reroute (Segment 4c - Inset B)
 Alternative Route	A Series Compensation Station Siting Area
W102 Link Number	
 Link Node	

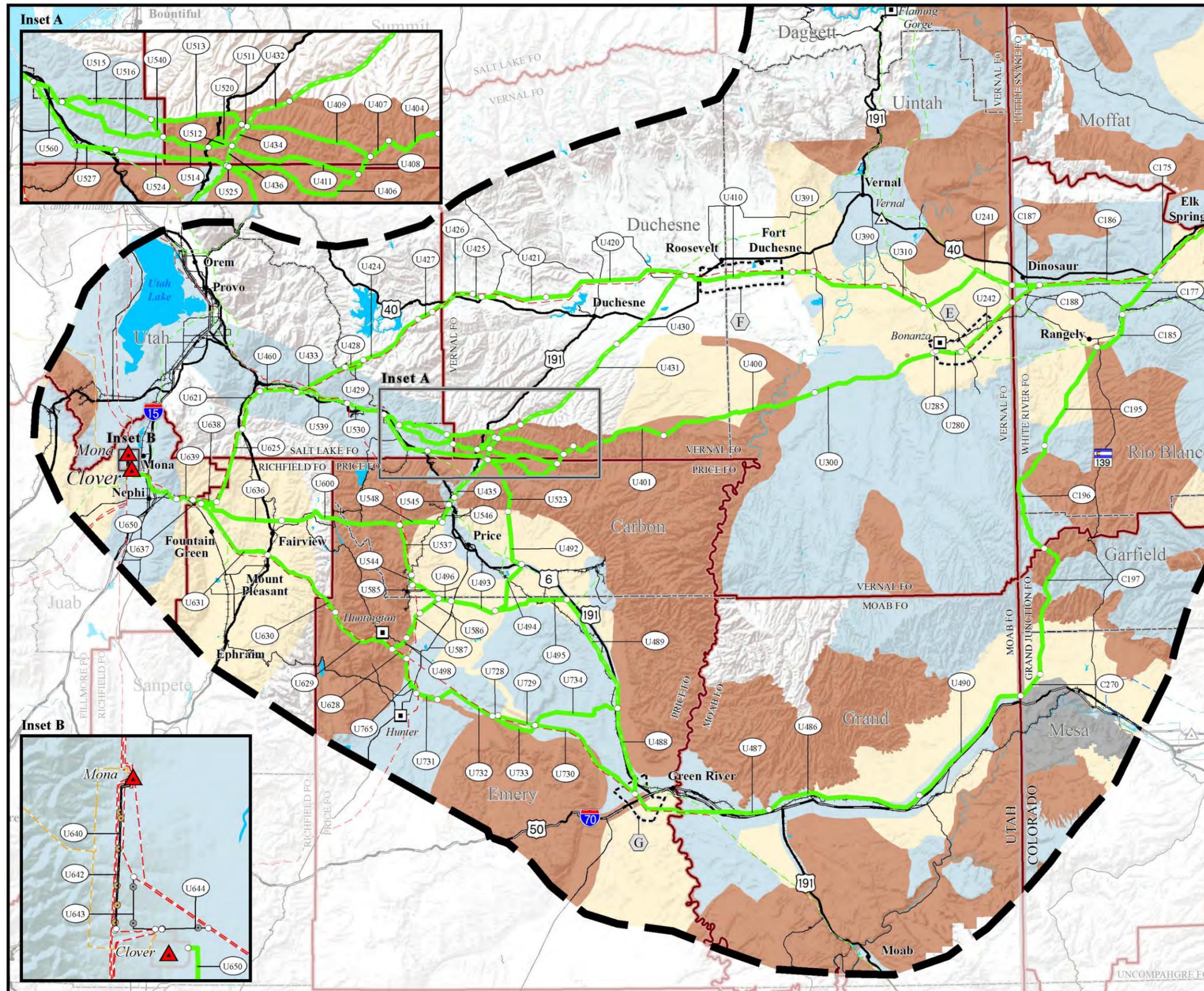
General Reference

● City or Town	 Interstate Highway
▲ Substation	 U.S. Highway
■ Power Plant	 State Highway
 500kV Transmission Line	 Other Road
 345kV Transmission Line	 Lake or Reservoir
 230kV Transmission Line	 State Boundary
 138kV Transmission Line	 County Boundary
 138kV Transmission Line	 BLM Field Office Boundary
 Railroad	

SOURCES:
BLM Sensitivity Level Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM 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: April 1, 2013
DRAFT EIS: February 2014



Map 3-10b
**BLM Visual Resource Inventory
Sensitivity Level Rating Units
Southern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BLM Sensitivity Level Rating Units¹

	High		Low
	Moderate		N/A

Project Features

	Project Area Boundary		345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
	Substation (Project Terminal)		345kV Proposed Reroute (Segment 4c - Inset B)
	Alternative Route		Series Compensation Station Siting Area
	Link Number		
	Link Node		

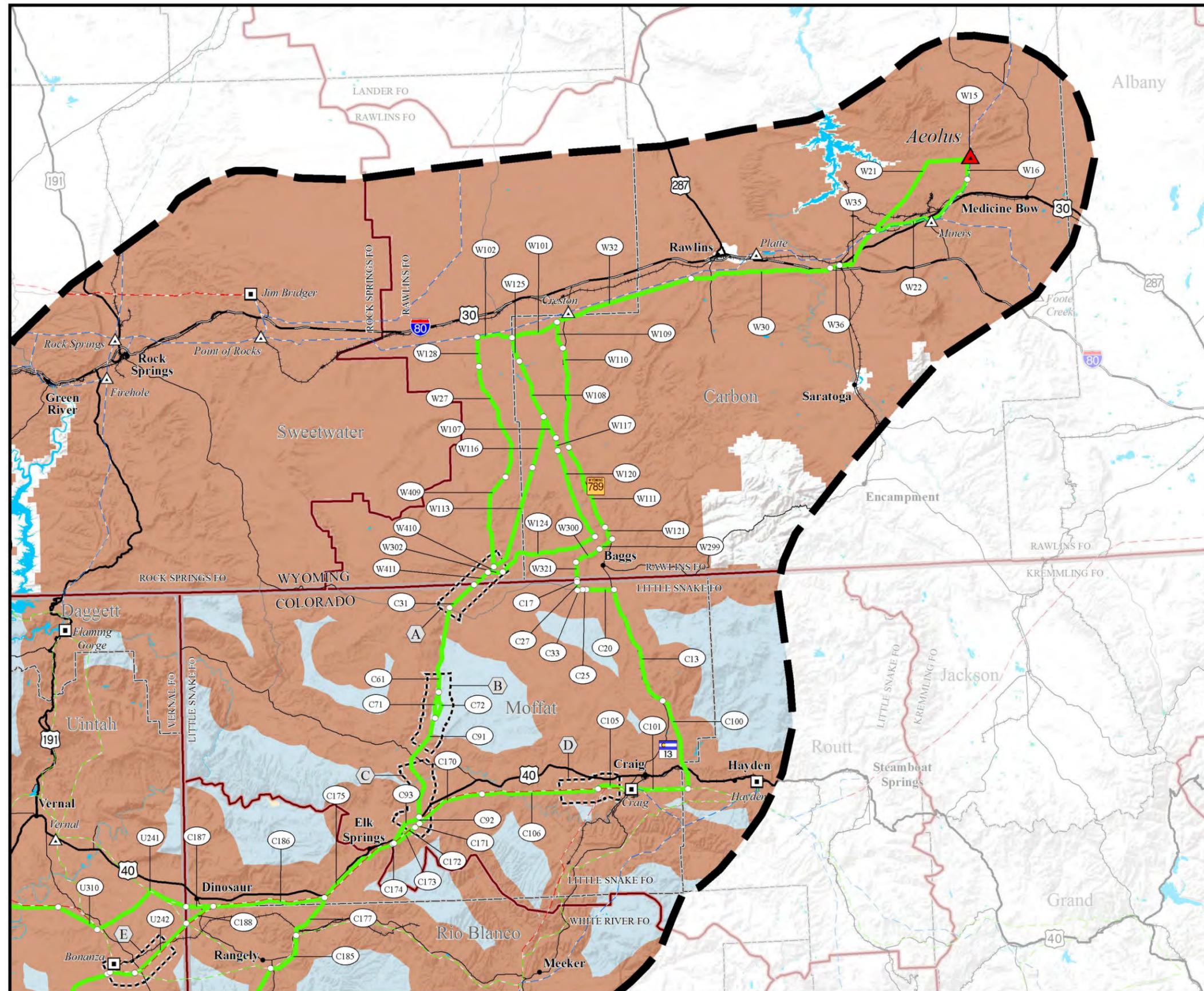
General Reference

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

SOURCES:
BLM Sensitivity Level Rating Units, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM 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: April 1, 2013
DRAFT EIS: February 2014



Map 3-11a
**BLM Visual Resource Inventory
Distance Zones
Northern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Distance Zone¹

Foreground/Middleground	Seldom Seen
Background	N/A

Project Features

Project Area Boundary	345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
Substation (Project Terminal)	345kV Proposed Reroute (Segment 4c - Inset B)
Alternative Route	Series Compensation Station Siting Area
Link Number	
Link Node	

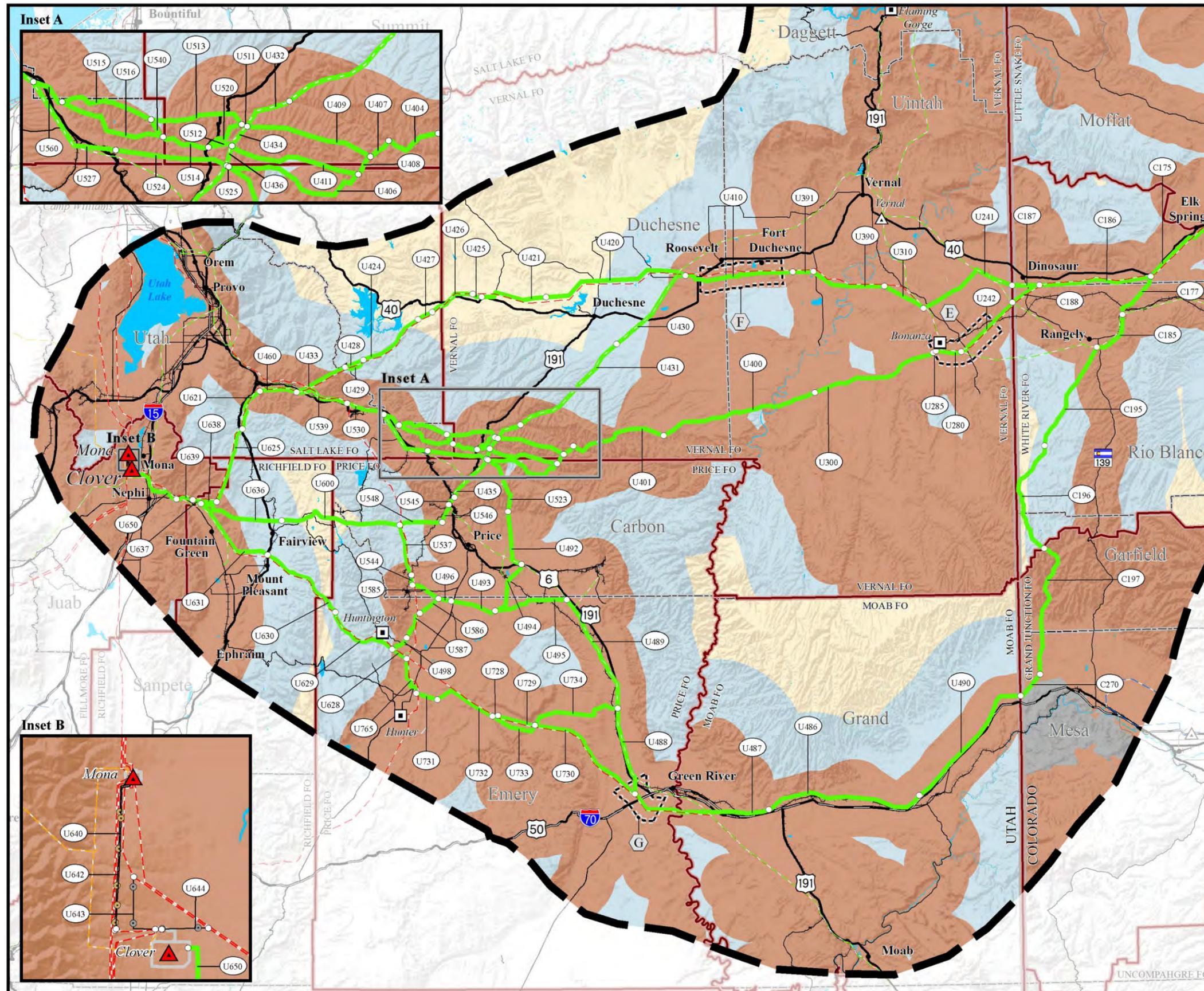
General Reference

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

SOURCES:
Distance Zones, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM Distance Zones 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: April 1, 2013
DRAFT EIS: February 2014



Map 3-11b
**BLM Visual Resource Inventory
Distance Zones
Southern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Distance Zone¹

Foreground/Midground	Seldom Seen
Background	N/A

Project Features

Project Area Boundary	345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
Substation (Project Terminal)	345kV Proposed Reroute (Segment 4c - Inset B)
Alternative Route	Series Compensation Station Siting Area
Link Number	
Link Node	

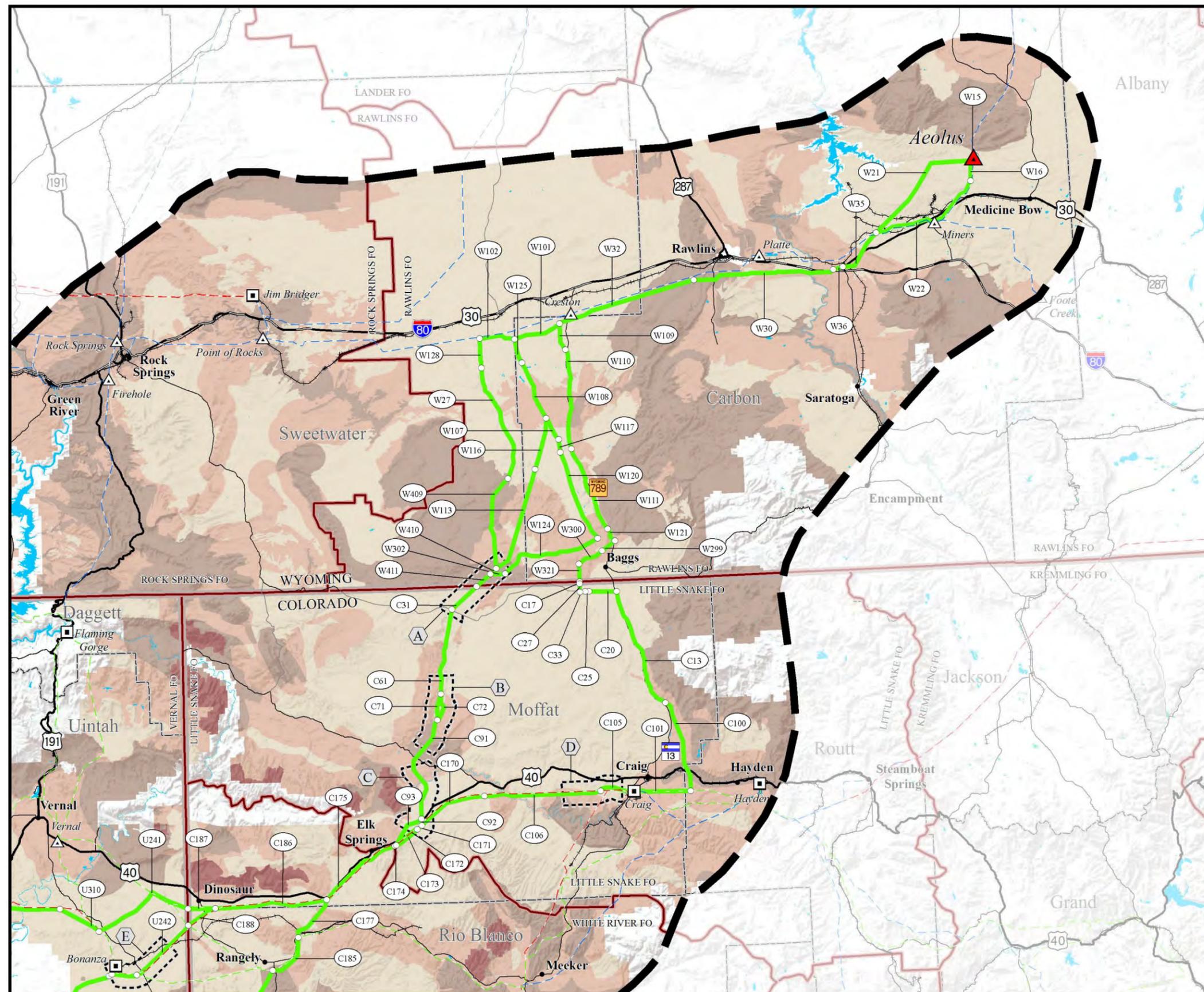
General Reference

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

SOURCES:
Distance Zones, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM Distance Zones 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: April 1, 2013
DRAFT EIS: February 2014



Map 3-12a
**BLM Visual Resource Inventory
Inventory Classes
Northern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BLM Visual Resource Inventory Classes¹

	Class I		Class IV
	Class II		N/A
	Class III		

Project Features

	Project Area Boundary		345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
	Substation (Project Terminal)		345kV Proposed Reroute (Segment 4c - Inset B)
	Alternative Route		Series Compensation Station Siting Area
	Link Number		
	Link Node		

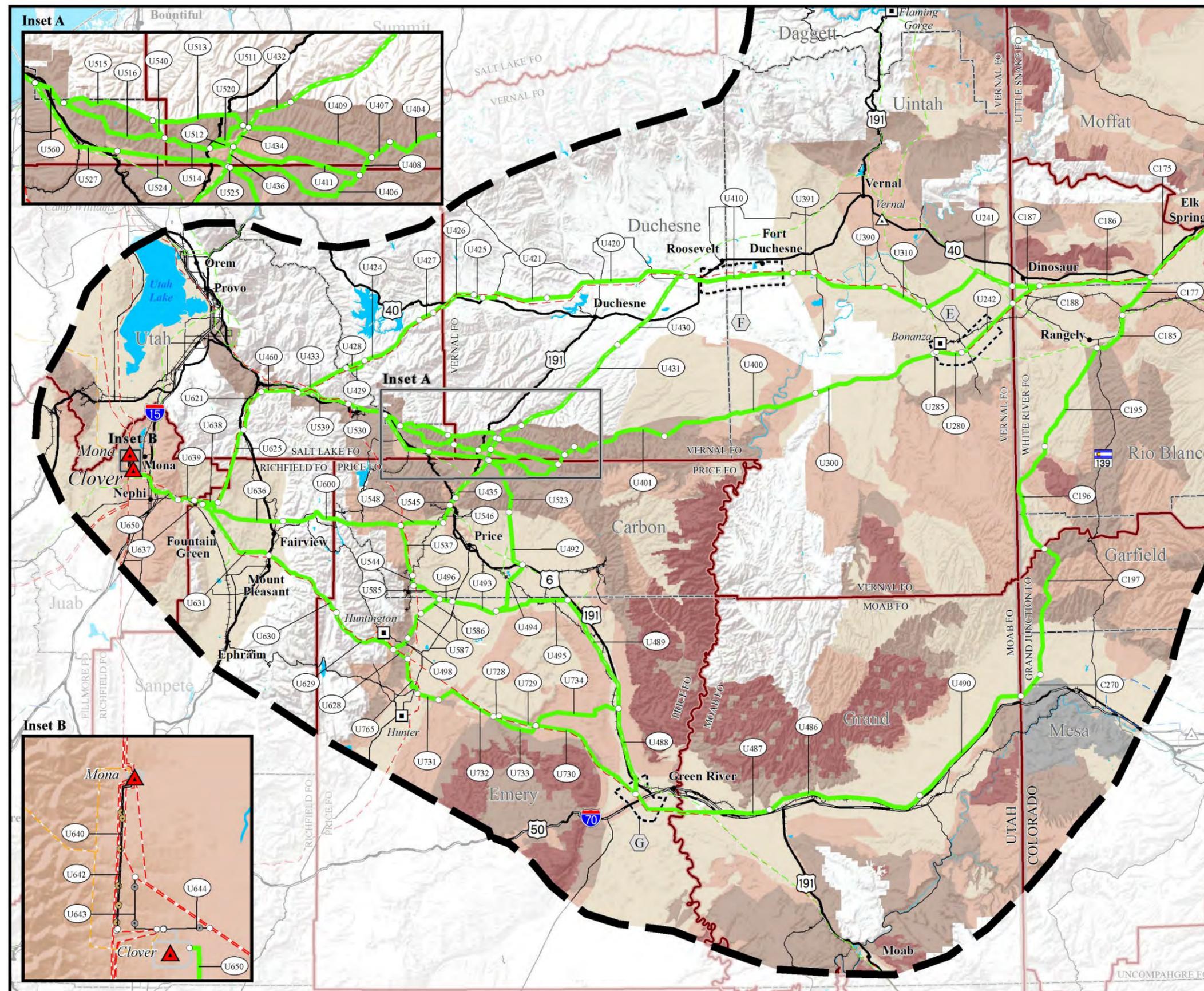
General Reference

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

SOURCES:
BLM Visual Resource Inventory Classes, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM 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: April 1, 2013
DRAFT EIS: February 2014



Map 3-12b
**BLM Visual Resource Inventory
Inventory Classes
Southern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BLM Visual Resource Inventory Classes¹

	Class I		Class IV
	Class II		N/A
	Class III		

Project Features

	Project Area Boundary		345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
	Substation (Project Terminal)		345kV Proposed Reroute (Segment 4c - Inset B)
	Alternative Route		Series Compensation Station Siting Area
	Link Number		
	Link Node		

General Reference

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

SOURCES:
BLM Visual Resource Inventory Classes, BLM 2009, 2011;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008; BLM Field Office Boundary, BLM 2008

NOTES:
¹BLM 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: April 1, 2013
DRAFT EIS: February 2014

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 3-226 and 3-227.

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Scenery

The majority of Alternative WYCO-B and route variations would cross Class C scenery associated with the rolling steppe and plains landscapes typical of the Wyoming Basin physiographic province. Distinctive Class B landscapes would also be crossed, including hogback ridges and cuerdas 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, W10, W117, and W113 have been modified by the introduction of oil and gas development characterized by low clinical forms and interspersed with perpetual moving features (i.e., pump jacks). A total of 36.6 miles of Class B scenery and 101.4 miles of Class C scenery would be crossed by Alternative WYCO-B. The route variations would cross the same scenery as Alternative WYCO-B.

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 this alternative route, (1) north of Hanna, (2) Walcott Junction, (3) along the 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 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 Kortez Dam, north of Rawlins.

TABLE 3-226

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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
Alternative WYCO-B and Route Variations																					
WYCO-B (Applicant Preferred Alternative)	204.5	0.0	66.8	137.6	0.1	14.7	16.3	47.6	61.8	64.1	53.5	44.1	33.0	21.4	52.5	0.0	64.9	60.1	0.0	0.0	0.0
Wyoming	138.1	0.0	36.6	101.4	0.1	11.2	10.5	27.1	42.5	46.8	29.4	21.9	20.5	14.3	52.0	0.0	17.9	60.1	0.0	0.0	0.0
Colorado	66.4	0.0	30.2	36.2	0.0	3.5	5.8	20.5	19.3	17.3	24.1	22.2	12.5	7.1	0.5	0.0	47.0	0.0	0.0	0.0	0.0
WYCO-B-1	204.9	0.0	66.8	138.0	0.1	13.8	16.8	48.1	62.1	64.1	54.8	43.2	33.0	21.4	52.5	0.0	66.4	60.1	0.0	0.0	0.0
Wyoming	138.1	0.0	36.6	101.4	0.1	11.2	10.5	27.1	42.5	46.8	29.4	21.9	20.5	14.3	52.0	0.0	17.9	60.1	0.0	0.0	0.0
Colorado	66.8	0.0	30.2	36.6	0.0	2.6	6.3	21.0	19.6	17.3	25.4	21.3	12.5	7.1	0.5	0.0	48.5	0.0	0.0	0.0	0.0
WYCO-B-2 (Agency Preferred Alternative)	204.5	0.0	68.2	136.2	0.1	17.1	17.3	45.3	60.7	64.1	59.1	40.7	30.8	21.4	52.5	0.0	63.4	60.1	0.0	0.0	0.0
Wyoming	138.1	0.0	36.6	101.4	0.1	11.2	10.5	27.1	42.5	46.8	29.4	21.9	20.5	14.3	52	0.0	17.9	60.1	0.0	0.0	0.0
Colorado	66.4	0.0	31.6	34.8	0.0	5.9	6.8	18.2	18.2	17.3	29.7	18.8	10.3	7.1	0.5	0.0	45.5	0.0	0.0	0.0	0.0
WYCO-B-3	204.5	0.0	66.4	138.0	0.1	14.7	16.6	47.3	61.8	64.1	55.2	42.6	32.8	21.4	52.5	0.0	64.4	60.1	0.0	0.0	0.0
Wyoming	138.1	0.0	36.6	101.4	0.1	11.2	10.5	27.1	42.5	46.8	29.4	21.9	20.5	14.3	52.0	0.0	17.9	60.1	0.0	0.0	0.0
Colorado	66.4	0.0	29.8	36.6	0.0	3.5	6.1	20.2	19.3	17.3	25.8	20.7	12.3	7.1	0.5	0.0	46.5	0.0	0.0	0.0	0.0
Alternative WYCO-C and Route Variations																					
WYCO-C	210.4	0.0	61.2	148.9	0.3	14.9	15.5	40.9	54.8	84.3	50.4	38.4	36.0	23.3	62.3	0.0	83.5	43.0	0.0	0.0	0.0
Wyoming	144.0	0.0	31.0	112.7	0.3	11.4	9.7	20.4	35.5	67.0	26.3	16.2	23.5	16.2	61.8	0.0	36.5	43.0	0.0	0.0	0.0
Colorado	66.4	0.0	30.2	36.2	0.0	3.5	5.8	20.5	19.3	17.3	24.1	22.2	12.5	7.1	0.5	0.0	47.0	0.0	0.0	0.0	0.0

TABLE 3-226

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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
WYCO-C-1	210.8	0.0	61.2	149.3	0.3	14.0	16.0	41.4	55.1	84.3	51.7	37.5	36.0	23.3	62.3	0.0	85.0	43.0	0.0	0.0	0.0
Wyoming	144.0	0.0	31.0	112.7	0.3	11.4	9.7	20.4	35.5	67.0	26.3	16.2	23.5	16.2	61.8	0.0	36.5	43.0	0.0	0.0	0.0
Colorado	66.8	0.0	30.2	36.6	0.0	2.6	6.3	21.0	19.6	17.3	25.4	21.3	12.5	7.1	0.5	0.0	48.5	0.0	0.0	0.0	
WYCO-C-2	210.4	0.0	62.6	147.5	0.3	17.3	16.5	38.6	53.7	84.3	56.0	35.0	33.8	23.3	62.3	0.0	82.0	43.0	0.0	0.0	0.0
Wyoming	144.0	0.0	31.0	112.7	0.3	11.4	9.7	20.4	35.5	67.0	26.3	16.2	23.5	16.2	61.8	0.0	36.5	43.0	0.0	0.0	0.0
Colorado	66.4	0.0	31.6	34.8	0.0	5.9	6.8	18.2	18.2	17.3	29.7	18.8	10.3	7.1	0.5	0.0	45.5	0.0	0.0	0.0	
WYCO-C-3	210.4	0.0	60.8	149.3	0.3	14.9	15.8	40.6	54.8	84.3	52.1	36.9	35.8	23.3	62.3	0.0	83.0	43.0	0.0	0.0	0.0
Wyoming	144.0	0.0	31.0	112.7	0.3	11.4	9.7	20.4	35.5	67.0	26.3	16.2	23.5	16.2	61.8	0.0	36.5	43.8	0.0	0.0	0.0
Colorado	66.4	0.0	29.8	36.6	0.0	3.5	6.1	20.2	19.3	17.3	25.8	20.7	12.3	7.1	0.5	0.0	46.5	0.0	0.0	0.0	
Alternative WYCO-D and Route Variation																					
WYCO-D	250.0	0.0	88.4	160.9	0.7	82.2	36.9	55.1	43.1	32.7	92.0	45.5	56.1	29.1	27.3	0.0	48.3	56.6	0.0	0.0	0.0
Wyoming	135.0	0.0	32.9	102.0	0.1	47.4	10.6	26.5	26.4	24.1	32.7	20	33.1	21.9	27.3	0.0	10.8	56.3	0.0	0.0	0.0
Colorado	115.0	0.0	55.5	58.9	0.6	34.8	26.3	28.6	16.7	8.6	59.3	25.5	23.0	7.2	0.0	0.0	37.5	0.3	0.0	0.0	
WYCO-D-1	250.0	0.0	88.0	161.3	0.7	82.2	37.2	54.8	43.1	32.7	93.7	44.0	55.9	29.1	27.3	0.0	47.8	56.6	0.0	0.0	0.0
Wyoming	135.0	0.0	32.9	102.0	0.1	47.4	10.6	26.5	26.4	24.1	32.7	2.00	33.1	21.9	27.3	0.0	10.8	56.3	0.0	0.0	0.0
Colorado	115.0	0.0	55.1	59.3	0.6	34.8	26.6	28.3	16.7	8.6	61.0	24.0	22.8	7.2	0.0	0.0	37.0	0.3	0.0	0.0	
Alternative WYCO-F and Route Variations																					
WYCO-F	218.9	0.0	60.6	158.1	0.2	17.2	20.1	55.2	61.7	64.7	59.3	45.2	36.1	25.3	53.0	0.0	78.7	61.2	0.0	0.0	0.0
Wyoming	152.5	0.0	30.4	121.9	0.2	13.7	14.3	34.7	42.4	47.4	35.2	23.0	23.6	18.2	52.5	0.0	31.7	61.2	0.0	0.0	0.0
Colorado	66.4	0.0	30.2	36.2	0.0	3.5	5.8	20.5	19.3	17.3	24.1	22.2	12.5	7.1	0.5	0.0	47.0	0.0	0.0	0.0	
WYCO-F-1	219.3	0.0	60.6	158.5	0.2	16.3	20.6	55.7	62	64.7	60.6	44.3	36.1	25.3	53	0.0	80.2	61.2	0.0	0.0	0.0
Wyoming	152.5	0.0	30.4	121.9	0.2	13.7	14.3	34.7	42.4	47.4	35.2	23	23.6	18.2	52.5	0.0	31.7	61.2	0.0	0.0	0.0
Colorado	66.8	0.0	30.2	36.6	0.0	2.6	6.3	21	19.6	17.3	25.4	21.3	12.5	7.1	0.5	0.0	48.5	0.0	0.0	0.0	

**TABLE 3-226
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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
WYCO-F-2	218.9	0.0	62.0	156.7	0.2	19.6	21.1	52.9	60.6	64.7	64.9	41.8	33.9	25.3	53.0	0.0	77.2	61.2	0.0	0.0	0.0
<i>Wyoming</i>	<i>152.5</i>	<i>0.0</i>	<i>30.4</i>	<i>121.9</i>	<i>0.2</i>	<i>13.7</i>	<i>14.3</i>	<i>34.7</i>	<i>42.4</i>	<i>47.4</i>	<i>35.2</i>	<i>23.0</i>	<i>23.6</i>	<i>18.2</i>	<i>52.5</i>	<i>0.0</i>	<i>31.7</i>	<i>61.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Colorado</i>	<i>66.4</i>	<i>0.0</i>	<i>31.6</i>	<i>34.8</i>	<i>0.0</i>	<i>5.9</i>	<i>6.8</i>	<i>18.2</i>	<i>18.2</i>	<i>17.3</i>	<i>29.7</i>	<i>18.8</i>	<i>10.3</i>	<i>7.1</i>	<i>0.5</i>	<i>0.0</i>	<i>45.5</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	
WYCO-F-3	218.9	0.0	60.2	158.5	0.2	17.2	20.4	54.9	61.7	64.7	61.0	43.7	35.9	25.3	53.0	0.0	78.2	61.2	0.0	0.0	0.0
<i>Wyoming</i>	<i>152.5</i>	<i>0.0</i>	<i>30.4</i>	<i>121.9</i>	<i>0.2</i>	<i>13.7</i>	<i>14.3</i>	<i>34.7</i>	<i>42.4</i>	<i>47.4</i>	<i>35.2</i>	<i>23.0</i>	<i>23.6</i>	<i>18.2</i>	<i>52.5</i>	<i>0.0</i>	<i>31.7</i>	<i>61.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>Colorado</i>	<i>66.4</i>	<i>0.0</i>	<i>29.8</i>	<i>36.6</i>	<i>0.0</i>	<i>3.5</i>	<i>6.1</i>	<i>20.2</i>	<i>19.3</i>	<i>17.3</i>	<i>25.8</i>	<i>20.7</i>	<i>12.3</i>	<i>7.1</i>	<i>0.5</i>	<i>0.0</i>	<i>46.5</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	

NOTES:

¹Bureau of Land Management Visual Resource management Class I is not crossed by any of the Project alternative routes.

²U.S. Forest Service Preservation, or Maximum Modification Visual Quality Objectives are not crossed by any of the Project alternative routes.

TABLE 3-227 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 and Route Variations																
WYCO-B (Applicant Preferred Alternative)	204.5	0.0	63.4	141.0	0.1	15.6	32.8	156.1	1.8	49.8	152.9	123.3	1.7	0.0	0.0	79.5
Wyoming	138.1	0.0	38.4	99.6	0.1	12.1	19.5	106.5	1.8	31.4	104.9	77.0	1.0	0.0	0.0	60.1
Colorado	66.4	0.0	25.0	41.4	0.0	3.5	13.3	49.6	0.0	18.4	48.0	46.3	0.7	0.0	0.0	19.4
WYCO-B-1	204.9	0.0	63.8	141	0.1	14.7	33.8	156.4	1.8	51.2	151.9	124.8	1.7	0.0	0.0	78.4
Wyoming	138.1	0.0	38.4	99.6	0.1	12.1	19.5	106.5	1.8	31.4	104.9	77.0	1.0	0.0	0.0	60.1
Colorado	66.8	0.0	25.4	41.4	0.0	2.6	14.3	49.9	0.0	19.8	47.0	47.8	0.7	0.0	0.0	18.3
WYCO-B-2 (Agency Preferred Alternative)	204.5	0.0	63.4	141.0	0.1	18.0	35.3	151.2				121.8	1.7	0.0	0.0	81.0
Wyoming	138.1	0.0	38.4	99.6	0.1	12.1	19.5	106.5	1.8	55.4	147.3	77.0	1.0	0.0	0.0	60.1
Colorado	66.4	0.0	25.0	41.4	0.0	5.9	15.8	44.7	0.0	24.0	42.4	44.8	0.7	0.0	0.0	20.9
WYCO-B-3	204.5	0.0	63.4	141.0	0.1	15.6	32.5	156.4	1.8	49.8	152.9	122.8	1.7	0.0	0.0	80.0
Wyoming	138.1	0.0	38.4	99.6	0.1	12.1	19.5	106.5	1.8	31.4	104.9	77.0	1.0	0.0	0.0	60.1
Colorado	66.4	0.0	25.0	41.4	0.0	3.5	13.0	49.9	0.0	18.4	48.0	45.8	0.7	0.0	0.0	19.9

TABLE 3-227 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-C and Route Variations																
WYCO-C	210.4	0.0	57.2	152.9	0.3	15.6	29.4	165.4	1.8	46.7	161.9	124.6	1.9	0.0	0.0	83.9
Wyoming	144.0	0.0	32.2	111.5	0.3	12.1	16.1	115.8	1.8	28.3	113.9	78.3	1.2	0.0	0.0	64.5
Colorado	66.4	0.0	25.0	41.4	0.0	3.5	13.3	49.6	0.0	18.4	48.0	46.3	0.7	0.0	0.0	19.4
WYCO-C-1	210.8	0.0	57.6	152.9	0.3	14.7	30.4	165.7	1.8	48.1	160.9	126.1	1.9	0.0	0.0	82.8
Wyoming	144	0.0	32.2	111.5	0.3	12.1	16.1	115.8	1.8	28.3	113.9	78.3	1.2	0.0	0.0	64.5
Colorado	66.8	0.0	25.4	41.4	0.0	2.6	14.3	49.9	0.0	19.8	47.0	47.8	0.7	0.0	0.0	18.3
WYCO-C-2	210.4	0.0	57.2	152.9	0.3	18.0	31.9	160.5	1.8	52.3	156.3	123.1	1.9	0.0	0.0	85.4
Wyoming	144.0	0.0	32.2	111.5	0.3	12.1	16.1	115.8	1.8	28.3	113.9	78.3	1.2	0.0	0.0	64.5
Colorado	66.4	0.0	25.0	41.4	0.0	5.9	15.8	44.7	0.0	24.0	42.4	44.8	0.7	0.0	0.0	20.9
WYCO-C-3	210.4	0.0	57.2	152.9	0.3	15.6	29.1	165.7	1.8	46.7	161.9	124.1	1.9	0.0	0.0	84.4
Wyoming	144	0.0	32.2	111.5	0.3	12.1	16.1	115.8	1.8	28.3	113.9	78.3	1.2	0.0	0.0	64.5
Colorado	66.4	0.0	25.0	41.4	0.0	3.5	13.0	49.9	0.0	18.4	48.0	45.8	0.7	0.0	0.0	19.9
WYCO-D and Route Variation																
WYCO-D	250.0	0.9	53.4	195.0	0.7	67.2	61.0	121.8	0.3	72.1	177.6	96.7	8.2	0.0	0.0	145.1
Wyoming	135.0	0.0	24.4	110.5	0.1	46.6	28.2	60.2	0.0	32.4	102.6	67.1	0.0	0.0	0.0	67.9
Colorado	115.0	0.9	29.0	84.5	0.6	20.6	32.8	61.6	0.3	39.7	75.0	29.6	8.2	0.0	0.0	77.2
WYCO-D-1	250.0	0.9	53.4	195.0	0.7	67.2	60.7	122.1	0.3	72.1	177.6	96.2	8.2	0.0	0.0	145.6
Wyoming	135.0	0.0	24.4	110.5	0.1	46.6	28.2	60.2	0.0	32.4	102.6	67.1	0.0	0.0	0.0	67.9
Colorado	115.0	0.9	29.0	84.5	0.6	20.6	32.5	61.9	0.3	39.7	75.0	29.1	8.2	0.0	0.0	77.7

TABLE 3-227 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-F and Route Variations																
WYCO-F	218.9	0.0	57.0	161.7	0.2	18.0	39.3	161.6	1.8	55.5	161.6	136.6	3.3	0.0	0.0	79.0
Wyoming	152.5	0.0	32.0	120.3	0.2	14.5	26.0	112.0	1.8	37.1	113.6	90.3	2.6	0.0	0.0	59.6
Colorado	66.4	0.0	25.0	41.4	0.0	3.5	13.3	49.6	0.0	18.4	48.0	46.3	0.7	0.0	0.0	19.4
WYCO-F-1	219.3	0.0	57.4	161.7	0.2	17.1	40.3	161.9	1.8	56.9	160.6	138.1	3.3	0.0	0.0	77.9
Wyoming	152.5	0.0	32.0	120.3	0.2	14.5	26.0	112.0	1.8	37.1	113.6	90.3	2.6	0.0	0.0	59.6
Colorado	66.8	0.0	25.4	41.4	0.0	2.6	14.3	49.9	0.0	19.8	47.0	47.8	0.7	0.0	0.0	18.3
WYCO-F-2	218.9	0.0	57.0	161.7	0.2	20.4	41.8	156.7	1.8	61.1	156.0	135.1	3.3	0.0	0.0	80.5
Wyoming	152.5	0.0	32.0	120.3	0.2	14.5	26.0	112.0	1.8	37.1	113.6	90.3	2.6	0.0	0.0	59.6
Colorado	66.4	0.0	25.0	41.4	0.0	5.9	15.8	44.7	0.0	24.0	42.4	44.8	0.7	0.0	0.0	20.9
WYCO-F-3	218.9	0.0	57.0	161.7	0.2	18.0	39.0	161.9	1.8	55.5	161.6	136.1	3.3	0.0	0.0	79.5
Wyoming	152.5	0.0	32.0	120.3	0.2	14.5	26.0	112.0	1.8	37.1	113.6	90.3	2.6	0.0	0.0	59.6
Colorado	66.4	0.0	25.0	41.4	0.0	3.5	13.0	49.9	0.0	18.4	48.0	45.8	0.7	0.0	0.0	19.9

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. Three historic trails designated by the BLM Rawlins Field Office would be crossed by this alternative route: (1) Cherokee Historic Trail, (2) Overland Historic Trail, and (3) Rawlins to Baggs Road. The Cherokee Historic Trail would be crossed by Link W411 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 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

Viewing locations for the route variations are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 78.0 miles of BLM-administered land with 17.9 miles in VRM Class III and 60.1 miles in VRM Class IV within the 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.

BLM Visual Resource Management Classes for the route variations are the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-B would cross 4.0 miles of Class B and 90.3 miles of Class C landscapes in the Rawlins Field Office. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Freezeout Mountains

Class B SQRUs

- Adobe Town
- Atlantic Rim¹
- Bolton Ranch¹
- Cottonwood Draw
- Flat Tops¹
- Medicine Bow River¹
- Parallel Ridges¹
- Platte North¹
- Powder Rim¹
- Rawlins Uplift
- Red Rim¹
- Rendle Hill
- Robbers Gulch¹

Class C SQRUs

- Cedar Breaks¹
- Continental Divide
- Creston¹
- Dana Meadows¹
- Hanna Uplift¹
- Little Medicine Bow River¹
- Muddy Creek
- Overland Trail¹
- Sage Creek
- Sage Flats¹
- Sand Creek¹
- Separation Flats¹
- Shamrock Hills
- Spade Flats
- Walcott¹
- West Separation Flats¹

Note: ¹SQRUs crossed by the Project

Scenic Quality for the route variations are the same as Alternative WYCO-B.

Sensitivity Level Rating Units

Alternative WYCO-B would cross 44.2 miles of high sensitivity, 28.8 miles of moderate sensitivity, and 65.2 miles of low sensitivity lands. The following SLRUs were inventoried within 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

SLRUs for the route variations are the same as Alternative WYCO-B.

Distance Zones

This alternative route would cross 137.9 miles within the foreground-middleground distance zone and 0.3 mile in the background distance zone.

Distance Zones for the route variations are the same as Alternative WYCO-B.

Visual Resource Inventory Classes

This alternative route would cross 24.3 miles of VRI Class II, 36.8 miles of VRI Class III, and 77.1 miles of VRI Class IV within the Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, and Powder Rim.

VRI Classes for the route variations are the same as Alternative WYCO-B.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-B

This alternative route would result in modifications to all landscapes crossed based on the introduction of transmission line structures (including tower pads), construction and maintenance 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 cuerdas, contrast would increase based on strong geometric vertical lines as compared to the rolling, sinuous lines associated with the topography.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Impacts on scenery are the same as Alternative WYCO-B.

Viewing Locations

Alternative WYCO-B

Residences

Low impacts are anticipated on views from residences within 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.

Dispersed residences north of the community of Hanna as well as dispersed residences adjacent to Walcott Junction would have a moderate level of visual impacts, 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

Moderate impacts on views from I-80, south of Fort Steele, would occur in the same area as described above for dispersed residences where the Project would cross 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 H. High impacts are anticipated on views from Hanna Draw Road, north of the community of Hanna, where the Project would cross 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 within view. For additional analysis, refer to the contrast rating worksheet for KOP #222 in Appendix H.

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 H.

High impacts are anticipated on views from the Continental Divide NST (and associated SRMA) within 0.5 mile of where the Project would cross 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 that the Project would traverse moderately steep, sagebrush-dominated terrain with few existing cultural modifications (although there is an existing lower voltage transmission line approximately 1 mile away for this alternative). 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 within the viewshed of the scenic trail. For the more detailed assessment of impacts on the Continental Divide NST, refer to Section 3.2.17.5.

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 H.

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 and therefore, visual contrast resulting from the Project would also 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 within 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 H. 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.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Impacts on viewing locations are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

Alternative WYCO-B

Bureau of Land Management Visual Resource Management Classes

Of the 78.0 miles of BLM-administered land crossed by this alternative route in the Rawlins Field Office, Alternative WYCO-B would have 1.0 mile 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 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.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Compliance with Federal Agency Visual Management Objectives is the same as Alternative WYCO-B

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-228 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-B AND ROUTE VARIATIONS (WYOMING)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-B (Applicant Preferred Alternative)	85,298	5,631	6.6	917,056	196,677	21.4	1,930,299	328,093	17.0
WYCO-B-1	85,298	5,631	6.6	917,056	196,677	21.4	1,930,299	328,093	17.0
WYCO-B-2 (Agency Preferred Alternative)	85,298	5,631	6.6	917,056	196,677	21.4	1,930,299	328,093	17.0
WYCO-B-3	85,298	5,631	6.6	917,056	196,677	21.4	1,930,299	328,093	17.0

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variations consists of low relief ridges and cuervas, 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 more influenced by the Project as it bisects these units; where the Project would cross 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

Scenery crossed by this alternative route would include Class B landscapes 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 30.2 miles of Class B scenery and 36.2 miles of Class C scenery would be crossed by Alternative WYCO-B.

Route Variation WYCO-B-1 would cross an additional 0.4 mile of Class C scenery associated with the Rolling Steppe landscape.

Route Variation WYCO-B-2 would cross an additional 1.4 miles of Class B scenery associated with the Arid Juniper Hills landscape and 1.4 fewer miles of Class C scenery.

Route Variation WYCO-B-3 would cross 0.4 fewer miles of Class B and an additional 0.4 miles of Class C scenery associated with the Rolling Steppe landscape.

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 proposed backcountry 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 this alternative, dispersed recreation is located throughout the publically administered lands.

Special Designations

Deerlodge Road, contained within the boundaries of Dinosaur National Monument, is located approximately 1.25 miles northwest of Link C175. 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 include:

- #150: Dinosaur National Monument (Deerlodge Road)
- #252: Colorado State Highway 318 (west of Maybell)
- #254: U.S. Highway 40 (east of Dinosaur)
- #287: Moffat County Road 10
- #289: Godiva Rim Proposed Backcountry Road
- #290: Sevenmile Ridge Destination Route
- #299: East Cross Mountain River Access [simulation]

Route Variation WYCO-B-1 would be located more than 0.5 mile from residences adjacent to the Little Snake River.

Route Variation WYCO-B-2 would cross Deerlodge Road and would be located: (1) within the boundaries of the Dinosaur National Monument, (2) within 0.5 mile of dispersed residences adjacent to U.S. Highway 40, and (3) parallel to U.S. Highway 40 for approximately 6 miles along Link C93.

Route Variation WYCO-B-3 is similar to Alternative WYCO-B except for being located directly adjacent to the existing high voltage transmission lines in proximity to Dinosaur National Monument and U.S. Highway 40.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 47.0 miles of BLM-administered land, with all 47.0 miles in VRM Class III within the Little Snake and White River Field Offices. These VRM Class III lands associated with this alternative route include lands adjacent to Sevenmile Ridge, Little Snake River, the Yampa River, and U.S. Highway 40.

Route Variation WYCO-B-1 would cross 1.5 miles more VRM Class III lands than Alternative WYCO-B.

Route Variation WYCO-B-2 would cross 1.5 fewer miles VRM Class III lands than Alternative WYCO-B.

Route Variation WYCO-B-3 would cross 0.5 fewer mile of VRM Class III lands than Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-B would cross 34.9 miles of Class B and 31.6 miles of Class C landscapes in the Little Snake and White River Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Cross Mountain Canyon

Class B SQRUs

- Coal Ridge
- Cross Mountain
- Douglas Draw/Peck Mesa¹
- Elk Springs
- Maybell¹
- Pinyon Ridge¹
- Seven Mile¹
- Skull Creek
- Spring Creek
- Twelvemile Mesa
- Windy Gulch

Class C SQRUs

- Cedar Springs¹
- Elk Springs South¹
- Fonce Flats¹
- Great Divide
- Hiawatha/Powder Wash
- M.F. Mountain¹

Note: ¹SQRUs crossed by the Project

Route Variation WYCO-B-1 would cross 0.4 mile more of Class B than Alternative WYCO-B.

Route Variation WYCO-B-2 would cross 2.3 miles more of Class B and 2.4 fewer miles of Class C than Alternative WYCO-B. Variation WYCO-B-2 would also influence the Lily Park (Class B SQRU) and Lily Park Foothills (Class C SQRU) in addition to SQRUs associated with Alternative WYCO-B.

Route Variation WYCO-B-3 would cross 0.1 mile more of Class B and 0.1 fewer mile of Class C than Alternative WYCO-B. This variation wouldn't cross but would influence the Elk Springs South SQRU.

Sensitivity Level Rating Units

Alternative WYCO-B would cross 9.0 miles of high sensitivity, 27.3 miles of moderate sensitivity, and 30.2 miles of low sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

High SLRUs

- Godiva Rim

Moderate SLRUs

- Godiva/Greystone
- Moosehead
- White River West

Low SLRUs

- Danforth Hills
- Elk Springs
- Great Divide

Route Variation WYCO-B-1 would cross 1.4 miles more of high sensitivity and 1.0 fewer mile of moderate sensitivity lands than Alternative WYCO-B.

Route Variation WYCO-B-2 would cross 3.0 miles more of moderate sensitivity and 3.1 fewer miles of low sensitivity lands than Alternative WYCO-B.

Route Variation WYCO-B-3 is the same as Alternative WYCO-B.

Distance Zones

Alternative WYCO-B would cross 55.3 miles within the foreground-middleground distance zone and 11.1 miles in the background distance zone.

Route Variation WYCO-B-1 would cross 0.4 mile more of the background distance zone than Alternative WYCO-B.

Route Variation WYCO-B-2 is the same as Alternative WYCO-B.

Route Variation WYCO-B-3 would cross 0.1 mile more of the foreground-middleground distance zone than Alternative WYCO-B.

Visual Resource Inventory Classes

This alternative route would cross 5.8 miles of VRI Class II, 13.5 miles of VRI Class III, and 47.0 miles of VRI Class IV within the Little Snake and White River Field Offices. The areas of VRI Class II are associated with Godiva Rim.

Route Variation WYCO-B-1 would cross 1.5 miles more of VRI Class III and 0.9 fewer mile of VRI Class IV than Alternative WYCO-B.

Route Variation WYCO-B-2 would cross 2 miles more of VRI Class III and 1.8 fewer miles of VRI Class IV than Alternative WYCO-B.

Route Variation WYCO-B-3 would cross 0.1 mile more of VRI Class IV than Alternative WYCO-B.

Environmental Consequences (Colorado)

Scenery

Alternative WYCO-B

Effects of the Project on the rural character of landscapes crossed by WYCO-B 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 would cross 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.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Impacts on scenery are similar to Alternative WYCO-B.

Viewing Locations

Alternative WYCO-B

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 H.

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 would cross 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 H.

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 this alternative route, 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 the Project would be viewed from.

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 #295 in Appendix H. 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 #150 in Appendix H.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Route Variation WYCO-B-1 would have reduced impacts on views from dispersed residences adjacent to the Little Snake River since the Project would be located over 0.5 mile from the closest residence in this area.

Route Variation WYCO-B-2 would have high impacts on views from dispersed residences where the Project would be located within 0.5 mile of these residences and be located approximately 1 mile away from the existing transmission lines. Since the high level of visual impacts are a result of the introduction of the Project's transmission structures into these residence's viewshed, there are limited opportunities to mitigate these impacts without relocating the Project. This route variation also would generate high impacts on Deerlodge Road, access to Dinosaur National Monument, as well as the national monument itself. Due to the limited influence from the existing transmission lines, views from this portion of the Dinosaur National Monument would be dominated by the Project. To reduce contrast introduced by the Project, maximizing the span between transmission line structures at the crossing of Deerlodge Road would reduce the visual dominance of these structures. For additional analysis, refer to the contrast rating worksheet for KOP #150 in Appendix H. Moderate impacts on views from U.S. Highway 40 would occur where the Project parallels the highway for approximately 6 miles in an area minimally influenced by the existing transmission lines.

Route Variation WYCO-B-3 would be similar to Alternative WYCO-B except for reduced impacts on views from Deerlodge Road, Dinosaur National Monument, and U.S. Highway 40 due to the Project being located closer to the existing transmission lines and would therefore result in weaker visual contrast on these views.

Federal Agency Visual Management Objectives

Alternative WYCO-B

Bureau of Land Management Visual Resource Management Classes

Of the 47.0 miles of BLM-administered land crossed by this alternative route in the Little Snake and White River Field Offices, Alternative WYCO-B would have 0.7 miles not in compliance with VRM Class III objectives, including:

- Godiva Rim Proposed Backcounty Road (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.

Alternative WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Compliance with BLM VRM Classes is the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-B (Applicant Preferred Alternative)	658	56	8.5	554,203	147,770	26.7	1,125,326	115,867	10.3
WYCO-B-1	658	56	8.5	554,203	149,052	26.9	1,125,326	115,867	10.3
WYCO-B-2 (Agency Preferred Alternative)	658	56	8.5	560,937	149,662	26.7	1,137,743	113,210	10.0
WYCO-B-3	658	56	8.5	554,203	148,303	26.8	1,125,326	115,232	10.2

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variations 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, and variation WYCO-B-1, as they bisect this unit which has limited cultural modifications concentrated along the Little Snake River.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Scenery

Scenery crossed is similar to 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. A total of 31.0 miles of Class B scenery, 112.7 miles of Class C scenery, and 0.3 mile of developed land would be crossed by Alternative WYCO-C.

The route variations would cross the same scenery as Alternative WYCO-C.

Viewing Locations

Viewing locations 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 W490 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 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

Viewing locations for the route variations are the same as Alternative WYCO-C.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 79.5 miles of BLM-administered land, with 36.5 miles in VRM Class III and 43.0 miles in VRM Class IV within the Rawlins Field Office. The VRM Class III lands associated with this alternative are similar to those discussed for Alternative WYCO-B.

Federal Agency Visual Management Objectives for the route variations are the same as Alternative WYCO-C.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-C would cross 50.7 miles of Class B and 93.4 miles of Class C landscapes in the Rawlins Field Office. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Freezeout Mountains

Class B SQRUs

- Adobe Town¹
- Atlantic Rim¹
- Bolton Ranch¹
- Cottonwood Draw
- Delaney Rim¹
- Flat Tops
- Medicine Bow River¹
- Parallel Ridges¹
- Platte North¹
- Powder Rim¹
- Rawlins Uplift
- Red Rim¹
- Rendle Hill
- Robbers Gulch

Class C SQRUs

- Cedar Breaks¹
- Continental Divide¹
- Creston¹
- Dana Meadows¹
- Great Basin Divide
- Hanna Uplift¹
- Little Medicine Bow River¹
- Overland Trail¹
- Sage Creek
- Sage Flats¹
- Sand Creek
- Separation Flats¹
- Shamrock Hills
- Spade Flats
- Walcott¹
- West Separation Flats¹

Note: ¹SQRUs crossed by the Project

Scenic Quality for the route variations are the same as Alternative WYCO-C.

Sensitivity Level Rating Units

Alternative WYCO-C would cross 48.9 miles of high sensitivity, 19.8 miles of moderate sensitivity, and 75.5 miles of low sensitivity lands. The following SLRUs were inventoried within 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

SLRUs for the route variations are the same as Alternative WYCO-C.

Distance Zones

This alternative route would cross 143.9 miles within the foreground-middleground distance zone and 0.3 mile in the background distance zone. Distance Zones for the route variations are the same as Alternative WYCO-C.

Visual Resource Inventory Classes

This alternative route would cross 34.5 miles of VRI Class II, 23.2 miles of VRI Class III, and 86.5 miles of VRI Class IV within the 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.

VRI Classes for the route variations are the same as Alternative WYCO-C.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-C

Impacts on scenery are similar to 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.

Alternative WYCO-C Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Impacts on scenery are the same as Alternative WYCO-B.

Viewing Locations

Alternative WYCO-C

Impacts on viewing locations 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 along this alternative route as well, but the Project would cross 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 H. High impacts are also anticipated on views from the Cherokee Historic Trail on this alternative route, except the Project would cross 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 within the trail's viewshed. For additional analysis, refer to the contrast rating worksheet for KOP #276 in Appendix H.

Alternative WYCO-C Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Impacts on viewing locations are the same as Alternative WYCO-B.

Federal Agency Visual Management Objectives

Alternative WYCO-C

Bureau of Land Management Visual Resource Management Classes

Of the 79.5 miles of BLM-administered land crossed by this alternative in the Rawlins Field Office, Alternative WYCO-C 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 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.

Alternative WYCO-C Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Compliance with Federal Agency Visual Management Objectives is the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-230 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-C AND ROUTE VARIATIONS (WYOMING)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-C	85,298	5,631	6.6	951,341	208,158	21.9	2,275,226	338,573	14.9
WYCO-C-1	85,298	5,631	6.6	897,309	203,699	22.7	2,227,657	338,573	15.2
WYCO-C-2	85,298	5,631	6.6	1,005,373	212,616	21.1	2,275,226	338,573	14.9
WYCO-C-3	85,298	5,631	6.6	951,341	208,158	21.9	2,275,226	338,573	14.9

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variations consists of low relief ridges and cuetas, 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 SQRUs) 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

Scenery crossed is the same as Alternative WYCO-B including the associated route variations (i.e., Route Variation WYCO-C-1 is the same as Route Variation WYCO-B-1).

Viewing Locations

Viewing locations are the same as Alternative WYCO-B including the associated route variations.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative WYCO-B including the associated route variations.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative WYCO-B including the associated route variations.

Environmental Consequences (Colorado)

Scenery

Impacts on scenery are the same as Alternative WYCO-B including the associated route variations (i.e., Route Variation WYCO-C-1 is the same as Route Variation WYCO-B-1).

Viewing Locations

Impacts on viewing locations are the same as Alternative WYCO-B including the associated route variations.

Federal Agency Visual Management Objectives

Alternative WYCO-C

Compliance with Federal Agency Visual Management Objectives is the same as Alternative WYCO-B including the associated route variations.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-231 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-C AND ROUTE VARIATIONS (COLORADO)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-C	658	56	8.5	554,203	147,770	26.7	1,125,326	115,867	10.3
WYCO-C-1	658	56	8.5	554,203	149,052	26.9	1,125,326	115,867	10.3
WYCO-C-2	658	56	8.5	560,937	149,662	26.7	1,137,743	113,210	10.0
WYCO-C-3	658	56	8.5	554,203	148,303	26.8	1,125,326	115,232	10.2

Effects on BLM SQRUs are the same as Alternative WYCO-B including the associated route variations.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Scenery

Scenery crossed is similar to Alternative WYCO-B. A total of 32.9 miles of Class B scenery, 102.0 miles of Class C scenery, and 0.1 mile of developed land would be crossed by Alternative WYCO-D.

Route Variation WYCO-D-1 would cross the same scenery as Alternative WYCO-D.

Viewing Locations

Viewing locations 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 would cross 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 within the Upper Muddy Creek Watershed/Grizzly WHMA would have views of the Project on Link W110.

KOPs specific to Alternative WYCO-D include:

- #67: Dispersed residences south of Baggs
- #73: Baggs residential
- #177: Overland Trail historical monument (Wyoming Highway 789)
- #197: Hanna residential
- #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

Viewing locations for the route variation are the same as Alternative WYCO-D.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 67.1 miles of BLM-administered land, with 10.8 miles in VRM Class III and 56.3 miles in VRM Class IV within the 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.

Federal Agency Visual Management Objectives for the route variation are the same as Alternative WYCO-D.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-D would cross 67.2 miles of Class B and 67.9 miles of Class C landscapes in the Rawlins Field Office. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Freezeout Mountains

Class B SQRUs

- Atlantic Rim¹
- Bolton Ranch¹
- Deep Creek
- Doty Mountain¹
- Little Snake Valley
- Medicine Bow River¹
- Parallel Ridges¹
- Platte North¹
- Rawlins Uplift
- Red Rim¹
- Rendle Hill
- Robbers Gulch¹
- Sand Creek Hills

Class C SQRUs

- Chalk Bluff
- Creston¹
- Dana Meadows¹
- Hanna Uplift¹
- Little Medicine Bow River¹
- Muddy Creek¹
- Sage Creek
- Separation Flats¹
- Shamrock Hills
- Spade Flats¹
- The Sand Hills
- Walcott¹
- West Separation Flats¹

Note: ¹SQRUs crossed by the Project

Scenic Quality for the route variation is the same as Alternative WYCO-D.

Sensitivity Level Rating Units

Alternative WYCO-D would cross 34.4 miles of high sensitivity, 42.4 miles of moderate sensitivity, and 58.3 miles of low sensitivity lands. The following SLRUs were inventoried within 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

SLRUs for the route variation are the same as Alternative WYCO-D.

Distance Zones

The Project would be completely located within the foreground-middleground distance zone for Alternative WYCO-D and associated route variation.

Visual Resource Inventory Classes

This alternative route would cross 22.4 miles of VRI Class II, 43.7 miles of VRI Class III, and 68.9 miles of VRI Class IV within the Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, and Overland Trail.

VRI Classes for the route variation are the same as Alternative WYCO-D.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-D

Impacts on scenery are similar to Alternative WYCO-B.

Alternative WYCO-D Route Variation (WYCO-D-1)

Impacts on scenery are the same as Alternative WYCO-D.

Viewing Locations

Impacts on viewing locations are similar to 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 would cross the historic trail on the east side of the road. To reduce contrast produced by the Project, selective mitigation 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 H. 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 (WY 789) would result in a high impact on views from the scenic highway. The Project would cross 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 H. Moderate impacts would occur on views from the Lincoln Highway (U.S. Highway 30), adjacent to Hanna, where the Project would cross 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 H.

Special Designations

Moderate impacts are anticipated on views from the Upper Muddy Creek Watershed/Grizzly WHMA where the Project would be located within 0.5 mile of this special designation, associated with moderate concern viewers.

Federal Agency Visual Management Objectives

Alternative WYCO-D

Bureau of Land Management Visual Resource Management Classes

Of the 67.1 miles of BLM-administered land crossed by this alternative in the Rawlins Field Office, all of Alternative WYCO-D would be in compliance with VRM Class III objectives.

Alternative WYCO-D Route Variation (WYCO-D-1)

Compliance with Federal Agency Visual Management Objectives is the same as Alternative WYCO-D.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-232 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-D AND ROUTE VARIATION (WYOMING)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-D	85,298	5,410	6.3	874,982	244,900	28.0	1,708,661	269,343	15.8
WYCO-D-1	85,298	5,410	6.3	874,982	244,900	28.0	1,708,661	269,343	15.8

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variations consists of low relief ridges and cuetas, 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 SQRUs) 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

Scenery crossed is similar to 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 would cross the Yampa River landscape, Class B scenery, south of U.S. Highway 40. A total of 55.5 miles of Class B scenery, 58.9 miles of Class C scenery, and 0.6 mile of developed land would be crossed by Alternative WYCO-D.

Route Variation WYCO-D-1 would cross 0.4 fewer mile of Class B and an additional 0.4 mile of Class C associated with the Sagebrush Hills landscape.

Viewing Locations

Viewing locations 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 would cross 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 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)
- #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)

Route Variation WYCO-D-1 is similar to Alternative WYCO-D except for being located directly adjacent to the existing high voltage transmission lines in proximity to Dinosaur National Monument and U.S. Highway 40.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 37.8 miles of BLM-administered land, with 37.5 miles in VRM Class III and 0.3 mile in VRM Class IV within 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 that this alternative includes lands adjacent to Colorado State Highway 13 and U.S. Highway 40.

Variation WYCO-D-1 would cross 0.5 fewer mile in VRM Class III than Alternative WYCO-D.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-D would cross 45.9 miles of Class B and 69.2 miles of Class C landscapes in the Little Snake and White River Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class B SQRUs

- Elkhead¹
- Juniper Mountain¹
- Pinyon Ridge¹
- Steamboat Valley/Stokes Gulch/Twenty Mile Park¹
- Yampa River Valley/Hayden¹

Class C SQRUs

- Cedar Springs¹
- Elk Springs South
- Great Divide¹
- M.F. Mountain¹

Note: ¹SQRUs crossed by the Project

Route Variation WYCO-D-1 would cross 0.1 mile more of Class B and 0.1 fewer mile of Class C landscapes than Alternative WYCO-D. This route variation would not cross, but influence the Elk Springs South SQRU.

Sensitivity Level Rating Unit

Alternative WYCO-D would cross 10.5 miles of high sensitivity, 60.4 miles of moderate sensitivity, and 44.1 miles of low sensitivity lands. The following SLRUs were inventoried within 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

SLRUs for the route variation is the same as Alternative WYCO-D.

Distance Zones

The Project would be completely located within the foreground-middleground distance zone. Distance Zones for the route variation are the same as Alternative WYCO-D.

Visual Resource Inventory Classes

This alternative route would cross 3.3 miles of VRI Class II, 45.9 miles of VRI Class III, and 65.8 miles of VRI Class IV within the Little Snake and White River Field Offices. The areas of VRI Class II are associated with the Yampa River.

Route Variation WYCO-D-1 would cross 0.1 mile more of VRI Class IV than Alternative WYCO-D.

Environmental Consequences (Colorado)

Scenery

Alternative WYCO-D

Impacts on scenery for this alternative are similar to 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 within the right-of-way. Selective mitigation measures applied within 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 would also 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 within the right-of-way and the introduction of transmission lines structures. Selective mitigation applied within the Yampa River landscape to reduce the contrast includes limiting the clearing of cottonwoods within the right-of-way and minimizing the construction of access roads adjacent to the river.

Alternative WYCO-D Route Variation (WYCO-D-1)

Impacts on scenery are similar to Alternative WYCO-D.

Viewing Locations

Alternative WYCO-D

Impacts on viewing locations 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 H. 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 H. 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 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 H.

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 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 access roads.

Low impacts would occur on views from the first location where the Project would cross 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 its closer proximity. Selective mitigation 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.

Alternative WYCO-D Route Variation (WYCO-D-1)

Route Variation WYCO-D-1 would be similar to Alternative WYCO-D except for reduced impacts on views from Deerlodge Road, Dinosaur National Monument, and U.S. Highway 40 due to the Project being located closer to the existing transmission lines and therefore producing weaker visual contrast on these views.

Federal Agency Visual Management Objectives

Alternative WYCO-D

Bureau of Land Management Visual Resource Management Classes

Of the 37.8 miles of BLM-administered land crossed by this alternative in the Little Snake and White River Field Offices, Alternative WYCO-D 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.

Alternative WYCO-D Route Variation (WYCO-D-1)

Compliance with VRM Class III objectives is the same for the route variation as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-233 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-D AND ROUTE VARIATION (COLORADO)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-D	268,126	20,249	7.6	737,879	152,362	20.6	1,077,826	269,679	25.0
WYCO-D-1	268,126	20,249	7.6	737,879	153,000	20.7	1,077,826	269,044	25.0

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variation consists of rolling landforms and riparian corridors with cultural modifications which consist of transmission lines generally concentrated around Craig, Colorado and U.S. Highway 40; and 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 Project where it occurs through rolling terrain near the Yampa River adjacent to existing transmission lines.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Scenery

Scenery crossed is similar to Alternative WYCO-B. A total of 30.4 miles of Class B scenery, 121.9 miles of Class C scenery, and 0.2 mile of developed land would be crossed by Alternative WYCO-F.

The route variations would cross the same scenery as Alternative WYCO-F.

Viewing Locations

Viewing locations are similar to Alternative WYCO-B, except the Cherokee Historic Trail would be crossed three times on Links W120 and W124.

KOPs specific to Alternative WYCO-F 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

Viewing locations for the route variations are the same as Alternative WYCO-F.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 92.9 miles of BLM-administered land, with 31.7 miles in VRM Class III and 61.2 miles in VRM Class IV within the Rawlins Field Office. The VRM Class III lands associated with this alternative are similar to those discussed for Alternative WYCO-B.

Federal Agency Visual Management Objectives for the route variations are the same as Alternative WYCO-F.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative WYCO-F would cross 64.7 miles of Class B and 87.9 miles of Class C landscapes in the Rawlins Field Office. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Freezeout Mountains

Class B SQRUs

- Atlantic Rim¹
- Bolton Ranch¹
- Cottonwood Draw
- Deep Creek
- Doty Mountain
- Flat Tops
- Little Snake Valley
- Medicine Bow River¹
- Parallel Ridges¹
- Platte North¹
- Powder Rim¹
- Rawlins Uplift
- Red Rim¹
- Rendle Hill
- Robbers Gulch¹

Class C SQRUs

- Cedar Breaks¹
- Continental Divide
- Creston¹
- Dana Meadows¹
- Hanna Uplift¹
- Little Medicine Bow River¹
- Muddy Creek
- Sage Creek
- Sage Flats
- Sand Creek¹
- Separation Flats¹
- Shamrock Hills
- Spade Flats
- Walcott¹
- West Separation Flats¹

Note: ¹SQRUs crossed by the Project

Scenic Quality for the route variations are the same as Alternative WYCO-F.

Sensitivity Level Rating Unit

Alternative WYCO-F would cross 44.7 miles of high sensitivity, 36.5 miles of moderate sensitivity, and 71.4 miles of low sensitivity lands. The following SLRUs were inventoried within 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

SLRUs for the route variations are the same as Alternative WYCO-F.

Distance Zones

This alternative route would cross 152.3 miles within the foreground-middleground distance zone and 0.3 mile in the background distance zone. Distance Zones for the route variations are the same as Alternative WYCO-F.

Visual Resource Inventory Classes

This alternative route would cross 26.7 miles of VRI Class II, 40.3 miles of VRI Class III, and 85.6 miles of VRI Class IV within the Rawlins Field Office. The areas of VRI Class II are associated with the North Platte River, Continental Divide NST, Atlantic Rim, and Powder Rim. VRI Classes for the route variations are the same as Alternative WYCO-F.

Environmental Consequences (Wyoming)

Scenery

Alternative WYCO-F

Impacts on scenery are similar to Alternative WYCO-B.

Alternative WYCO-F Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Impacts on scenery are the same as Alternative WYCO-F.

Viewing Locations

Alternative WYCO-F

Impacts on viewing locations 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 would cross the historic trail. At two of these locations, the Project would cross 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 within the trail's viewshed.

Alternative WYCO-F Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Impacts on viewing locations are the same as Alternative WYCO-F.

Federal Agency Visual Management Objectives

Alternative WYCO-F

Bureau of Land Management Visual Resource Management Classes

Of the 92.9 miles of BLM-administered land crossed by this alternative in the Rawlins Field Office, Alternative WYCO-F would have 2.6 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. 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.

Alternative WYCO-F Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Compliance with Federal Agency Visual Management Objectives is the same as Alternative WYCO-F.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-234 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-F AND ROUTE VARIATIONS (WYOMING)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-F	85,298	5,631	6.6	951,297	259,659	27.3	1,841,368	315,847	17.2
WYCO-F-1	85,298	5,631	6.6	951,297	259,659	27.3	1,841,368	315,847	17.2
WYCO-F-2	85,298	5,631	6.6	951,297	259,659	27.3	1,841,368	315,847	17.2
WYCO-F-3	85,298	5,631	6.6	951,297	259,659	27.3	1,841,368	315,847	17.2

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variations 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

Scenery crossed is the same as Alternative WYCO-B including the associated route variations (i.e., Route Variation WYCO-F-1 is the same as Route Variation WYCO-B-1).

Viewing Locations

Viewing locations are the same as Alternative WYCO-B including the associated route variations.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative WYCO-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative WYCO-B.

Environmental Consequences (Colorado)

Scenery

Alternative WYCO-F

Impacts on scenery are the same as Alternative WYCO-B including the associated route variations (i.e., Route Variation WYCO-F-1 is the same as Route Variation WYCO-B-1).

Viewing Locations

Alternative WYCO-F

Impacts on viewing locations are the same as Alternative WYCO-B including the associated route variations.

Federal Agency Visual Management Objectives

Alternative WYCO-F

Compliance with Federal Agency Visual Management Objectives is the same as Alternative WYCO-B including the associated route variations.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-235 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE WYCO-F AND ROUTE VARIATIONS (COLORADO)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
WYCO-F	658	56	8.5	554,203	149,229	26.9	1,125,326	116,224	10.3
WYCO-F-1	658	56	8.5	554,203	150,511	27.2	1,125,326	116,224	10.3
WYCO-F-2	658	56	8.5	560,937	151,122	26.9	1,137,743	113,567	10.0
WYCO-F-3	658	56	8.5	554,203	149,762	27.0	1,125,326	115,590	10.3

Effects on SQRUs are the same as Alternative WYCO-B including the associated route variations.

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 3-236 and 3-237.

Alternative COUT BAX-B

Affected Environment (Colorado)

Scenery

Scenery crossed by this alternative route is typical of the Uinta Basin section of the Colorado Plateaus physiographic province. From an area approximately 20 miles east of the community of Rangely, the Project would cross 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. An area of particular concern within 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 21.4 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 would cross 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.

TABLE 3-236
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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
COUT BAX-B	279.2	9.0	106.3	163.7	0.2	139.3	58.0	68.9	13.0	0.0	112.8	49.4	48.7	33.2	35.1	5.1	133.6	33.8	0.0	11.2	5.1
Colorado	86.7	0.0	65.3	21.4	0.0	34.1	20.3	24.4	7.9	0.0	25.5	11.4	9.0	5.7	35.1	4.4	33.5	31.5	0.0	0.0	0.0
Utah	192.5	9.0	41.0	142.3	0.2	105.2	37.7	44.5	5.1	0.0	87.3	38.0	39.7	27.5	0.0	0.7	100.1	2.3	0.0	11.2	5.1
COUT BAX-C	289.7	9.0	107.4	173.1	0.2	147.5	62.8	66.4	13.0	0.0	121.1	50.2	47.7	34.1	36.6	5.1	140.2	33.8	0.0	11.2	5.1
Colorado	86.7	0.0	65.3	21.4	0.0	34.1	20.3	24.4	7.9	0.0	25.5	11.4	9.0	5.7	35.1	4.4	33.5	31.5	0.0	0.0	0.0
Utah	203.0	9.0	42.1	151.7	0.2	113.4	42.5	42.0	5.1	0.0	95.6	38.8	38.7	28.4	1.5	0.7	106.7	2.3	0.0	11.2	5.1
COUT BAX-E	291.5	2.4	106.3	182.7	0.1	117.1	64.7	64.8	22.7	22.2	137.5	51.3	50.5	17.1	35.1	5.1	129.9	54.6	0.0	7.7	0.0
Colorado	86.7	0.0	65.3	21.4	0.0	34.1	20.3	24.4	7.9	0.0	25.5	11.4	9.0	5.7	35.1	4.4	33.5	31.5	0.0	0.0	0.0
Utah	204.8	2.4	41.0	161.3	0.1	83.0	44.4	40.4	14.8	22.2	112.0	39.9	41.5	11.4	0.0	0.7	96.4	23.1	0.0	7.7	0.0

NOTES:

¹Bureau of Land Management Visual Resource management Class I is not crossed by any of the Project alternative routes.

²U.S. Forest Service Preservation or Maximum Modification Visual Quality Objectives are not crossed by any of the Project alternative routes.

**TABLE 3-237
 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	279.2	3.8	93.1	182.1	0.2	122.1	85.0	72.1	2.4	99.1	177.7	133.9	38.6	6.3		10.0
Colorado	86.7	0.3	65.0	21.4	0.0	33.1	24.0	29.6	2.4	26.0	58.3	57.2	12.2	0.0	0.0	17.3
Utah	192.5	3.5	28.1	160.7	0.2	89.0	61.0	42.5	0.0	73.1	119.4	76.7	26.4	6.3	10.0	73.1
COUT BAX-C	289.7	3.8	95.2	190.5	0.2	132.2	85.4	72.1	2.4	110.3	177.0	126.7	52.4	6.3	10.0	94.3
Colorado	86.7	0.3	65.0	21.4	0.0	33.1	24.0	29.6	2.4	26.0	58.3	57.2	12.2	0.0	0.0	17.3
Utah	203.0	3.5	30.2	169.1	0.2	99.1	61.4	42.5	0.0	84.3	118.7	69.5	40.2	6.3	10.0	77.0
COUT BAX-E	291.5	17.2	84.0	190.2	0.1	102.8	100.1	88.6	2.4	123.0	166.1	145.2	44.4	0.0	7.7	94.2
Colorado	86.7	0.3	65.0	21.4	0.0	33.1	24.0	29.6	2.4	26.0	58.3	57.2	12.2	0.0	0.0	17.3
Utah	204.8	16.9	19.0	168.8	0.1	69.7	76.1	59.0	0.0	97.0	107.8	88.0	32.2	0.0	7.7	76.9

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 NHD 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 include:

- #147: Rangely residential
- #153: Mack residential
- #240: Colorado State Highway 64
- #241: Dinosaur Diamond Scenic Byway in Canyon Pintado NHD (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

This alternative route would cross 69.4 miles of BLM-administered land, with 4.4 miles in VRM Class II, 33.5 miles in VRM Class III, and 31.5 miles in VRM Class IV within the 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 would cross 63.7 miles of Class B and 23.0 miles of Class C landscapes in the White River and Grand Junction Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class B SQRUs

- Baxter Pass¹
- Big Horse Draw¹
- Bitter Creek
- Book Cliffs¹
- Canyon Pintado¹
- Coal Ridge¹
- Coal Rim¹
- Demaree WSA
- Douglas Pass¹
- Grand Junction Valley
- Oil Springs WSA
- Park Mountain¹
- Rabbit Mountain
- Rat Hole Ridge¹
- Skull Creek
- Spring Creek¹
- White River West¹

Class C SQRUs

- Coal Oil Basin
- M.F. Mountain¹
- West Salt Creek¹

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-B would cross 18.6 miles of high sensitivity, 38.5 miles of moderate sensitivity, and 29.6 miles of low sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

High SLRUs

- Baxter Pass
- Book Cliffs
- Canyon Pintado
- Oil Spring Mountain

Moderate SLRUs

- Baxter Pass
- Coal Oil Rim
- Greasewood
- Park Mountain
- White River West

Low SLRUs

- Coal Oil Basin
- Rabbit Mountain
- West Salt Creek

Distance Zones

This alternative route would cross 53.5 miles within 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

This alternative route would cross 12.4 miles of VRI Class II, 19.2 miles of VRI Class III, and 55.1 miles of VRI Class IV within 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

This alternative route would result in modifications to all landscapes crossed based on the introduction of transmission line structures (including tower pads), construction and maintenance 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 within 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 within 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 within 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. 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 that are 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 H.

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 H. 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 within the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #242 in Appendix H.

Travel Routes

High impacts are anticipated on views from the Dinosaur Diamond Scenic Byway, south of Rangely, where the Project would cross 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 within the right-of-way, and maximizing the span between transmission towers at the road crossing to reduce the dominance of structures within 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 H.

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 H.

The Project would parallel Rio Blanco County Road 23 generally causing a moderate level of impact on views, except where the Project would cross 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 within the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #244 and the associated visual simulation in Appendix H.

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 H.

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 NHD 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 69.4 miles of BLM-administered land crossed by this alternative route in the White River and Grand Junction Field Offices, Alternative COUT BAX-B would have 12.2 miles not in compliance with VRM Class III objectives, including:

- Dinosaur Diamond Scenic Byway in Canyon Pintado NHD (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

TABLE 3-238 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT BAX-B (COLORADO)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT BAX-B	0	0	0.0	804,986	241,199	30.0	225,320	68,875	30.6

This alternative route would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 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 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 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

Scenery crossed by this alternative route is 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 would cross 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. Within 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 would cross 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 would cross 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 would cross sagebrush-dominated basin landscapes (Class C) within 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. A total of 9.0 miles of Class A scenery, 41.0 miles of Class B scenery, 142.3 miles of Class C scenery, and 0.2 mile of developed land would be crossed by Alternative COUT BAX-B.

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 Sejo 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 recent 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 within the Manti-La Sal National Forest. Dispersed recreation occurs throughout the study area on publically administered lands (BLM, state, USFS) and includes big game hunting, camping, hiking, geocaching, and other activities. Two areas of increased dispersed recreation occur along this alternative route: (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 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

This alternative route would cross 103.1 miles of BLM-administered land, with 0.7 mile in VRM Class II, 100.1 miles in VRM Class III, and 2.3 miles in VRM Class IV within 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 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

This alternative route would cross 16.3 miles of USFS-administered lands within the Manti-La Sal National Forest, 11.2 miles of which would cross a partial retention VQO and 5.1 miles would cross a modification VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT BAX-B would cross 0.2 mile of Class A, 57.7 miles of Class B, and 113.6 miles of Class C landscapes in the Moab, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Horseshoe Canyon¹
- Roan Cliffs/Book Cliffs West

Class B SQRUs

- Achee Uplands
- Black Hills¹
- Book Cliffs Bench
- Buckhorn
- Chimney Rock Flats¹
- Cleveland Lloyd Dinosaur Quarry
- Coal Draw/Agate
- Dog Valley¹
- Education Creek
- Green River Valley¹
- Last Spring¹
- Manti-La Sal¹
- Park Canyon
- Prickly Pear Flat¹
- San Pitch Mountains¹
- San Rafael Reef
- Sanpete Valley¹
- Sugarloaf
- The Western Bench¹
- Upper Bitter Creek

Class C SQRUs

- Apple Spring¹
- Buckhorn Flat¹
- Cedar Mountain¹
- Cisco Desert¹
- Clark Valley and the Price River Valley¹
- Hadden Hills/Oil Well Dome¹
- U.S. Highway 6/Gunnison Valley¹
- Uranium Hills¹
- White Sands

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-B would cross 35.5 miles of high sensitivity, 102.3 miles of moderate sensitivity, and 53.3 miles of low sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

High SLRUs

- Buckhorn/Wedge
- I-70 ACEC
- Labyrinth
- Manti-LaSal
- 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

This alternative route would cross 160.1 miles within 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

This alternative route would cross 13.4 miles of VRI Class II, 36.4 miles of VRI Class III, and 118.7 miles of VRI Class IV within 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

Effects of the Project on the rural character of landscapes traversed by this portion of the alternative route 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 within 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 H. 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 H. 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 H.

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 H. 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 be 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 within the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #204 in Appendix H.

Travel Routes

High impacts are anticipated on views from the Dinosaur Diamond Scenic Byway where the Project would parallel I-70 within a 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 H. 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; 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 H.

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 would cross 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 H. High impacts would occur at the crossing of the Floy Canyon WSA, Sejo 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 H.

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 H. For further analysis of impacts on the Old Spanish NHT, refer to Section 3.2.17.

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 a 0.5 mile of these viewing locations traversing steep slopes within 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 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 H.

Moderate impacts would occur on views from the Green River where the Project would cross 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 H.

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 the Project would be viewed from. 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 103.1 miles of BLM-administered land crossed by this alternative in the Moab, Price, Richfield, and Fillmore Field Offices, Alternative COUT BAX-B would have 26.4 miles not 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 within 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 629 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

TABLE 3-239 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT BAX-B (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT BAX-B	464,533	4,758	1.0	1,842,777	292,054	15.8	1,329,661	386,546	29.1

This alternative route would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 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

Scenery crossed is the same as Alternative COUT BAX-B.

Viewing Locations

Viewing locations are the same as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Scenery

Impacts on scenery are the same as Alternative COUT BAX-B.

Viewing Locations

Impacts on viewing locations are the same as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

Compliance with Federal Agency Visual Management Objectives is the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Effects on BLM VRI components are the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Scenery

Scenery crossed is similar to Alternative COUT BAX-B. A total of 9.0 miles of Class A scenery, 42.1 miles of Class B scenery, 151.7 miles of Class C scenery, and 0.2 mile of developed land would be crossed by Alternative COUT BAX-C.

Viewing Locations

Viewing locations 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 would cross 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 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 Geysir
- #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

This alternative route would cross 109.7 miles of BLM-administered land, with 0.7 mile in VRM Class II, 106.7 miles in VRM Class III, and 2.3 miles in VRM Class IV within the Moab, Price, Richfield, and Fillmore Field Offices. The VRM Class II and Class III lands associated with this alternative are similar to those discussed for Alternative COUT BAX-B.

U.S. Forest Service Visual Quality Objectives

USFS VQOs crossed by this alternative route are the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT BAX-C would cross 0.2 mile of Class A, 58.5 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 within the visual study area for this alternative route:

Class A SQRUs

- Horseshoe Canyon¹
- Roan Cliffs/Book Cliffs West

Class B SQRUs

- Achee Uplands
- Beckwith Plateau
- Black Hills¹
- Book Cliffs Bench
- Buckhorn¹
- Chimney Rock Flats¹
- Cleveland Lloyd Dinosaur Quarry
- Coal Draw/Agate
- Dog Valley¹
- Education Creek
- Green River Valley¹
- Last Spring¹
- Manti-La Sal¹
- Park Canyon
- Prickly Pear Flat
- San Pitch Mountains¹
- Sanpete Valley¹
- Sugarloaf¹
- The Western Bench¹
- Upper Bitter Creek

Class C SQRUs

- Apple Spring¹
- Buckhorn Flat¹
- Cedar Mountain¹
- Cisco Desert¹
- Clark Valley and the Price River Valley¹
- Hadden Hills/Oil Well Dome¹
- U.S. Highway 6/Gunnison Valley¹
- Uranium Hills
- White Sands

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-C would cross 33.3 miles of high sensitivity, 118.5 miles of moderate sensitivity, and 49.9 miles of low sensitivity lands.

The following SLRUs were inventoried within 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

This alternative route would cross 170.1 miles within 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

This alternative route would cross 12.1 miles of VRI Class II, 41.0 miles in VRI Class III, and 125.9 miles in VRI Class IV within 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

Impacts on scenery are similar to Alternative COUT BAX-B.

Viewing Locations

Impacts on viewing locations 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 H. High impacts would occur on views from the Mexican Mountain WSA destination route where the Project would cross 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 within 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 H. 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 3.2.17.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 109.7 miles of BLM-administered land crossed by this alternative in the Moab, Price, Richfield, and Fillmore Field Offices, Alternative COUT BAX-C would have 40.2 miles not 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 within 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 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 is the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-240 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT BAX-C (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT BAX-C	464,533	4,758	1.0	1,857,733	299,716	16.1	1,329,661	415,220	31.2

Effects on BLM SQRUs would be similar to Alternative COUT BAX-B.

Alternative COUT BAX-E

Affected Environment (Colorado)

Scenery

Scenery crossed is the same as Alternative COUT BAX-B.

Viewing Locations

Viewing locations are the same as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Scenery

Impacts on scenery are the same as Alternative COUT BAX-B.

Viewing Locations

Impacts on viewing locations are the same as Alternative COUT BAX-B.

Federal Agency Visual Management Objectives

Compliance with Federal Agency Visual Management Objectives is the same as Alternative COUT BAX-B.

Bureau of Land Management Visual Resource Inventory Components

Effects on BLM SQRUs are the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Scenery

Scenery crossed is the same 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. Within 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. A total of 2.4 miles of Class A scenery, 41.0 miles of Class B scenery, 161.3 miles of Class C scenery, and 0.1 mile of developed land would be crossed by Alternative COUT BAX-E.

Viewing Locations

Viewing locations 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, Sejo Canyon destination route, Horseshoe Canyon destination route, and the Green River.

Residences

High concern residential viewers within 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 this alternative route: (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 600) 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 within the Manti-La Sal National Forest, would have views of the Project on Link U600.

KOPs specific to Alternative COUT BAX-E 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

This alternative route would cross 120.2 miles of BLM-administered land, with 0.7 mile in VRM Class II, 96.4 miles in VRM Class III, and 23.1 miles in VRM Class IV within the Moab, Price, Richfield, and Fillmore Field Offices. The VRM Class II and Class III lands associated with this alternative 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

This alternative route would cross 7.7 miles of USFS-administered lands within 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 would cross 0.2 mile of Class A, 51.5 miles of Class B, and 142.8 miles of Class C landscapes in the Moab, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Fort Ridge
- Green River/Book Cliffs
- Horseshoe Canyon¹
- Roan Cliffs/Book Cliffs West

Class B SQRUs

- Achee Uplands
- Beckwith Plateau
- Book Cliffs Bench
- Chimney Rock Flats
- Cleveland Lloyd Dinosaur Quarry¹
- Coal Draw/Agate
- Dog Valley¹
- Education Creek
- Green River Valley¹
- Last Spring¹
- Manti-La Sal¹
- Park Canyon
- Price River¹
- San Pitch Mountains¹
- Sanpete Valley¹
- South Book Cliffs Bench¹
- Sugarloaf¹
- The Book Cliffs¹
- The Western Bench¹
- Upper Bitter Creek

Class C SQRUs

- Apple Spring¹
- Cisco Desert¹
- Clark Valley and the Price River Valley¹
- U.S. Highway 6/Gunnison Valley¹
- Uranium Hills
- White Sands

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT BAX-E would cross 20.6 miles of high sensitivity, 103.7 miles of moderate sensitivity, and 76.7 miles of low sensitivity lands. The following SLRUs were inventoried within 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

This alternative route would cross 169.5 miles within 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

This alternative route would cross 0.5 mile of VRI Class II, 34.5 miles in VRI Class III, and 155.9 miles in VRI Class IV within 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 Hiawatha.

Environmental Consequences (Utah)

Scenery

Impacts on scenery are the same as Alternative COUT BAX-B from the Colorado-Utah border until the crossing of I-70 west of Green River.

Across this alternative 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

Impacts on viewing locations are the same 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 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 H. 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 H.

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 H. 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. Impacts on views from dispersed residences in Juab Valley are the same 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 H.

High impacts would occur at each of the five locations where the Project would cross 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 KOP #260 and #284 and the associated visual simulations in Appendix H.

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 lattice transmission line structures would blend with the Book Cliffs.

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 when compared to the existing landscape features, as well as the distance the Project would be viewed from. Views from the majority of dispersed recreation occurring in the San Rafael Swell would be screened and 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 120.2 miles of BLM-administered land crossed by this alternative in the Moab, Price, Richfield, and Fillmore Field Offices, Alternative COUT BAX-E would have 32.2 miles not 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

TABLE 3-241 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT BAX-E (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT BAX-E	678,618	7,119	1.0	1,903,969	290,079	15.2	1,255,533	468,328	37.3

This alternative route would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 is similar to COUT BAX-B and this alternative 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 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 3-242 and 3-243.

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment (Colorado)

Scenery

Scenery crossed by this alternative route is 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 and resulting from the juxtaposition of irrigated agricultural lands, natural lands, and dispersed residential areas. A total of 4.4 miles of Class B scenery and 19.6 miles of Class C scenery would be crossed by Alternative COUT-A.

Route Variation COUT-A-1 would cross the same scenery as Alternative COUT-A.

Viewing Locations

Travel Routes

The Dinosaur Diamond Scenic Byway, associated with high concern viewers, would have views of the Project where Link C187 would cross 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]

Viewing locations for the route variation are the same as Alternative COUT-A.

TABLE 3-242
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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
Alternative COUT-A and Route Variation																					
COUT-A	206.0	1.3	121.2	82.9	0.6	59.6	41.1	66.9	18.5	19.9	76.8	35.5	49.4	25.8	18.5	0.0	28.5	26.9	0.0	16.7	3.6
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	182.0	1.3	116.8	63.3	0.6	58.5	39.0	50.5	14.1	19.9	74.4	30.4	33.1	25.6	18.5	0.0	12.3	26.9	0.0	16.7	3.6
COUT-A-1	205.6	1.3	120.8	82.9	0.6	59.3	41.1	66.8	18.5	19.9	76.1	35.8	49.4	25.8	18.5	0.0	28.5	26.9	0.0	16.2	3.7
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	181.6	1.3	116.4	63.3	0.6	58.2	39	50.4	14.1	19.9	73.7	30.7	33.1	25.6	18.5	0.0	12.3	26.9	0.0	16.2	3.7
Alternative COUT-B and Route Variations																					
COUT-B	216.0	1.8	123.6	89.6	1.0	52.2	40.1	62.3	22.3	39.1	81.0	28.9	56.7	31.0	18.4	0.0	29.0	26.9	0.0	8.0	13.8
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	192.0	1.8	119.2	70.0	1.0	51.1	38.0	45.9	17.9	39.1	78.6	23.8	40.4	30.8	18.4	0.0	12.8	26.9	0.0	8.0	13.8
COUT-B-1	212.7	1.8	132.4	78.1	0.4	61.8	38.5	58.1	20.0	34.3	74.6	29.8	53.8	28.7	25.8	0.0	31.3	30.3	0.4	8.7	14.5
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	188.7	1.8	128.0	58.5	0.4	60.7	36.4	41.7	15.6	34.3	72.2	24.7	37.5	28.5	25.8	0.0	15.1	30.3	0.4	8.7	14.5
COUT-B-2	214.2	1.8	133.9	78.1	0.4	57.7	42.2	60.0	20.0	34.3	73.2	28.6	54.4	31.4	26.6	0.0	28.5	30.3	0.0	8.7	14.5
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	190.2	1.8	129.5	58.5	0.4	56.6	40.1	43.6	15.6	34.3	70.8	23.5	38.1	31.2	26.6	0.0	12.3	30.3	0.0	8.7	14.5
COUT-B-3	213.9	1.8	133.6	78.1	0.4	52.3	40.5	63.3	23.5	34.3	73.2	28.6	56.5	34.7	20.9	0.0	31.5	26.9	0.0	8.0	13.8
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	189.9	1.8	129.2	58.5	0.4	51.2	38.4	46.9	19.1	34.3	70.8	23.5	40.2	34.5	20.9	0.0	15.3	26.9	0.0	8.0	13.8
COUT-B-4	214.2	1.8	133.9	78.1	0.4	58.7	41.2	60.0	20.0	34.3	73.2	28.6	53.1	32.5	26.8	0.0	28.5	30.3	0.0	8.7	14.5
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	190.2	1.8	129.5	58.5	0.4	57.6	39.1	43.6	15.6	34.3	70.8	23.5	36.8	32.3	26.8	0.0	12.3	30.3	0.0	8.7	14.5

**TABLE 3-242
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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
		Alternative COUT-C and Route Variations																			
COUT-B-5	213.9	1.8	133.6	78.1	0.4	51.3	41.5	63.3	23.5	34.3	73.2	28.6	57.8	33.6	20.7	0.0	31.5	26.9	0.0	8.0	13.8
Colorado	24.0	0.0	4.4	19.6	0.0	1.1	2.1	16.4	4.4	0.0	2.4	5.1	16.3	0.2	0.0	0.0	16.2	0.0	0.0	0.0	0.0
Utah	189.9	1.8	129.2	58.5	0.4	50.2	39.4	46.9	19.1	34.3	70.8	23.5	41.5	33.4	20.7	0.0	15.3	26.9	0.0	8.0	13.8
COUT-C	209.8	3.6	103.5	101.9	0.8	35.7	40.6	74.3	26.6	32.6	60.0	20.2	44.1	23.2	62.3	3.1	37.4	50.4	0.0	8.0	1.8
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	185.0	3.6	99.1	81.5	0.8	34.3	38.6	57.7	21.8	32.6	57.6	16.4	28.6	20.1	62.3	3.1	19.3	50.4	0.0	8.0	1.8
COUT-C-1	206.4	3.6	112.1	90.5	0.2	47.9	41.8	64.2	26.0	26.5	53.6	21.1	47.8	27.0	56.9	3.1	41.2	53.8	0.4	8.7	2.5
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	181.6	3.6	107.7	70.1	0.2	46.5	39.8	47.6	21.2	26.5	51.2	17.3	32.3	23.9	56.9	3.1	23.1	53.8	0.4	8.7	2.5
COUT-C-2	207.9	3.6	113.6	90.5	0.2	43.8	45.5	66.1	26.0	26.5	52.2	19.9	48.4	29.7	57.7	3.1	38.4	53.8	0.0	8.7	2.5
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	183.1	3.6	109.2	70.1	0.2	42.4	43.5	49.5	21.2	26.5	49.8	16.1	32.9	26.6	57.7	3.1	20.3	53.8	0.0	8.7	2.5
COUT-C-3 (Agency Preferred Alternative)	207.6	3.6	113.3	90.5	0.2	37.4	44.8	69.4	29.5	26.5	52.2	19.9	51.8	31.9	51.8	3.1	41.4	50.4	0.0	8.0	1.8
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	182.8	3.6	108.9	70.1	0.2	36.0	42.8	52.8	24.7	26.5	49.8	16.1	36.3	28.8	51.8	3.1	23.3	50.4	0.0	8.0	1.8
COUT-C-4	207.9	3.6	113.6	90.5	0.2	43.6	46.3	67.8	23.7	26.5	52.2	19.9	40.5	24.7	70.6	3.1	38.6	53.8	0.0	8.7	2.5
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	183.1	3.6	109.2	70.1	0.2	42.2	44.3	51.2	18.9	26.5	49.8	16.1	25.0	21.6	70.6	3.1	20.5	53.8	0.0	8.7	2.5

**TABLE 3-242
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)					
		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	Bureau of Land Management Visual Resource Management Classes ¹			U.S. Forest Service Visual Quality Objectives ²		
																Class II	Class III	Class IV	Retention	Partial Retention	Modification
COU-C-5	207.6	3.6	113.3	90.5	0.2	37.2	45.6	71.1	27.2	26.5	52.2	19.9	43.9	26.9	64.7	3.1	41.6	50.4	0.0	8.0	1.8
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	182.8	3.6	108.9	70.1	0.2	35.8	43.6	54.5	22.4	26.5	49.8	16.1	28.4	23.8	64.7	3.1	23.5	50.4	0.0	8.0	1.8
Alternatives COUT-H and COUT-I																					
COU-H (Applicant Preferred Alternative)	200.6	5.8	89.9	104.5	0.4	38.5	32.5	62.3	31.2	36.1	45.7	22.6	54.4	19.9	58.0	3.1	42.3	50.5	0.0	7.7	0.0
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	175.8	5.8	85.5	84.1	0.4	37.1	30.5	45.7	26.4	36.1	43.3	18.8	38.9	16.8	58.0	3.1	24.2	50.5	0.0	7.7	0.0
COU-I	240.2	12.4	88.6	139.0	0.2	48.7	37.6	77.1	34.5	42.3	34.2	24.8	68.2	32.5	80.5	3.1	51.1	68.6	0.0	11.2	5.1
Colorado	24.8	0.0	4.4	20.4	0.0	1.4	2.0	16.6	4.8	0.0	2.4	3.8	15.5	3.1	0.0	0.0	18.1	0.0	0.0	0.0	0.0
Utah	215.4	12.4	84.2	118.6	0.2	47.3	35.6	60.5	29.7	42.3	31.8	21.0	52.7	29.4	80.5	3.1	33.0	68.6	0.0	11.2	5.1

NOTES:

¹Bureau of Land Management Visual Resource management Class I is not crossed by any of the Project alternative routes.

²U.S. Forest Service Preservation or Maximum Modification Visual Quality Objectives are not crossed by any of the Project alternative routes.

**TABLE 3-243
ALTERNATIVE ROUTE COMPARISON FOR VISUAL 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 (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
Alternative COUT-A and Route Variation																
COUT-A	206.0	1.0	59.3	145.1	0.6	34.8	44.3	126.9	0.0	40.6	165.4	55.4	0.0	6.0	14.3	130.3
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	182.0	1.0	59.3	121.1	0.6	34.8	41.8	105.4	0.0	40.6	141.4	39.2	0.0	6.0	14.3	122.5
COUT-A-1	205.6	1.0	59.1	144.9	0.6	35.1	43.3	127.2	0.0	38.6	167.0	55.4	0.0	6.1	13.8	130.3
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	181.6	1.0	59.1	120.9	0.6	35.1	40.8	105.7	0.0	38.6	143.0	39.2	0.0	6.1	13.8	122.5
Alternative COUT-B and Route Variations																
COUT-B	216.0	1.5	81.0	132.5	1.0	35.7	43.2	137.1	0.0	57.7	158.3	55.9	0.0	20.0	1.8	138.3
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	192.0	1.5	81.0	108.5	1.0	35.7	40.7	115.6	0.0	57.7	134.3	39.7	0.0	20.0	1.8	130.5
COUT-B-1	212.7	15	75.7	121.6	0.4	47.2	40.2	125.3	1.3	49.9	161.5	58.8	2.8	20.7	2.9	127.5
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	188.7	15	75.7	97.6	0.4	47.2	37.7	103.8	1.3	49.9	137.5	42.6	2.8	20.7	2.9	119.7
COUT-B-2	214.2	13.0	79.2	121.6	0.4	44.1	41.9	128.2	0.0	49.9	164.3	58.8	0.0	20.7	2.5	132.2
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	190.2	13.0	79.2	97.6	0.4	44.1	39.4	106.7	0.0	49.9	140.3	42.6	0.0	20.7	2.5	124.4
COUT-B-3	213.9	10.3	81.6	121.6	0.4	37.4	42.6	133.9	0.0	49.9	164.0	58.4	0.0	20.0	1.8	133.7
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	189.9	10.3	81.6	97.6	0.4	37.4	40.1	112.4	0.0	49.9	140.0	42.2	0.0	20.0	1.8	125.9
COUT-B-4	214.2	12.3	79.9	121.6	0.4	43.8	42.1	128.3	0.0	49.9	164.3	58.8	0.0	20.7	2.5	132.2
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	190.2	12.3	79.9	97.6	0.4	43.8	39.6	106.8	0.0	49.9	140.3	42.6	0.0	20.7	2.5	124.4

**TABLE 3-243
ALTERNATIVE ROUTE COMPARISON FOR VISUAL 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 (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-B-5	213.9	11.0	80.9	121.6	0.4	37.7	42.4	133.8	0.0	49.9	164.0	58.4	0.0	20.0	1.8	133.7
Colorado	24.0	0.0	0.0	24.0	0.0	0.0	2.5	21.5	0.0	0.0	24.0	16.2	0.0	0.0	0.0	7.8
Utah	189.9	11.0	80.9	97.6	0.4	37.7	39.9	112.3	0.0	49.9	140.0	42.2	0.0	20.0	1.8	125.9
Alternative COUT-C and Route Variations																
COUT-C	209.8	12.5	72.8	123.7	0.8	20.2	41.3	148.3	3.2	35.6	171.0	85.7	5.2	8.0	1.8	109.1
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	185	12.5	72.8	98.9	0.8	20.2	40.9	123.9	3.2	35.6	146.2	67.6	5.2	8.0	1.8	102.4
COUT-C-1	206.4	33.9	59.5	112.8	0.2	34.8	36.9	134.7	4.5	27.8	174.1	90.1	8.0	8.7	2.9	96.7
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	181.6	33.9	59.5	88.0	0.2	34.8	36.5	110.3	4.5	27.8	149.3	72	8.0	8.7	2.9	90.0
COUT-C-2	207.9	31.9	63.0	112.8	0.2	31.7	38.6	137.6	3.2	27.8	176.9	90.1	5.2	8.7	2.5	101.4
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	183.1	31.9	63.0	88.0	0.2	31.7	38.2	113.2	3.2	27.8	152.1	72	5.2	8.7	2.5	94.7
COUT-C-3 (Agency Preferred Alternative)	207.6	29.9	64.7	112.8	0.2	25.3	39.1	143.2	3.2	27.8	176.6	89.7	5.2	8.0	1.8	102.9
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	182.8	29.9	64.7	88.0	0.2	25.3	38.7	118.8	3.2	27.8	151.8	71.6	5.2	8.0	1.8	96.2
COUT-C-4	207.9	30.2	64.7	112.8	0.2	30.4	37.7	139.8	3.2	27.8	176.9	90.3	5.2	8.7	2.5	101.2
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	183.1	30.2	64.7	88.0	0.2	30.4	37.3	115.4	3.2	27.8	152.1	72.2	5.2	8.7	2.5	94.5

**TABLE 3-243
ALTERNATIVE ROUTE COMPARISON FOR VISUAL 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 (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-C-5	207.6	28.2	66.4	112.8	0.2	24.0	38.2	145.4	3.2	27.8	176.6	89.9	5.2	8.0	1.8	102.7
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	182.8	28.2	66.4	88.0	0.2	24.0	37.8	121.0	3.2	27.8	151.8	71.8	5.2	8.0	1.8	96.0
Alternatives COUT-H and COUT-I																
COUT-H (Applicant Preferred Alternative)	200.6	29.4	55.6	115.2	0.4	30.8	27.1	142.7	5.8	24.3	170.5	90.7	5.2	0.0	7.7	97.0
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	175.8	29.4	55.6	90.4	0.4	30.8	26.7	118.3	5.8	24.3	145.7	72.6	5.2	0.0	7.7	90.3
COUT-I	240.2	16.0	67.1	156.9	0.2	38.0	36.9	165.3	3.2	16.0	221.0	117.6	5.2	6.3	10.0	101.1
Colorado	24.8	0.0	0.0	24.8	0.0	0.0	0.4	24.4	0.0	0.0	24.8	18.1	0.0	0.0	0.0	6.7
Utah	215.4	16.0	67.1	132.1	0.2	38.0	36.5	140.9	3.2	16.0	196.2	99.5	5.2	6.3	10.0	94.4

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 16.2 miles of BLM-administered land, with all 16.2 miles in VRM Class III within the 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.

BLM Visual Resource Management Classes for the route variation are the same as Alternative COUT-A.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-A would cross 24.0 miles in a Class C landscape within the White River Field Office. The following SQRUs were inventoried within 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: ¹SQRUs crossed by the Project

Scenic Quality for the route variation is the same as Alternative COUT-A.

Sensitivity Level Rating Units

Alternative COUT-A would cross 24.0 miles of moderate sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

Moderate SLRUs

- Coal Oil Rim
- Skull Creek
- White River West

SLRUs for the route variation are the same as Alternative COUT-A.

Distance Zones

The Project would be completely located within the foreground-middleground distance zone.

Distance zones for the route variation are the same as Alternative COUT-A.

Visual Resource Inventory Classes

This alternative route would cross 24.0 miles in VRI Class IV within the White River Field Office.

VRI Classes for the route variation is the same as Alternative COUT-A.

Environmental Consequences (Colorado)

Scenery

Alternative COUT-A

This alternative route would result in modifications to all landscapes crossed based on the introduction of transmission line structures (including tower pads), construction and maintenance 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.

Alternative COUT-A Route Variation (COUT-A-1)

Impacts on scenery are the same as Alternative COUT-A.

Viewing Locations

Alternative COUT-A

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 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 H.

Alternative COUT-A Route Variation (COUT-A-1)

Impacts on viewing locations are the same as Alternative COUT-A.

Federal Agency Visual Management Objectives

Alternative COUT-A

Bureau of Land Management Visual Resource Management Classes

The Colorado portion of this alternative route would be compliant with VRM Class III lands crossed.

Compliance with VRM Class III lands for the route variation is the same as Alternative COUT-A.

Alternative COUT-A Route Variation (COUT-A-1)

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-244 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT-A (COLORADO)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-A	0	0	0.0	165,049	25,553	15.5	166,556	75,615	45.4
COUT-A-1	0	0	0.0	165,049	25,553	15.5	166,556	75,615	45.4

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 and route variation 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 are Class C and are crossed adjacent to existing transmission lines however, there are Class B SQRUs that would be influenced by the Project.

Affected Environment (Utah)

Scenery

Scenery crossed by this alternative route is 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 would cross 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. A total of 1.3 miles of Class A scenery, 116.8 miles of Class B scenery, 63.3 miles of Class C scenery, and 0.6 mile of developed land would be crossed by Alternative COUT-A.

Route Variation COUT-A-1 would cross 0.4 fewer mile of Class B scenery.

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 within 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 this alternative route: (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 would cross 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 (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 NWR. The Project would cross 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 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]

Route Variation COUT-A-1 is similar to Alternative COUT-A except that the White River/Strawberry Road Scenic Backway would be crossed by Link U428 instead of U429.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 39.2 miles of BLM-administered land, with 12.3 miles in VRM Class III and 26.9 miles in VRM Class IV within the 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

This alternative route would cross 20.3 miles of USFS-administered lands within the Uinta-Wasatch-Cache and Manti-La Sal National Forests. On the Uinta-Wasatch Cache National Forest, 14.7 miles would cross partial retention VQO and 3.7 miles would cross modification VQO. The Project would cross 1.9 miles within a partial retention VQO on the Manti-La Sal National Forest.

Federal Agency Visual Management Objectives for the route variation are similar to COUT-A, except that the Project would cross a partial retention VQO for 14.2 miles on the Uinta-Wasatch-Cache National Forest.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-A would cross 18.8 miles of Class A, 37.2 miles of Class B, and 39.9 miles of Class C landscapes in the Vernal, Salt Lake, Richfield, and Fillmore Field Offices.

The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- South Green River
- Spanish Fork Canyon¹

Class B SQRUs

- Blue Mountain Valley¹
- Dog Valley¹
- Horseshoe Bend – Green River¹
- Pelican Lake¹
- Red Wash/Kennedy Wash/Devil’s Playground¹
- San Pitch Mountains¹
- Sanpete Valley
- Squaw Ridge¹
- Walker Plateau East

Class C SQRUs

- Apple Spring¹
- Deadman’s Bench¹
- McCoy Flats¹
- Ouray Valley¹
- Sand Spring Wash
- Walker Plateau West¹

Note: ¹SQRUs crossed by the Project

Route Variation COUT-A-1 would cross 0.2 fewer mile of Class A than Alternative COUT-A.

Sensitivity Level Rating Units

Alternative COUT-A would cross 33.3 miles of moderate sensitivity and 57.4 miles of low sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

Moderate SLRUs

- I-15
- Spanish Fork Canyon

Low SLRUs

- Full-Field Development Area
- San Pitch Mountains
- Sanpete Valley

Route Variation COUT-A-1 would cross 0.8 fewer mile of moderate sensitivity than Alternative COUT-A.

Distance Zones

This alternative route would cross 103.6 miles within the foreground-middleground distance zone, 40.5 miles in the background distance zone, and 37.4 miles in the seldom seen distance zone.

Route Variation COUT-A-1 would cross 0.5 mile more in the background distance zone than Alternative COUT-A.

Visual Resource Inventory Classes

This alternative route would cross 9.8 miles in VRI Class II, 13.9 miles in VRI Class III, and 57.4 miles in VRI Class IV within the Vernal, Salt Lake, Richfield, and Fillmore Field Offices. The areas of VRI Class II are associated with Spanish Fork Canyon.

VRI Classes for the route variation are the same as COUT-A.

Environmental Consequences (Utah)

Scenery

Alternative COUT-A

Effects of the Project on the rural character of landscapes crossed by the Utah portion of this alternative route 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 access roads and tower pads, limiting vegetation clearing within the right-of-way, and minimizing the number of transmission line structures within the landscape by spanning the Strawberry River canyon to the extent practicable.

Alternative COUT-A Route Variation (COUT-A-1)

Impacts on scenery are similar to Alternative COUT-A.

Viewing Locations

Alternative COUT-A

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 would cross 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 H.

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 H.

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 within the right-of-way. For additional analysis, refer to the contrast rating worksheet for KOP #204 in Appendix H.

Travel Routes

High impacts would occur where the Project would cross 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 would cross 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 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 H.

High impacts would occur on views from the Great Western Trail where the Project would cross 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 which would diminish the area visually influenced by development along the river. During final engineering of the selected route, additional site-specific mitigation would be evaluated.

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 the Project would be viewed from.

Alternative COUT-A Route Variation (COUT-A-1)

Impacts on viewing locations are similar to Alternative COUT-A, except for impacts associated with the White River/Strawberry Road Scenic Backway. Increased impacts are anticipated on this scenic road as this route variation would cross the road multiple times in less than 0.5 mile. To reduce contrast in this area, selective mitigation measures would be applied to maximize the distance between transmission line structures to place towers as far from the road alignment as practicable.

Federal Agency Visual Management Objectives

Alternative COUT-A

Bureau of Land Management Visual Resource Management Classes

The Utah portion of this alternative 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.

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 except for an area southeast of Birdseye (Link U621 between

Mileposts 6.6 and 7.6). The existing transmission line traverses steep slopes, and views from U.S. Highway 89 include several skylined transmission structures. Due to the dominance of the existing transmission line, the Project would be subordinate in this landscape setting. 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

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 partial retention VQO in several locations. This alternative route would be completely located within 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 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 621, between Mileposts 4.4 and 5.1). As such, a potential amendment to the Manti-La Sal National Forest LRMP was identified and is discussed further in Chapter 5. Another portion of this management area is traversed farther to the south. Due to the dominance of the existing transmission line, the Project would be subordinate to the existing landscape character and would conform to the plan.

Alternative COUT-A Route Variation (COUT-A-1)

Compliance with BLM VRM Classes are the same as Alternative COUT-A.

Compliance with USFS VQOs, and conformance with USFS LRMPs, is similar to Alternative COUT-A, except a portion of Link U428 would not be located within the WWEC corridor.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-245 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT-A (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-A	257,261	56,470	22.0	1,156,347	176,531	15.3	395,726	119,662	30.2
COUT-A-1	257,261	55,957	21.8	1,159,349	176,531	15.3	395,726	119,662	30.2

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 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 would cross 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 and variation 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; 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 would also 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 and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment (Colorado)

Scenery

Scenery crossed is the same as Alternative COUT-A including the route variations.

Viewing Locations

Viewing locations are the same as Alternative COUT-A including the route variations.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative COUT-A including the route variations.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative COUT-A including the route variations.

Environmental Consequences (Colorado)

Scenery

Impacts on scenery are the same as Alternative COUT-A including the route variations.

Viewing Locations

Impacts on viewing locations are the same as Alternative COUT-A including the route variations.

Federal Agency Visual Management Objectives

Compliance with Federal Agency Visual Management Objectives is the same as Alternative COUT-A including the route variations.

Bureau of Land Management Visual Resource Inventory Components

Effects on BLM SQRUs are the same as those discussed for Alternative COUT-A including the route variations.

Affected Environment (Utah)

Scenery

Scenery crossed is similar to 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 within the West Tavaputs Plateau, would be crossed by Links U431 and U432 adjacent to an existing lower voltage transmission line. The Project would cross 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 would cross the Roan Cliffs into Emma Park and parallel 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 this alternative route, a rural landscape character is a key feature of many of the landscapes crossed. A total of 1.8 miles of Class A scenery, 119.2 miles of Class B scenery, 70.0 miles of Class C scenery, and 1.0 mile of developed land would be crossed by Alternative COUT-B.

Route Variation COUT-B-1 would cross an additional 8.8 miles of Class B scenery associated with the Tavaputs Plateau and Roan Cliff landscapes in steep terrain, and 11.5 fewer miles Class C scenery.

Route Variations COUT-B-2 and COUT-B-4 would cross an additional 10.3 miles of Class B scenery associated with the Tavaputs Plateau and Roan Cliff landscapes in steep terrain, and 11.5 fewer miles Class C scenery.

Route Variations COUT-B-3 and COUT-B-5 would cross an additional 10.0 miles of Class B scenery associated with the Tavaputs Plateau and Roan Cliff landscapes in steep terrain, and 11.5 fewer miles Class C scenery.

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 are also 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. 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 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]

Additional KOPs associated with the route variations:

- #327: Avintaquin Campground is associated with Route Variation COUT-B-1
- #328: Indian Canyon Scenic Byway simulation is associated with Route Variation COUT-B-1
- #329: Reservation Ridge Scenic Backway is associated with Route Variations COUT-B-1, COUT-B-2, and COUT-B-4
- #330: Dispersed residences north of Emma Park are associated with Route Variations COUT-B-3 and COUT-B-4

Viewing locations for Route Variation COUT-B-1 are similar to Alternative COUT-B except for additional areas of dispersed residences west of Argyle Canyon on Reservation Ridge, crossing U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) in steep terrain on Link U513, paralleling the Reservation Ridge Scenic Backway on Links U513 and U515 for approximately 12 miles, located within 0.25 mile of Argyle Canyon Road on Argyle Ridge, and within 0.5 mile of the Avintaquin Campground.

Viewing locations for Route Variation COUT-B-2 are similar to Alternative COUT-B except for additional areas of dispersed residences south of Reservation Ridge, paralleling U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) for approximately 1 mile on Link U520, and paralleling the Reservation Ridge Scenic Backway on Link U515 for approximately 5 miles.

Viewing locations for Route Variation COUT-B-3 are similar to Alternative COUT-B except for additional areas of dispersed residences south of Reservation Ridge and U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) would be crossed approximately 1 mile further north on Link U514.

Viewing locations for Route Variation COUT-B-4 are similar to Alternative COUT-B except for additional areas of dispersed residences south of Reservation Ridge, U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) would be crossed approximately 1 mile further north on Link U514, and the Reservation Ridge Scenic Backway would be paralleled on Link U515 for approximately 5 miles.

Viewing locations for Route Variation COUT-B-5 are similar to Alternative COUT-B except for additional areas of dispersed residences south of Reservation Ridge and paralleling U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) for approximately 1 mile on Link U520.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 39.7 miles of BLM-administered land, with 12.8 miles in VRM Class III and 26.9 miles in VRM Class IV within the 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 includes lands adjacent to Argyle Canyon and U.S. Highway 191.

Route Variation COUT-B-1 would cross 2.3 miles more of VRM Class III and 3.4 miles more of VRM Class IV than Alternative COUT -B.

Route Variation COUT -B-2 would cross 0.5 fewer mile of VRM Class III and 3.4 miles more of VRM Class IV than Alternative COUT -B.

Route Variation COUT -B-3 would cross 2.5 miles more of VRM Class III than Alternative COUT-B.

Route Variation COUT-B-4 would cross 0.5 fewer mile of VRM Class III and 3.4 miles more of VRM Class IV than Alternative COUT-B.

Route Variation COUT-B-5 would cross 2.5 miles more of VRM Class III than Alternative COUT-B.

U.S. Forest Service Visual Quality Objectives

This alternative route would cross 21.8 miles of USFS-administered lands within the Ashley, Uinta-Wasatch-Cache, and Manti-La Sal National Forests. On the Ashley National Forest, 12.0 miles would cross a modification VQO. On the Uinta-Wasatch-Cache National Forest, 0.1 mile would cross retention, 6.0 miles would cross a partial retention VQO and 1.8 miles would cross a modification VQO. The Project would cross 1.9 miles within a partial retention VQO on the Manti-La Sal National Forest.

On the Uinta-Wasatch-Cache National Forest, Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 would all cross 0.1 mile more of partial retention VQO and 0.8 mile more of a modification VQO than Alternative COUT-B.

On the Ashley National Forest, Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 would all cross 0.1 mile more of partial retention VQO than Alternative COUT -B. In addition, Route Variation COUT-B-1 would cross 0.4 mile of retention VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-B would cross 37.0 miles of Class A, 55.8 miles of Class B, and 39.9 miles of Class C landscapes in the Vernal, Price, Salt Lake, Richfield, and Fillmore Field Offices.

The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Argyle Creek¹
- Ford Ridge
- Green River/Book Cliffs¹
- South Green River
- Spanish Fork Canyon¹

Class B SQRUs

- Beaver Ridge¹
- Blue Mountain Valley¹
- Dog Valley¹
- Emma Park¹
- Horseshoe Bend-Green River¹
- Kyune¹
- Pelican Lake¹
- Red Wash/Kennedy Wash/Devil's Playground¹
- San Pitch Mountains¹
- Sanpete Valley
- Squaw Ridge¹
- The Book Cliffs
- Walker Plateau East

Class C SQRUs

- Apple Spring¹
- Deadman's Bench¹
- Little Desert
- McCoy Flats¹
- Ouray Valley¹
- Sand Spring Wash
- Walker Plateau West¹

Note: ¹SQRUs crossed by the Project

Route Variation COUT-B-1 would cross 13.4 miles more of Class A and 18.6 fewer miles of Class B than Alternative COUT-B. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but would influence the Green River/Book Cliffs, Beaver Ridge, Emma Park, and Kyune SQRUs.

Route Variation COUT-B-2 would cross 15.3 miles more of Class A and 18.6 fewer miles of Class B than Alternative COUT-B. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Beaver Ridge, Emma Park, and Kyune SQRUs.

Route Variation COUT-B-3 would cross 16.4 miles more of Class A and 18.6 fewer miles of Class B than Alternative COUT-B. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Beaver Ridge, Emma Park, and Kyune SQRUs.

Route Variation COUT-B-4 would cross 15.2 miles more of Class A and 18.6 fewer miles of Class B than Alternative COUT-B. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs.

Route Variation COUT-B-5 would cross 16.5 miles more of Class A and 18.6 fewer miles of Class B than Alternative COUT-B. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Beaver Ridge, Emma Park, and Kyune SQRUs.

Sensitivity Level Rating Units

Alternative COUT-B would cross 15.4 miles of high sensitivity, 54.7 miles of moderate sensitivity, and 57.4 miles of low sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

High SLRUs

- Nine Mile Canyon
- West Book Cliffs

Moderate SLRUs

- I-15
- Spanish Fork Canyon

Low SLRUs

- Full-Field Development Area
- San Pitch Mountains
- Sanpete Valley

Route Variation COUT-B-1 would cross 2.2 fewer miles of high sensitivity and 1.7 fewer miles of moderate sensitivity than Alternative COUT-B.

Route Variations COUT-B-2 and COUT-B-4 would cross 1.1 fewer miles of high sensitivity and 0.8 fewer mile of moderate sensitivity than Alternative COUT-B.

Route Variations COUT-B-3 and COUT-B-5 would cross 1.1 fewer miles of high sensitivity and 1.0 fewer mile of moderate sensitivity than Alternative COUT-B.

None of the route variations would influence the West Book Cliffs SLRU.

Distance Zones

This alternative route would cross 155.7 miles within the foreground-middleground distance zone and 36.5 miles in the background distance zone.

Route Variation COUT-B-1 would cross 4.4 fewer miles of the foreground-middleground distance zone and 1.0 mile more of the background distance zone than Alternative COUT-B.

Route Variations COUT-B-2 and COUT-B-4 would cross 1.9 fewer miles of the foreground-middleground distance zone.

Route Variations COUT-B-3 and COUT-B-5 would cross 2.1 fewer miles of the foreground-middleground distance zone.

Visual Resource Inventory Classes

This alternative route would cross 33.0 miles of VRI Class II, 26.5 miles in VRI Class III, and 57.4 miles in VRI Class IV within the 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.

Route Variation COUT-B-1 would cross 7.1 miles more of VRI Class II and 14.9 fewer miles of VRI Class III than Alternative COUT-B.

Route Variation COUT-B-2 would cross 7.3 miles more of VRI Class II and 14.0 fewer miles of VRI Class III than Alternative COUT-B.

Route Variation COUT-B-3 would cross 8.1 miles more of VRI Class II and 10.6 fewer miles of VRI Class III than Alternative COUT-B.

Route Variation COUT-B-4 would cross 3.9 miles more of VRI Class II and 10.6 fewer miles of VRI Class III than Alternative COUT-B.

Route Variation COUT-B-5 would cross 11.6 miles more of VRI Class II and 14.0 fewer miles of VRI Class III than Alternative COUT-B.

Environmental Consequences (Utah)

Scenery

Alternative COUT-B

Impacts on scenery are similar to 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.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Impacts on scenery are similar to Alternative COUT-B except for the area west of Argyle Canyon to Solider Summit where high impacts are anticipated on the Tavaputs Plateau and Roan Cliff landscapes. Route Variation COUT-B-1 would include several areas of high impacts where the Project would cross steep terrain, which through the construction of access roads and tower pads, as well as the addition of transmission structures and right-of-way vegetation clearing would modify the existing landscape character. To reduce contrast with the landscape's character, selective mitigation 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. Route Variations COUT-B-2 and COUT-B-4 would have fewer areas of high impacts when compared to COUT-B-1 by avoiding steep terrain west of U.S. Highway 191. Route Variations COUT-B-3 and COUT-B-5 would have the least amount of high impacts by avoiding the steepest terrain across Reservation Ridge.

Viewing Locations

Alternative COUT-B

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 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 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 H.

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 H.

Impacts on views from dispersed residences in Sanpete and Juab valleys and along the U.S. Highway 89 corridor are similar to Alternative COUT-A. 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 would also 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 H.

Travel Routes

High impacts would occur at both locations where the Project would cross 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 H.

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 would cross 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 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 would also be paralleled, and which 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 H.

Recreation Areas

Impacts associated with the Green River and dispersed recreation are similar to Alternative COUT-A.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Impacts on viewing locations for Route Variation COUT-B-1 are similar to Alternative COUT-B except for the following areas. High impacts are anticipated on views from dispersed residences on Reservation Ridge 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 the construction of access roads in

steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. Due to the long duration views of the Project from the Reservation Ridge Scenic Backway in the steep forested landscapes descending off of Reservation Ridge, high impacts would be produced by the Project on views from the scenic road. Selective mitigation measures would be applied to reduce contrast including decreasing ground disturbance during the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. In particular, selecting transmission tower locations where the side canyons descending off of Reservation Ridge can be spanned, would minimize access roads and vegetation clearing in these very steep canyon landscapes. For additional analysis, refer to the contrast rating worksheet for KOP #329 in Appendix H.

High impacts are anticipated on views from the uppermost portion of Argyle Canyon Road, at its intersection with U.S. Highway 191, due to the proposed transmission towers being skylined on Argyle Ridge less than 0.25 mile from the road. Selective mitigation measures to reduce contrast on these views are similar to those identified for views from the Reservation Ridge Scenic Backway. To most effectively reduce contrast, and therefore impacts on views from this portion of Argyle Canyon Road, would be to relocate the Project approximately 0.5 mile to the south to utilize existing topography screening. High impacts on views from U.S. Highway 191, where the Project is located within 0.5 mile of this scenic road in a steep forested landscape, are anticipated. To reduce contrast on views from U.S. Highway 191, selective mitigation measures, similar to those identified for views from Reservation Ridge, would be applied with the addition of maximizing the distance between transmission line structures at the road crossing to minimize the visual dominance of structures being located adjacent to the scenic road. For additional analysis, refer to the contrast rating worksheet for KOP #328 and the associated visual simulation in Appendix H.

Impacts on views from the Avintaquin Campground are also anticipated to be at a high level due to the steep forested terrain traversed by the Project within 0.5 mile of this campground. Similar selective mitigation measures would be applied to reduce contrast, as identified for views from the Reservation Ridge Scenic Backway, Argyle Canyon Road, and U.S. Highway 191, including relocating the Project to most effectively reduce contrast. The Project would be skylined on a high point adjacent to the campground and would begin to dominate views from the campground, though application of selective tower placement would reduce this visual dominance by utilizing topographic screening. For additional analysis, refer to the contrast rating worksheet for KOP #327 in Appendix H.

Impacts on viewing locations for Route Variation COUT-B-2 are similar to Alternative COUT-B except for the following areas. High impacts are anticipated on views from dispersed residences south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #330 in Appendix H. High impacts on views from U.S. Highway 191 are also anticipated where the Project would parallel this scenic road for approximately 1 mile through moderately steep terrain with groves of conifers and aspen. 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. Due to the long duration views of the Project from the Reservation Ridge Scenic Backway in the steep forested landscapes descending off of Reservation Ridge, high impacts would be produced by the Project on views from this scenic road as well. Selective mitigation measures that would be applied to reduce contrast are similar to those proposed to reduce contrast on views from U.S. Highway 191. In particular, selecting transmission tower locations where the side canyons descending off of Reservation Ridge can be spanned to minimize the construction of access roads and vegetation clearing in these very steep canyon landscapes.

Impacts on viewing locations for Route Variation COUT-B-3 are similar to Alternative COUT-B, including impacts on views from U.S. Highway 191, except for the following area. High impacts are anticipated on views from dispersed residences south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable.

Impacts on viewing locations for Route Variation COUT-B-4 are similar to Alternative COUT-B, including impacts on views from U.S. Highway 191, except for the following areas. High impacts are anticipated on views from dispersed residences south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. Due to the long duration views of the Project from the Reservation Ridge Scenic Backway in the steep forested landscapes descending off of Reservation Ridge, high impacts would be produced by the Project on views from the scenic road. Selective mitigation measures would be applied to reduce contrast including decreasing ground disturbance during the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. In particular, selecting transmission tower locations where the side canyons descending off of Reservation Ridge can be spanned to minimize the construction of access roads and vegetation clearing in these very steep canyon landscapes.

Impacts on viewing locations for Route Variation COUT-B-5 are similar to Alternative COUT-B except for the following areas. High impacts are anticipated on views from dispersed residences south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. High impacts on views from U.S. Highway 191 are also anticipated where the Project would parallel this scenic road for approximately 1 mile through moderately steep terrain with groves of conifers and aspen. Selective mitigation measures that would be applied to reduce contrast are similar to those proposed to reduce contrast on views from dispersed residences south of Reservation Ridge.

Federal Agency Visual Management Objectives

Alternative COUT-B

Bureau of Land Management Visual Resource Management Classes

The Utah portion of this alternative 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 measure 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 would also 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 U539 between Mileposts 1.0 and 1.8). 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.

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, except for an area southeast of Birdseye in this area (Link U621 between Mileposts 6.6 and 7.6). The existing transmission line traverses steep slopes in this area and views from U.S. Highway 89 would include several skylined transmission structures. Due to the dominance of the existing transmission line, the Project would be subordinate in this landscape setting. 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

Ashley National Forest

Within 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 partial retention VQO adjacent to the Tie Fork Rest Area. This alternative route would be completely located within 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 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 621, between Mileposts 4.4 and 5.1). As such, a potential amendment to the Manti-La Sal National Forest LRMP was identified and is discussed further in Chapter 5. Another portion of this management area is traversed farther to the south. Due to the dominance of the existing transmission line, the Project would be subordinate to the existing landscape character and would conform to the plan.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

The route variations would include the same areas of noncompliance with BLM VRM Class objectives as Alternative COUT-B, except Route Variation COUT-B-1 that would cross 2.8 miles not in compliance with VRM Class III objectives including:

- Reservation Ridge Scenic Backway (Vernal Field Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project as it parallels the Reservation Ridge Scenic Backway in a natural landscape setting through steep, forested terrain for 5 miles (approximately 10 minutes at 30 mph). Views from the road would be dominated by the Project, including the introduction of skylined transmission line structures, right-of-way vegetation clearing, and the construction of access roads. For more information refer to Contrast Rating Worksheet #329 (worksheet in development).

In addition to the modification VQO lands traversed by Alternative COUT-B, Route Variations COUT-B-1, COUT B-2, and COUT-B-4 cross partial retention VQO lands adjacent to the Reservation Ridge Scenic Backway and for Route Variation COUT-B-1, cross retention VQO lands adjacent to the Avintaquin Campground in the Ashley National Forest. Since the Ashley National Forest LRMP has a standard to meet the adopted VQO, these areas would not be compliant with the LRMP. As such, a plan amendment to change the VQO level would be required to permit the Project on these alternative routes. As described in the plan amendment portion of Chapter 5, it is recommended to amend these areas to a modification VQO for consistency with other areas on USFS lands traversed by major transmission line projects.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-246 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT-B (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-B	591,024	158,288	26.8	1,322,441	216,529	16.4	557,742	123,344	22.1
COUT-B-1	376,939	159,299	42.3	1,173,067	178,804	15.2	557,742	123,344	22.1
COUT-B-2	547,134	161,794	29.6	1,215,963	188,861	15.5	557,742	123,344	22.1
COUT-B-3	547,134	163,118	29.8	1,224,255	196,403	16.0	557,742	123,344	22.1
COUT-B-4	547,134	162,891	29.8	1,215,963	189,712	15.6	557,742	123,344	22.1
COUT-B-5	547,134	162,022	29.6	1,224,255	195,552	16.0	557,742	123,344	22.1

Effects on BLM SQRUs would be similar Alternative COUT-A with the exception that this alternative and route variations would additionally influence, cross and/or bisect the Argyle Creek and Green River/Book Cliffs (Class A) SQRUs. The Argyle Creek SQRU would be crossed and/or influenced in two areas where the Project would be adjacent to a lower voltage transmission line (not included on the scenic quality rating worksheet). The route variations all would cross/bisect this SQRU in steep, dissected mountainous terrain with limited cultural modifications associated with areas of cabin development. The Green River/Book Cliffs SQRU would be crossed and/or influenced by this alternative and route variations along its northern edge also within steep, dissected mountainous terrain adjacent to a lower voltage transmission line and areas of cabin development (not included on the scenic quality rating worksheet).

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Affected Environment (Colorado)

Scenery

Scenery crossed is similar to Alternative COUT-A. A total of 4.4 miles of Class B scenery and 20.4 miles of Class C scenery would be crossed by Alternative COUT-C.

The route variations would cross the same scenery as Alternative COUT-C.

Viewing Locations

Viewing locations are similar to Alternative COUT-A, including the route variations, 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 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

This alternative route and route variations would cross 18.1 miles of BLM-administered land, with all 18.1 miles in VRM Class III within the 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 and route variations would cross 24.8 miles in a Class C landscape within the White River Field Office. The following SQRUs were inventoried within 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 Creek¹
- M.F. Mountain¹
- Mormon Gap

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-C and route variations would cross 24.8 miles of moderate sensitivity lands. The following SLRUs were inventoried within the visual study area for this alternative route:

Moderate SLRUs

- Coal Oil Rim
- Skull Creek
- White River West

Distance Zones

Alternative COUT-C and route variations would be completely located within the foreground-middleground distance zone.

Visual Resource Inventory Classes

This alternative route and route variations would cross 24.8 miles in VRI Class IV within the White River Field Office.

Environmental Consequences (Colorado)

Scenery

Alternative COUT-C

Impacts on scenery are similar to Alternative COUT-A.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Impacts on scenery are the same as Alternative COUT-C.

Viewing Locations

Alternative COUT-C

Impacts on viewing locations are similar to 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.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Impacts on viewing locations are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Alternative COUT-C

Bureau of Land Management Visual Resource Management Classes

The Colorado portion of this alternative route and route variations would be compliant with VRM Class III lands.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-247 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT-C (COLORADO)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-C	0	0	0.0	169,742	25,679	15.1	167,982	79,127	47.1
COUT-C-1	0	0	0.0	169,742	25,679	15.1	167,982	79,127	47.1
COUT-C-2	0	0	0.0	169,742	25,679	15.1	167,982	79,127	47.1
COUT-C-3 (Agency Preferred Alternative)	0	0	0.0	169,742	25,679	15.1	167,982	79,127	47.1
COUT-C-4	0	0	0.0	169,742	25,679	15.1	167,982	79,127	47.1
COUT-C-5	0	0	0.0	169,742	25,679	15.1	167,982	79,127	47.1

Effects on BLM SQRUs are similar to those discussed for Alternative COUT-A and associated route variation.

Affected Environment (Utah)

Scenery

Scenery crossed is similar to 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 would cross 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 within 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 would 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 U406, 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 would cross the Roan Cliffs into Emma Park and parallel 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. A total of 3.2 miles of Class A scenery, 100.8 miles of Class B scenery, 83.9 miles of Class C scenery, and 0.7 mile of developed land would be crossed by Alternative COUT-C.

Route Variation COUT-C-1 would cross an additional 8.6 miles of Class B scenery associated with the Tavaputs Plateau and Roan Cliff landscapes, and 11.4 fewer miles Class C scenery.

Route Variations COUT-C-2 and COUT-C-4 would cross an additional 10.1 miles of Class B scenery associated with the Tavaputs Plateau and Roan Cliff landscapes, and 11.4 fewer miles Class C scenery.

Route Variations COUT-C-3 and COUT-C-5 would cross an additional 9.8 miles of Class B scenery associated with the Tavaputs Plateau and Roan Cliff landscapes, and 11.4 fewer miles Class C scenery.

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 U404. Dispersed rural residences are concentrated in five areas along this alternative route: (1) Minnie Maud Creek, (2) Spanish Fork Canyon, (3) U.S. Highway 89 corridor, (4) Sanpete Valley, and (5) 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 U524 at the base of 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 would cross the scenic road. Link U401 would cross 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 U524, U530, U539, and U460 where the highway would be paralleled for more than 30 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 would cross the White River in an area south of the Enron Recreation Site at the south end of the Chapita Wells Gas Field. 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 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

Additional KOPs associated with the route variations:

- #327: Avintaquin Campground is associated with Route Variation COUT-C-1
- #328: Indian Canyon Scenic Byway simulation is associated with Route Variation COUT-C-1
- #329: Reservation Ridge Scenic Backway is associated with Route Variations COUT-C-1, COUT-C-2, and COUT-C-4
- #330: Dispersed residences north of Emma Park are associated with Route Variations COUT-C-4 and COUT-C-5

Viewing locations for Route Variation COUT-C-1 are similar to Alternative COUT-C except for additional areas of dispersed residences on Argyle Ridge and west of Argyle Canyon on Reservation Ridge, crossing U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) in steep terrain on Link U513, paralleling the Reservation Ridge Scenic Backway on Links U513 and U515 for approximately 12 miles, located within 0.25 mile of Argyle Canyon Road on Argyle Ridge, and within 0.5 mile of the Avintaquin Campground.

Viewing locations for Route Variation COUT-C-2 are similar to Alternative COUT-C except for additional areas of dispersed residences on Argyle Ridge and south of Reservation Ridge, paralleling U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) for approximately 1 mile on Link U520, and paralleling the Reservation Ridge Scenic Backway on Link U515 for approximately 5 miles.

Viewing locations for Route Variation COUT-C-3 are similar to Alternative COUT-C except for additional areas of dispersed residences on Argyle Ridge and south of Reservation Ridge as well as paralleling U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) for approximately 1 mile on Link U520.

Viewing locations for Route Variation COUT-C-4 are similar to Alternative COUT-C except for additional areas of dispersed residences along Minnie Maud Creek and south of Reservation Ridge, crossing U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) approximately 1 mile further north on Link U514, and paralleling the Reservation Ridge Scenic Backway on Link U515 for approximately 5 miles.

Viewing locations for Route Variation COUT-C-5 are similar to Alternative COUT-C except for additional areas of dispersed residences along Minnie Maud Creek and south of Reservation Ridge, and U.S. Highway 191 (designated as both the Dinosaur Diamond and Indian Canyon Scenic Byways) would be crossed approximately 1 mile further north on Link U514.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

This alternative route would cross 72.8 miles of BLM-administered land, with 3.1 miles in VRM Class II, 19.3 miles in VRM Class III, and 50.4 miles in VRM Class IV within the 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.

Route Variation COUT-C-1 would cross 3.8 more miles of VRM Class III and 3.4 more miles of VRM Class IV than Alternative COUT-C.

Route Variation COUT-C-2 would cross 1.0 mile more of VRM Class III and 3.4 more miles of VRM Class IV than Alternative COUT-C.

Route Variation COUT-C-3 would cross 4.0 miles more of VRM Class III than Alternative COUT-C.

Route Variation COUT-C-4 would cross 1.2 miles more of VRM Class III and 3.4 miles more of VRM Class IV than Alternative COUT-C.

Route Variation COUT-C-5 would cross 4.2 miles more of VRM Class III than Alternative COUT-C.

U.S. Forest Service Visual Quality Objectives

This alternative route would cross 9.8 miles of USFS-administered lands within the Uinta-Wasatch-Cache and Manti-La Sal National Forests. On the Uinta-Wasatch-Cache National Forest, 0.1 mile would cross a retention VQO, 6.1 miles would cross a partial retention VQO and 1.8 miles would cross a modification VQO. The Project would cross 1.9 miles within a partial retention VQO on the Manti-La Sal National Forest.

On the Uinta-Wasatch-Cache National Forest, Route Variations COUT-C-1, COUT-C-2, and COUT-C-4 would cross 0.8 mile more of modification VQO than Alternative COUT-C. Route Variations COUT-C-3 and COUT-C-4 would cross 0.1 fewer mile of partial retention VQO within the Uinta-Wasatch-Cache National Forest.

On the Ashley National Forest, Route Variation COUT-C-1 would cross 0.4 mile of retention VQO and 0.5 mile of partial retention VQO; and Route Variations COUT-C-2 and COUT-C-4 would cross 0.5 mile of partial retention VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-C would cross 55.1 miles of Class A, 58.3 miles of Class B, and 60.8 miles of Class C landscapes in the Vernal, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Argyle Creek¹
- Ford Ridge
- Green River/Book Cliffs¹
- Jack Canyon WSA¹
- South Green River¹
- Spanish Fork Canyon¹
- White River¹

Class B SQRUs

- Beaver Ridge¹
- Bitter Creek Canyon
- Blue Mountain Valley
- Dog Valley¹
- Emma Park¹
- Gilsonite Draw¹
- Kyune¹
- Red Wash/Kennedy Wash/Devil's Playground¹
- San Pitch Mountains¹
- Sanpete Valley¹
- Squaw Ridge¹
- The Book Cliffs
- Wrinkles Road¹

Class C SQRUs

- Apple Spring¹
- Bonanza¹
- Cottonwood Wash¹
- Deadman's Bench¹
- East Bench¹
- Little Desert¹
- Pariette Bench
- Sand Spring Wash¹
- Sand Wash¹
- Tabaygo Canyon¹

Note: ¹SQRUs crossed by the Project

Route Variation COUT-C-1 would cross 13.7 miles more of Class A and 19.0 fewer miles of Class B than Alternative COUT-C. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Jack Canyon, Beaver Ridge, Emma Park and Kyune SQRUs.

Route Variation COUT-C-2 would cross 15.6 miles more of Class A and 19.0 fewer miles of Class B than Alternative COUT-C. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Jack Canyon, Beaver Ridge, Emma Park, and Kyune SQRUs.

Route Variation COUT-C-3 would cross 16.8 miles more of Class A and 19.0 fewer miles of Class B than Alternative COUT-C. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Jack Canyon, Beaver Ridge, Emma Park, and Kyune SQRUs.

Route Variation COUT-C-4 would cross 15.7 miles more of Class A and 19.0 fewer miles of Class B than Alternative COUT-C. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Beaver Ridge, Emma Park, and Kyune SQRUs.

Route Variation COUT-C-5 would cross 16.9 miles more of Class A and 19.0 fewer miles of Class B than Alternative COUT-C. This route variation would not influence the Ford Ridge or Book Cliffs SQRUs and would not cross, but influence the Beaver Ridge, Emma Park, and Kyune SQRUs.

Sensitivity Level Rating Units

Alternative COUT-C would cross 55.8 miles of high sensitivity, 72.8 miles of moderate sensitivity, and 48.6 miles of low sensitivity lands.

The following SLRUs were inventoried within the visual study area for this alternative route:

High SLRUs

- Green River Lower Segment
- Nine Mile Backway
- Nine Mile Canyon
- West Book Cliffs

Moderate SLRUs

- Book Cliffs
- I-15
- Spanish Fork Canyon
- White River

Low SLRUs

- Eightmile Flat
- Full-Field Development Area
- San Pitch Mountains
- Sanpete Valley

Route Variation COUT-C-1 would cross 2.3 fewer miles of high sensitivity and 1.7 fewer miles of moderate sensitivity than Alternative COUT-C. This route variation would not cross the Ninemile Backway and West Book Cliffs SLRUs.

Route Variation COUT-C-2 would cross 1.2 fewer miles of high sensitivity and 0.9 fewer mile of moderate sensitivity than Alternative COUT-C. This route variation would not cross the Ninemile Backway and West Book Cliffs SLRUs.

Route Variation COUT-C-3 would cross 1.2 fewer miles of high sensitivity and 1.1 fewer miles of moderate sensitivity than Alternative COUT-C. This route variation would not cross the Ninemile Backway and West Book Cliffs SLRUs.

Route Variation COUT-C-4 would cross 1.1 fewer miles of high sensitivity and 0.9 fewer mile of moderate sensitivity than Alternative COUT-C. This route variation would not cross the Ninemile Backway SLRU.

Route Variation COUT-C-5 would cross 1.1 fewer miles of high sensitivity and 1.1 fewer miles of moderate sensitivity than Alternative COUT-C. This route variation would not cross the Ninemile Backway SLRU.

Distance Zones

This alternative route would cross 168.0 miles within the foreground-midground distance zone and 17.0 miles in the background distance zone.

Route Variation COUT-C-1 would cross 2.3 fewer miles within the foreground-midground distance zone and 1.2 fewer miles in the background distance zone than Alternative COUT-C.

Route Variations COUT-C-2 and COUT-C-4 would cross 0.2 more miles in the foreground-midground distance zone and 2.1 fewer miles in the background distance zone than Alternative COUT-C.

Route Variations COUT-C-3 and COUT-C-5 would cross 2.1 fewer miles in the background distance zone than Alternative COUT-C.

Visual Resource Inventory Classes

This alternative route would cross 67.1 miles of VRI Class II, 32.6 miles in VRI Class III, and 64.3 miles in VRI Class IV within 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.

Route Variation COUT-C-1 would cross 3.9 more miles of VRI Class II and 11.9 fewer miles of VRI Class III than Alternative COUT-C.

Route Variation COUT-C-2 would cross 4.1 more miles of VRI Class II and 11.0 fewer miles of VRI Class III than Alternative COUT-C.

Route Variation COUT-C-3 would cross 8.3 more miles of VRI Class II and 11.0 fewer miles of VRI Class III than Alternative COUT-C.

Route Variation COUT-C-4 would cross 2.5 fewer miles of VRI Class II and 4.4 fewer miles of VRI Class III than Alternative COUT-C.

Route Variation COUT-C-5 would cross 1.8 more miles of VRI Class II and 4.4 fewer miles of VRI Class III than Alternative COUT-c.

Environmental Consequences (Utah)

Scenery

Alternative COUT-C

Effects of the Project on the rural character of landscapes associated with this alternative 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 would cross 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 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 within the Green River landscape. High impacts also would occur where the Project traverses steep areas within 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 within 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.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Impacts on scenery are similar to Alternative COUT-C except for the area south of the Argyle Canyon crossing to Solider Summit where high impacts are anticipated on the Tavaputs Plateau and Roan Cliff landscapes. Route Variation COUT-C-1 would include several areas of high impacts where the Project would cross steep terrain, which through the construction of access roads and tower pads, as well as the addition of transmission structures and right-of-way vegetation clearing would modify the existing landscape character. To reduce contrast with the landscape's character, selective mitigation 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. Route Variation COUT-C-2 would avoid the additional

areas of high impacts on steep terrain west of U.S. Highway 191 in the Tavaputs Plateau landscape. Route Variation COUT-C-3 would further avoid the areas of high impacts west of U.S. Highway 191 by completely avoiding the steep terrain on Reservation Ridge. Route Variations COUT-C-4 and COUT-C-5 would avoid some of the high impact areas east of U.S. Highway 191, with COUT-C-5 also avoiding the steep terrain on Reservation Ridge and therefore those areas of high impacts.

Viewing Locations

Alternative COUT-C

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. For additional analysis, refer to the contrast rating worksheet for KOP #200 and the associated visual simulation in Appendix H.

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. High impacts are anticipated on views from a dispersed residence adjacent to Minnie Maud Creek where the Project would be located within a 0.5 mile of the residence traversing steep slopes on Maud Ridge. To reduce contrast produced by the Project, selective mitigation measures would be applied, including limiting the construction of access roads to the extent practicable and minimizing ground disturbance from the access roads that would be constructed.

Travel Routes

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 are the same as Alternative COUT-B. High impacts would occur on views from the Nine Mile Canyon Scenic Backway where the Project would cross 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 within 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 H. 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 would cross the road in a rolling sagebrush-dominated landscape. To decrease contrast on these views, selective mitigation 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 H.

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 would cross 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 within view of the river, minimizing ground disturbance associated with construction 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 H.

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 H.

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 the Project would be viewed from.

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 would be applied to limit vegetation clearing in the right-of-way to the extent practicable.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Impacts on viewing locations for Route Variation COUT-C-1 are similar to Alternative COUT-C except for the following areas. High impacts are anticipated on views from dispersed residences on Argyle Ridge and Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. Due to the long duration views of the Project from the Reservation Ridge Scenic Backway in the steep forested landscapes descending off of Reservation Ridge, high impacts would be produced by the Project on views from the scenic road. Selective mitigation measures would be applied to reduce contrast including decreasing ground disturbance during the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. In particular, selecting transmission tower locations where the side canyons descending off of Reservation Ridge can be spanned, would minimize access roads and vegetation clearing in these very steep canyon landscapes. For additional analysis, refer to the contrast rating worksheet for KOP #329 in Appendix H. High impacts are anticipated on views from the uppermost portion of Argyle Canyon Road, at its intersection with U.S. Highway 191, due to the proposed transmission towers being skylined on Argyle Ridge less than 0.25 mile from the road. Selective mitigation measures to reduce contrast on these views are similar to those identified for views from the Reservation Ridge Scenic Backway. To most effectively reduce contrast and impacts on views from this portion of Argyle Canyon Road, the Project would need to be relocated approximately 0.5 mile to the south to utilize existing topography screening. High impacts on views from U.S. Highway 191, where the Project is located within 0.5 mile of this scenic road in a steep forested landscape, are anticipated. To reduce contrast on views from U.S. Highway 191, selective mitigation measures, similar to those identified for views from Reservation Ridge, would be applied with the addition of maximizing

the distance between transmission line structures at the road crossing to minimize the visual dominance of structures being located adjacent to the scenic road. For additional analysis, refer to the contrast rating worksheet for KOP #328 and the associated visual simulation in Appendix H. Impacts on views from the Avintaquin Campground are also anticipated to be at a high level due to the steep forested terrain traversed by the Project within 0.5 mile of this campground. Similar selective mitigation measures would be applied to reduce contrast, as identified for views from the Reservation Ridge Scenic Backway, Argyle Canyon Road, and U.S. Highway 191, including relocating the Project to most effectively reduce contrast. The Project would be skylined on a high point adjacent to the campground which would begin to dominate views from the campground, though application of selective tower placement would reduce this visual dominance by utilizing topographic screening. For additional analysis, refer to the contrast rating worksheet for KOP #327 in Appendix H.

Impacts on viewing locations for Route Variation COUT-C-2 are similar to Alternative COUT-C except for the following areas. High impacts are anticipated on views from dispersed residences on Argyle Ridge and south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. For additional analysis, refer to the contrast rating worksheet for KOP #330 in Appendix H. High impacts on views from U.S. Highway 191 are also anticipated where the Project would parallel this scenic road for approximately 1 mile through moderately steep terrain with groves of conifers and aspen. 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. Due to the long duration views of the Project from the Reservation Ridge Scenic Backway in the steep forested landscapes descending off of Reservation Ridge, high impacts would be produced by the Project on views from this scenic road as well. Selective mitigation measures that would be applied to reduce contrast are similar to those proposed to reduce contrast on views from U.S. Highway 191. In particular, selecting transmission tower locations where the side canyons descending off of Reservation Ridge can be spanned to minimize the construction of access roads and vegetation clearing in these very steep canyon landscapes.

Impacts on viewing locations for Route Variation COUT-C-3 are similar to Alternative COUT-C except for the following areas. High impacts are anticipated on views from dispersed residences on Argyle Ridge and south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. High impacts on views from U.S. Highway 191 are also anticipated where the Project would parallel this scenic road for approximately 1 mile through moderately steep terrain with groves of conifers and aspen. Selective mitigation measures that would be applied to reduce contrast are similar to those proposed to reduce contrast on views from dispersed residences south of Reservation Ridge.

Impacts on viewing locations for Route Variation COUT-C-4 are similar to Alternative COUT-C, including impacts on views from U.S. Highway 191, except for the following areas. High impacts are anticipated on views from dispersed residences along Minnie Maud Creek and south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable. Due to the long duration views of the Project from the Reservation Ridge Scenic Backway in the steep forested landscapes descending off of Reservation Ridge, high impacts would be produced by the Project on views

from the scenic road. Selective mitigation measures would be applied to reduce contrast including decreasing ground disturbance during the construction of access roads and limiting vegetation clearing in the right-of-way to the extent practicable. In particular, selecting transmission tower locations where the side canyons descending off of Reservation Ridge can be spanned to minimize the construction of access roads and vegetation clearing in these very steep canyon landscapes.

Impacts on viewing locations for Route Variation COUT-C-5 are similar to Alternative COUT-C, including impacts on views from U.S. Highway 191, except for the following areas. High impacts are anticipated on views from dispersed residences along Minnie Maud Creek and south of Reservation Ridge 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 the construction of access roads in steep terrain and minimize vegetation clearing in the right-of-way to the extent practicable.

Federal Agency Visual Management Objectives

Alternative COUT-C

Bureau of Land Management Visual Resource Management Classes

Of the 72.8 miles of BLM-administered land crossed by this alternative route in the Vernal, Price, Richfield, and Fillmore Field Offices, Alternative COUT-C would have 5.2 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 within 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 within 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 within 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 within 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 would also 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 U539 between Mileposts 1.0 and 1.8). 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.

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, except for an area southeast of Birdseye (Link U621 between Mileposts 6.6 and 7.6). The existing transmission line traverses steep slopes in this area; therefore views from U.S. Highway 89 would include several skylined transmission structures. Due to the dominance of the existing transmission line, the Project would be subordinate in this landscape setting. 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

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 partial retention VQO 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, 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 621, between Mileposts 4.4 and 5.1). As such, a potential amendment to the Manti-La Sal National Forest LRMP was identified and is discussed further in Chapter 5. Another portion of this management area is traversed farther to the south. Due to the

dominance of the existing transmission line, the Project would be subordinate to the existing landscape character and would conform to the plan.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

The route variations would include the same areas of noncompliance with BLM VRM Class objectives as Alternative COUT-C, except Route Variation COUT-C-1 which would cross 2.8 miles not in compliance with VRM Class III objectives including:

- Reservation Ridge Scenic Backway (Vernal Office) – Noncompliance with VRM Class III objectives would occur where motorists would have long duration views of the Project as it parallels the Reservation Ridge Scenic Backway in a natural landscape setting through steep, forested terrain for 5 miles (approximately 10 minutes at 30 mph). Views from the road would be dominated by the Project, including the introduction of skylined transmission line structures, right-of-way vegetation clearing, and the construction of access roads. For more information refer to Contrast Rating Worksheet #329 (worksheet in development).

In addition to the modification VQO lands traversed by Alternative COUT-C, Route Variations COUT-C-1, COUT-C-2, and COUT-C-4 cross partial retention VQO lands adjacent to the Reservation Ridge Scenic Backway

Bureau of Land Management Visual Resource Inventory Components

Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-C	776,466	219,863	28.3	1,338,643	211,212	15.8	848,812	222,383	26.2
COUT-C-1	732,576	226,779	31.0	1,189,269	163,102	13.7	848,812	222,383	26.2
COUT-C-2	732,576	229,270	31.3	1,232,165	173,159	14.1	848,812	222,383	26.2
COUT-C-3 (Agency Preferred Alternative)	732,576	229,498	31.3	1,240,457	179,850	14.5	848,812	222,383	26.2
COUT-C-4	732,576	231,365	31.6	1,232,165	176,872	14.4	848,812	222,383	26.2
COUT-C-5	732,576	231,593	31.6	1,240,457	183,563	14.8	848,812	222,383	26.2

This alternative route, and route variations, would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 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, as well as 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 and route variations, which would cross the SQRU east of U.S. Highway 191 in mountainous terrain where limited cabin development occurs. East of U.S. Highway 191, the alternative route would be located adjacent to a lower voltage transmission line and U.S. Highway 6; whereas, the route variations would cross/bisect this SQRU in steep, dissected mountainous terrain with limited cultural modifications associated with areas of cabin development. The Jack Canyon WSA and Green River/Book Cliffs SQRUs (Class A) would be crossed and/or influenced by this alternative route and route variations within steep, dissected mountainous terrain adjacent to areas of cabin development. The Spanish Fork Canyon (Class A) would be crossed by this alternative and route variation in varying steep and rugged mountainous terrain and canyons adjacent to existing transmission lines (included on the scenic quality rating worksheet).

Alternative COUT-H (Applicant Preferred Alternative)

Affected Environment (Colorado)

Scenery

Scenery crossed is the same as Alternative COUT-C.

Viewing Locations

Viewing locations are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative COUT-C.

Environmental Consequences (Colorado)

Scenery

Impacts on scenery are the same as Alternative COUT-A.

Viewing Locations

Impacts on viewing locations are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Compliance with Federal Agency Visual Management Objectives is the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

Effects on BLM SQRUs are the same as Alternative COUT-C.

Affected Environment (Utah)

Scenery

Scenery crossed is similar to 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. Within 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 would cross 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 would cross sagebrush-dominated basin landscapes (Class C) within 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. A total of 5.8 miles of Class A scenery, 85.5 miles of Class B scenery, 84.1 miles of Class C scenery, and 0.4 mile of developed land would be crossed by Alternative COUT-H.

Viewing Locations

Viewing locations are similar to Alternative COUT-C from the Utah-Colorado border to Emma Park.

Residences

High concern residential viewers within 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 this alternative route: (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 would also cross 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 within 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 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. Highway 191) [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

This alternative route would cross 77.8 miles of BLM-administered land with 3.1 miles in VRM Class II, 24.2 miles in VRM Class III, and 50.5 miles in VRM Class IV within the 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

This alternative route would cross 7.7 miles of USFS-administered lands within the Manti-La Sal National Forest, all within a partial retention VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-H would cross 26.9 miles of Class A, 71.7 miles of Class B, and 66.4 miles of Class C landscapes in the Vernal, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Argyle Creek¹
- Ford Ridge
- Green River/Book Cliffs¹
- Jack Canyon WSA¹
- South Green River¹
- White River¹

Class B SQRUs

- Blue Mountain Valley
- Dog Valley¹
- Emma Park¹
- Gilsonite Draw¹
- Manti-La Sal¹
- Red Wash/Kennedy Wash/
Devil's Playground¹
- San Pitch Mountains¹
- Sanpete Valley¹
- Squaw Ridge¹
- The Book Cliffs¹
- The Book Cliffs Bench
- The Western Bench¹
- Wrinkles Road¹

Class C SQRUs

- Apple Spring¹
- Bonanza¹
- Clark Valley and the Price
River Valley¹
- Cottonwood Wash¹
- Deadman's Bench¹
- East Bench¹
- Little Desert¹
- Pariette Bench
- Sand Spring Wash¹
- Sand Wash¹
- Tabaygo Canyon¹

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-H would cross 67.9 miles of high sensitivity, 39.5 miles of moderate sensitivity, and 63.6 miles of low sensitivity lands. The following SLRUs were inventoried within 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

This alternative route would cross 139.3 miles within the foreground-middleground distance zone, 25.9 miles in the background distance zone, and 10.4 miles in the seldom seen distance zone.

Visual Resource Inventory Classes

This alternative route would cross 42.7 miles of VRI Class II, 43.1 miles in VRI Class III, and 73.2 miles in VRI Class IV within 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 Emma Park.

Environmental Consequences (Utah)

Scenery

Impacts across this alternative route would be similar to 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 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 within 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

Impacts on viewing locations are similar to Alternative COUT-C from the Utah-Colorado border to Emma Park.

Residences

Impacts on views from residences within 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 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 H.

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 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 H. 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 H.

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 H. 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 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 H. The Project would cross 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 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 would cross 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 H.

Moderate impacts are anticipated on intermittently screened views of the Project from the Skyline Drive Scenic Backway, where the Project would be located within 1.0 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 the Project would be viewed from.

Federal Agency Visual Management Objectives

Bureau of Land Management Visual Resource Management Classes

Of the 77.8 miles of BLM-administered land crossed by this alternative route in the Vernal, Price, Richfield, and Fillmore Field Offices, Alternative COUT-H would have 5.2 miles not 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 this alternative route.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-249 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT-H (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-H (Applicant Preferred Alternative)	527,725	93,773	17.8	1,625,901	292,437	18.0	1,246,946	240,155	19.3

This alternative route would locally affect scenic quality through the introduction of either new or additional cultural modifications within 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 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 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.

Alternative COUT-I

Affected Environment (Colorado)

Scenery

Scenery crossed is the same as Alternative COUT-C.

Viewing Locations

Viewing locations are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Federal Agency Visual Management Objectives are the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

SQRUs, SLRUs, distance zones, and VRI classes are the same as Alternative COUT-C.

Environmental Consequences (Colorado)

Scenery

Impacts on scenery are the same as Alternative COUT-C.

Viewing Locations

Impacts on viewing locations are the same as Alternative COUT-C.

Federal Agency Visual Management Objectives

Compliance with Federal Agency Visual Management Objectives is the same as Alternative COUT-C.

Bureau of Land Management Visual Resource Inventory Components

Effects on BLM SQRUs are the same as Alternative COUT-C.

Affected Environment (Utah)

Scenery

Scenery crossed is similar to 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 would cross 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. Within 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 would cross 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 would cross 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 would cross sagebrush-dominated basin landscapes (Class C) within 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. A total of 12.4 miles of Class A scenery, 84.2 miles of Class B scenery, 118.6 miles of Class C scenery, and 0.2 mile of developed land would be crossed by Alternative COUT-I.

Viewing Locations

Viewing locations are similar to Alternative COUT-C from the Utah-Colorado border to Emma Park.

Residences

High concern residential viewers within the communities of Huntington (Link 498) and Mount Pleasant (Link U630) would have views of the Project. Dispersed rural residences are generally located in five areas along this alternative route: (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 would cross 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, within lands mostly managed by the Manti-La Sal National Forest, increased dispersed recreation opportunities occur along Links U629 and U630. Dispersed recreation opportunities are also located across BLM- and state-administered lands, including big game hunting, camping, fishing, geocaching, hiking, and many others.

KOPs specific to Alternative COUT-I 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

This alternative route would cross 104.7 miles of BLM-administered land with 3.1 miles in VRM Class II, 33.0 miles in VRM Class III, and 68.6 miles in VRM Class IV within the 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

This alternative route would cross 16.3 miles of USFS-administered lands within the Manti-La Sal National Forest. The Project would cross 11.2 miles within a partial retention VQO and 5.1 miles within a modification VQO.

Bureau of Land Management Visual Resource Inventory Components

Scenic Quality

Alternative COUT-I would cross 26.9 miles of Class A, 72.7 miles of Class B, and 94.7 miles of Class C landscapes in the Vernal, Price, Richfield, and Fillmore Field Offices. The following SQRUs were inventoried within the visual study area for this alternative route:

Class A SQRUs

- Argyle Creek¹
- Green River/Book Cliffs¹
- Jack Canyon WSA¹
- South Green River¹
- White River¹

Class B SQRUs

- Blue Mountain Valley
- Cleveland Lloyd Dinosaur Quarry
- Dog Valley¹
- Emma Park¹
- Gilsonite Draw¹
- Manti-La Sal¹
- Price River
- Red Wash/Kennedy Wash/Devil's Playground¹
- San Pitch Mountains¹
- Sanpete Valley¹
- Squaw Ridge¹
- The Book Cliffs¹
- The Book Cliffs Bench¹
- The Western Bench¹
- Wrinkles Road¹

Class C SQRUs

- Apple Spring¹
- Bonanza¹
- Clark Valley and the Price River Valley¹
- Cottonwood Wash¹
- Deadman's Bench¹
- East Bench¹
- Little Desert¹
- Pariette Bench
- Sand Spring Wash¹
- Sand Wash¹
- Tabaygo Canyon¹

Note: ¹SQRUs crossed by the Project

Sensitivity Level Rating Units

Alternative COUT-I would cross 81.4 miles of high sensitivity, 31.7 miles of moderate sensitivity, and 100.3 miles of low sensitivity lands. The following SLRUs were inventoried within 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

This alternative route would cross 179.0 miles within 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

This alternative route would cross 55.1 miles of VRI Class II, 22.9 miles in VRI Class III, and 110.8 miles in VRI Class IV within 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, Emma Park, the Book Cliffs, and east side of the Wasatch Plateau adjacent to Huntington.

Environmental Consequences (Utah)

Scenery

Impacts across this alternative route would be similar to 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 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 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

Impacts on viewing locations are similar to 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 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 H. 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 H. Impacts on views from dispersed residences in Juab Valley would be similar to 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 H. 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 would cross 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 H. Moderate impacts would occur on views from the Energy Loop Scenic Byway west of Huntington, where the Project would cross 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 H.

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 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 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 H.

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 the Project would be viewed from. 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 104.7 miles of BLM-administered land crossed by this alternative route in the Vernal, Price, Richfield, and Fillmore Field Offices, Alternative COUT-I would have 5.2 miles not 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 629 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.

Bureau of Land Management Visual Resource Inventory Components

TABLE 3-250 EFFECTS ON BUREAU OF LAND MANAGEMENT SCENIC QUALITY RATING UNITS FOR ALTERNATIVE COUT-I (UTAH)									
Alternative Route	Class A			Class B			Class C		
	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project	Total Area (acres)	Area Influenced by the Project (acres)	Percentage influenced by the Project
COUT-I	483,835	91,672	18.9	1,669,966	301,566	18.1	1,246,946	339,835	27.3

Effects on BLM SQRUs are similar to those discussed for Alternative COUT-H.

3.2.16.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Siting Area A – Powder Wash

Affected Environment

Scenery

Scenery within this siting area 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 within 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 the siting area 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 within the siting area are administered by the BLM and have been designated as VRM Class III by both the 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 the siting area: 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 within the foreground-middleground distance zone except for a small portion of a background distance zone south of the Wyoming-Colorado border.

VRI Classes within the siting area 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 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 within the siting area, 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 this siting area 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 within 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 within 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 within this siting area 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 the siting area: 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 within the foreground-middleground distance zone whereas the eastern portion is in the background distance zone.

VRI Classes within 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 within the siting area, the introduction of this facility in to 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 the siting area, 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 within the siting area, 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 within this siting area 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 in this area, through the introduction of agricultural development, has a rural landscape character. The southern portion of the siting area includes U.S. Highway 40 and two existing transmission lines which dominate the local landscape character in this area.

Viewing Locations

Dispersed residences adjacent to the Yampa River are located in the northern portion of the siting area. 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 within this siting area 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 the siting area: Douglas Draw/Peck Mesa (Class B), Maybell (Class B), Windy Gulch (Class B), Cross Mountain (Class B), Twelvemile Mesa (Class B), 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 within the foreground-middleground distance zone except for a small portion of a background distance zone west of the Yampa River.

VRI Classes within the siting area include Class II, Class III, and Class IV lands. The VRI 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 the siting area 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 which 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 within the siting area, 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 and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

Siting Area D – Bell Rock

Affected Environment

Scenery

Scenery in this siting area 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 which bisect the siting area.

Viewing Locations

Widespread dispersed residences (KOP #52) are located in the eastern and northern portions of the siting area which have varying level of existing modifications within 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 this siting area 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 the siting area: 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 within the foreground-middleground distance zone except for a small portion of a background distance zone in Sand Spring Gulch.

VRI Classes within the siting area 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 within the agricultural landscapes in the eastern portion of the siting area 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 within the siting area, 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 and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F and route variations 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 and route variations 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 and route variations 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 within this siting area 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 the siting area 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 within this siting area 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 the siting area: 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 within the foreground-middleground distance zone.

VRI Classes within the siting area 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 which 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 which 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 which 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 within the siting area, 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 and Route Variation (COUT-A-1)

Siting Area F – Roosevelt

Affected Environment

Scenery

Scenery within this siting area 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 within the siting area 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 which 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 this siting area.

Bureau of Land Management Visual Resource Inventory Components

The following SQRUs are located in the siting area: Pelican Lake (Class B) and Ouray Valley (Class C).

The following SLRUs are located in the siting area: Full-Field Development Area (low sensitivity).

The entire siting area is located within the foreground-middleground distance zone.

VRI Classes within the siting area 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 the siting area, 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 the siting area, compliance with VRM Class objectives is not applicable for the facility in this area.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

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

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Siting Area E – Bonanza

Affected Environment

Scenery

Scenery within this siting area is primarily Class C associated with the sagebrush valley landscapes typical of the Uinta Basin physiographic section of the Colorado Plateaus physiographic province. The character of landscapes within 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 within this siting area due to 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 within this siting area 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 the siting area: 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: Full-Field Development Area (low sensitivity).

The entire siting area is located within the foreground-middleground distance zone.

VRI Classes within the siting area only include Class IV lands.

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 minimally impact scenery within the siting area. 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 within the siting area, 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 (Applicant Preferred Alternative) 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.

3.2.17 National Trails System

The 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 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 2012a). 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/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.

3.2.17.1 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 Memorandum of Understanding (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 2012k, l, m). 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 2012g). This manual details the steps required to identify and manage NST and NHT resources within 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 2012g)1-22-1-23.

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 2012g).

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 within the Project study area. The Old Spanish Trail was designated as a 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 within 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 National Historic 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) The 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.
- *National Landscape Conservation System* (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 National Landscape Conservation System 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, Wild and Scenic rivers, 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* (16 U.S.C. 470; 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.

3.2.17.2 Issues Identified for Analysis

3.2.17.2.1 Continental Divide National Scenic Trail

The Continental Divide NST was established by Congress in 1978 as a 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.

3.2.17.2.2 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. 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.

3.2.17.2.3 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.

3.2.17.2.4 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. This

historic trail would also be potentially crossed by Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F.

Map 3-13 indicates the locations of the NHTs, NSTs, and trails under feasibility study in the Project area.

3.2.17.3 Regional Setting

3.2.17.3.1 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 Forest Service 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.

3.2.17.3.2 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 Mormons 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 which 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 is also characterized by a nearly level plain with desert shrub vegetation but other than an existing transmission line, the landscape character has been minimally modified. There are several recreation opportunities

which 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.

3.2.17.3.3 Overland Historic Trail (under feasibility study)

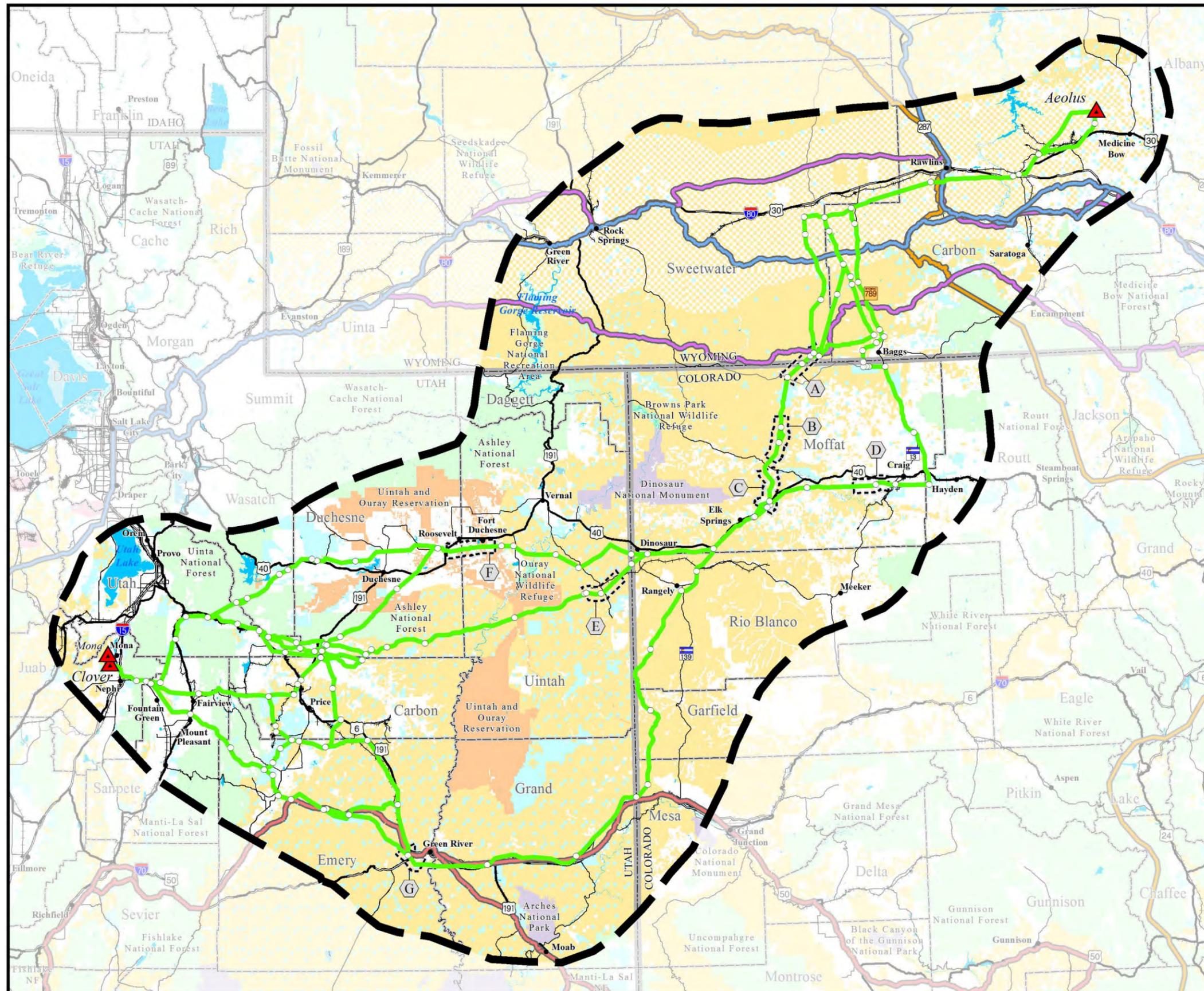
The historic Overland Trail was a principal overland stage and emigrant trail route between Kansas and Utah used intensively between 1862 and 1869 (Junge 1975; Larson 2000). The trail originated at Atchison, Kansas, and closely followed the Oregon Trail until Julesberg, Colorado. From this location the 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 (Larson 2000). 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 1860's 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; Larson 2000; 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 2012c).

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.

3.2.17.3.4 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 and Fletcher 2012; 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 and Fletcher 2012; Leicht 1984; NPS 2012d). 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 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 2012c). 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.



Map 3-13
National Trails System

**ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT**

National Scenic and Historic Trails

- Continental Divide National Scenic Trail
- Overland Historic Trail (under feasibility study)
- Old Spanish National Historic Trail
- 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
- U.S. Fish and Wildlife Service
- Bureau of Reclamation
- U.S. Forest Service
- Indian Reservation
- State Land
- National Park Service
- Private Land
- U.S. Department of Defense

General Reference

- City or Town
- Other Road
- Railroad
- Lake or Reservoir
- Interstate Highway
- State Boundary
- U.S. Highway
- County Boundary
- State Highway

SOURCES:
Continental Divide National Scenic Trail, BLM 2013;
Old Spanish National Historic Trail, BLM 2002;
Overland Trail, NPS 2013; Cherokee Trail, NPS 2013;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
Land Jurisdiction, BLM 2010, 2011; City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008

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: April 1, 2013
DRAFT EIS: February 2014



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.

3.2.17.4 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 was also 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.

3.2.17.4.1 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 within, 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 within 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 within 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 Properties.** Includes properties formally determined as eligible for inclusion; 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 3.2.16, 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 three miles from the trail features described below, which differ between a 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 National Register 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 3.2.16.4 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 which 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 3.2.18.4 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 associated with each NHT. Cultural sites were not identified for the Continental Divide NST through review of existing historic and cultural resource data.

Recreation Resources

As described in Section 3.2.11.4, 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 were also 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. Within 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 within 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 within 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 within and adjacent to high potential sites and segments.

3.2.17.4.2 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 3-251). 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 3-251 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON NATIONAL SCENIC AND HISTORIC TRAILS	
Level of Impacts	Description
High	<ul style="list-style-type: none"> ■ Overall <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ■ Scenic Resources <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ■ Historic and Cultural Resources <ul style="list-style-type: none"> • 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 eligibility of the trail segments and related historic properties affected would be compromised.
	<ul style="list-style-type: none"> ■ Recreation, including Travel Management <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ■ Natural Resources <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ■ Other Landscape Elements <ul style="list-style-type: none"> • 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.

TABLE 3-251 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON NATIONAL SCENIC AND HISTORIC TRAILS	
Level of Impacts	Description
Moderate	<ul style="list-style-type: none"> ▪ Overall <ul style="list-style-type: none"> • The intended experience of the trail is affected but would not be substantially compromised. Mitigation may or may not be necessary.
	<ul style="list-style-type: none"> ▪ Scenic Resources <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ▪ Historic and Cultural Resources <ul style="list-style-type: none"> • 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 eligibility of the trail segments affected may be compromised, but the effect could be minimized.
	<ul style="list-style-type: none"> ▪ Recreation, including Travel Management <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ▪ Natural Resources <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ▪ Other Landscape Elements <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> ▪ Overall <ul style="list-style-type: none"> • The intended experience of the trail would be affected negligibly. Mitigation would probably not be necessary.
	<ul style="list-style-type: none"> ▪ Scenic Resources <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> ▪ Historic and Cultural Resources <ul style="list-style-type: none"> • 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 National Register of Historic Places would likely not be affected. •
	<ul style="list-style-type: none"> ▪ Recreation, including Travel Management <ul style="list-style-type: none"> • 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.

TABLE 3-251 CRITERIA FOR ASSESSING LEVEL OF IMPACTS ON NATIONAL SCENIC AND HISTORIC TRAILS	
Level of Impacts	Description
Low	<ul style="list-style-type: none"> ▪ Natural Resources <ul style="list-style-type: none"> • 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 trail.
	<ul style="list-style-type: none"> ▪ Other Landscape Elements <ul style="list-style-type: none"> • 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, the 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, 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 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). Off-site mitigation may be applied, where feasible and through negotiations with the Applicant, for the life of the development in an effort to offset significant or high impacts of the Project that are not able to be mitigated. As described in Section 2.4, the Project 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 would also 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 (i.e., areas where switchbacks would likely be required for construction and maintenance, refer to Table 2-10). 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.

3.2.17.5 Results

3.2.17.5.1 No Action Alternative

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

3.2.17.5.2 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.

3.2.17.5.3 345-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.

3.2.17.5.4 500-kilovolt Transmission Line Components

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

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

Trail Management

Nature and Purpose. As described in Section 3.2.17.2, 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 within this zone of concern without further Acts of Congress. The 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 Rawlins Field Office has not amended their RMP to collocate 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 utilizes existing paved roads (Wyoming Highway 71), 4x4 roads, and two-tracks within 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 3.2.16.4), 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 collocated 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 both the utility corridor designated by the Rawlins Field Office RMP and the adjacent WWEC corridor which contain the existing transmission line mentioned above.

As inventoried by the 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 Rawlins Field Office, this area was delineated within the foreground/middleground distance zone. The majority of the area adjacent to the Continental Divide NST was determined by the Rawlins Field Office to be VRI Class II with small areas of Class III and Class IV

lands. As currently managed within the Rawlins Field Office RMP, the area potentially crossed by the Project would occur in designated VRM Class IV lands (as defined in Section 3.2.16.4).

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 which 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 Rawlins Field Office. As described in the 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 National Register Properties, 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 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 LaCledé.

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 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 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 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 would cross through the foreground/midground distance zone. As a result of the VRI, the Rawlins Field Office has identified this area as VRI Class III with adjacent VRI Class IV areas. As managed under the amended Rawlins Field Office RMP, the Project would cross 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 which connects Wamsutter Road to Eureka Headquarters Road. It is important note that these roads also provide access to the Adobe Town WSA. Complete ROS data for the Rawlins Field Office has not yet been completed at this time.

Historic and Cultural Resources

Segment 1. No trail traces or trail-related cultural sites have been identified along this portion of the Overland Historic Trail.

Segment 2. The Project would cross a non-contributing trail trace, as identified by the Rawlins Field Office, and 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 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 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 which would be crossed by the Project south of Rawlins adjacent to Wyoming Highway 71 and (2) the 1850 route which is 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 the both Continental Divide NST and Overland Historic Trail as they are all 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 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, which does not share the same characteristic escarpment which 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 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/midground distance zone. Through development of the VRI, the Rawlins Field Office has identified VRI Class II (Powder Rim) and Class III (Flat Top Mountain) areas which would be crossed by the Project as well as adjacent areas of Class IV. As managed under the amended Rawlins Field Office RMP, the Project would cross 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 Rawlins Field Office has not yet been developed at this time.

Historic and Cultural Resources

1849 Segment. No trail traces or trail-related cultural sites have been identified along this portion of the Cherokee Historic Trail.

1850 Segment. The Project would cross a 2.5-mile long contributing trail trace, as identified by the Rawlins Field Office, in the same area where the Project crosses an existing pipeline right-of-way. McPherson Springs, a cultural site with inscriptions that may reflect travel on this alignment of the Cherokee Historic Trail, is located approximately 0.75 mile east of Link W113.

Biological, Natural, and Other Resources

As described in 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 would potentially 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 would cross 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 within 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 within 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 within Coal Mine Draw, and microsite 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 further 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 defined in Table 3-182), as described in the 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 which are 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 impacts directly 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 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 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 would cross riparian shrubland communities, selective mitigation 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, minimizing their visual presence by blending with adjacent landscapes. To reduce impacts on these views, selective mitigation 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 construction 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 this alternative route, 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 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 impacts directly 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 in areas with pinyon-juniper or riparian vegetation, geometric right-of-way vegetation clearing. 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 in proximity to an existing pipeline corridor which has introduced a geometric form from vegetation clearing in the pipeline rights-of-way. Similarly, the Project would produce a geometric vegetative form but would also introduce 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 a moderate impacts on their views where the Project would 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 would cross a contributing trail trace associated with the Cherokee Historic Trail within 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. Due to 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. 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 (including route variations), this section is not pertinent for analysis of the Project.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

The affected environment for the Continental Divide NST is the same as Alternative WYCO-B (including route variations).

Overland Historic Trail

The affected environment for the Overland Historic Trail alignment adjacent to Wyoming Highway 71 is the same as Alternative WYCO-B (including route variations).

Trail Management

Trail components for the Overland Historic Trail are the same those described for Alternative WYCO-B (including route variations).

Scenic and Recreation Resources

Scenery along the second trail segment is similar to 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 which becomes more apparent adjacent to the pipeline corridor.

The 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 was also delineated by the Rawlins Field Office as occurring within the foreground/midground distance zone. The VRI Class, as identified by the 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 would cross 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 which parallels the trail in this area.

Historic and Cultural Resources

The Project would cross a contributing trail trace approximately 2.5 miles long, as identified by the Rawlins Field Office. Three trail-related historic properties are located in proximity to Alternative WYCO-C, (1) Signature Rock, (2) Barrel Springs, and (3) Dug Springs Stage Station Ruins. The first site, Signature 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 has such, would likely have been utilized by users of the Overland Historic Trail. The third site, Dug Springs Stage Station Ruins, 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

Trail components for the Cherokee Historic Trail are the same as those described for Alternative WYCO-B (including route variations).

Scenic and Recreation Resources

1849 Segment. Scenic and recreation resources along this trail route are the same 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 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 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 Rawlins Field Office RMP, the Project would cross 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 utilizing the trail alignment or accessing the trail from the Shell Creek Stock Trail along Link W409. A portion of the 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 which identifies this area as front country (partially modified). The remaining portion of the Rawlins Field Office does not yet have ROS data.

Historic and Cultural Resources

1849 Segment. Historic and cultural resources along this trail route are the same as Alternative WYCO-B.

1850 Segment. The Project would cross the same 2.5-mile long contributing trail trace, adjacent to existing pipelines, as Alternative WYCO-B.

Biological, Natural, and Other Resources

Biological, natural, and other resources are similar to Alternative WYCO-B.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Impacts on the Continental Divide NST are the same as Alternative WYCO-B (including route variations).

Overland Historic Trail

Impacts on the first portion of the Overland Historic Trail would be the same as Alternative WYCO-B.

Trail Management

Impacts on the trail components are the same as Alternative WYCO-B.

Scenic and Recreation Resources

Impacts on scenery are similar to 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 construction 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 so there would be limited direct impacts on the trail. Moderate impacts are also anticipated on the trail setting associated with Signature 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 Ruins 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 which 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 would also occur on Barrel Springs since it is located approximately 3 miles away from the Project.

Cherokee Historic Trail

Impacts on the 1849 Cherokee Historic Trail alignment are the same as Alternative WYCO-B.

Trail Management

Impacts on the trail components are similar to 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.

Similar to Alternative WYCO-B, the Project would result in high impacts for approximately 1 mile where the trail is crossed in proximity to an existing pipeline corridor, which as previously described, includes a geometrically cleared right-of-way. The Project would also 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 would cross the road approximately 2 miles from the trail. Since the Project would not cross the areas inventoried by the Rawlins Field Office as having a front country ROS, low impacts were identified on this resource value.

Historic and Cultural Resources

Impacts on historic and cultural resources, specifically on the 2.5-long contributing trail trace, are similar to Alternative WYCO-B.

Biological, Natural, and Other Resources

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 (including route variations), this section is not pertinent for analysis of the Project.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

The affected environment for the Continental Divide NST is the same as Alternative WYCO-B (including route variations).

Overland Historic Trail

The affected environment for the Overland Historic Trail alignment adjacent to Wyoming Highway 71 is the same as Alternative WYCO-B (including route variations).

Trail Management

Trail components for the Overland Historic Trail are the same those described for Alternative WYCO-B (including route variations).

Scenic and Recreation Resources

Scenery along the second trail segment is similar to 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 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 would cross the foreground/middleground distance zone in proximity to the Overland Historic Trail. The VRI Class in this area, determined by the Rawlins Field Office, includes VRI Class II, Class III, and IV lands with the Project crossing the trail in VRI Class III lands. The 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) which 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 Ruins) and an unnamed road connecting Wyoming Highway 789 to the previously mentioned Eureka Headquarters Road.

Historic and Cultural Resources

The Project would cross a contributing trail trace approximately 5 miles long, as identified by the Rawlins Field Office. The Washakie Stage Station Ruins, 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 this area 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

Trail components for the Cherokee Historic Trail are the same as those described for Alternative WYCO-B (including route variations).

Scenic and Recreation Resources

1849 Segment. Scenic and recreation resources along this trail route are the same 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 within the foreground/midground distance zone. The VRI conducted by the Rawlins Field Office identified this area as VRI Class IV. As designated in the amended 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 this area, are limited to recreationists using the trail or accessing the trail via Wyoming Highway 789. Complete ROS data for the Rawlins Field Office has not yet been completed.

Historic and Cultural Resources

1849 Segment. Historic and cultural resources along this trail route are the same as Alternative WYCO-B.

1850 Segment. The Project would cross a non-contributing trail trace, as identified by the 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

Biological, natural, and other resources are similar to Alternative WYCO-B.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Impacts on the Continental Divide NST are the same as Alternative WYCO-B (including route variations).

Overland Historic Trail

Impacts on the first portion of the Overland Historic Trail would be the same as Alternative WYCO-B.

Trail Components

Impacts on the trail components are the same 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 within an area inventoried as highly sensitive by the 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 are 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 Ruins, would have a moderate impact on views where the Project cross 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 through the application of selective mitigation measures, there would be limited 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 Ruins 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

Impacts on the 1849 Cherokee Historic Trail alignment are the same as Alternative WYCO-B.

Trail Management

Impacts on the trail components are similar to 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 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 this alternative route, 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

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-D (including route variation), this section is not pertinent for analysis of the Project.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Continental Divide National Scenic Trail

The affected environment for the Continental Divide NST is the same as Alternative WYCO-B (including route variations).

Overland Historic Trail

The affected environment for the Overland Historic Trail is the same as Alternative WYCO-B (including route variations).

Cherokee Historic Trail

Trail Management

Trail components for the Cherokee Historic Trail are the same as those described for Alternative WYCO-B (including route variations).

Scenic and Recreation Resources

1849 Segment. Scenic and recreation resources along this trail route are the same 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 would cross the trail, except at the first trail crossing on Link W120 which is located at the edge of an existing oil and gas field.

The 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 within 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 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 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 utilizing the Shell Creek Stock Trail to access the trail alignment. The Rawlins Field Office does not yet have a complete ROS inventory.

Historic and Cultural Resources

1849 Segment. Historic and cultural resources along this trail route are the same as Alternative WYCO-B.

1850 Segment. The Project would cross two non-contributing trail traces, as identified by the Rawlins Field Office, and one contributing trail trace east of Sand Creek on Link W124. McPherson Springs, a cultural 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

Biological, natural, and other resources are similar to Alternative WYCO-B.

Environmental Consequences (Wyoming)

Continental Divide National Historic Trail

Impacts on the Continental Divide NST are the same as Alternative WYCO-B (including route variations).

Overland Historic Trail

Impacts on the Overland Historic Trail are the same as Alternative WYCO-B (including route variations).

Cherokee Historic Trail

Impacts on the 1849 Cherokee Historic Trail alignment are the same as Alternative WYCO-B.

Trail Management

Impacts on the trail components are similar to Alternative WYCO-B.

Scenic and Recreation Resources

Impacts on scenery at the first crossing of the Cherokee Historic Trail would be similar to 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 Rawlins Field Office. These impacts would occur through the introduction of transmission structures, construction access roads, and in areas with pinyon-juniper or riparian vegetation, geometric right-of-way clearing. 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, which 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 would not cross a contributing trail trace on the first and last trail crossings, direct impacts on trail resources were identified as a low impact 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 within 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 non-contributing 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 utilize existing opportunities for additional topographic screening.

Biological, Natural, and Other Resources

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-F (including route variations), 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 3.2.17.2, 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 within the Old Spanish NHT study area includes level to rolling terrain (Class C scenery) which 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 has been 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, within the foreground/midground distance zone. Due to the low sensitivity of this area, the Grand Junction Field

Office inventoried this area as VRI Class IV. As designated in the Grand Junction Field Office RMP, the Project would be located within 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 within 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 in 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. Same as the nature and purpose discussed for the Colorado portion of this alternative route.

Primary Use(s). Same as the primary use discussed for the Colorado portion of this alternative route.

National Trail Right-of-way and Management Corridor. Same as the national trail right-of-way and management corridor discussed for the Colorado portion of this alternative route.

Trail Components. The BLM identified trail traces which 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 3-252 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 Railroad 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 3-252 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, would cross three NHT II traces in Furniture Draw and adjacent to Bitter Seep within 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) which 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 within 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 are 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 would cross Westwater Creek, Cottonwood, Cisco, Nash, Thompson, and Floy washes.

The 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/midground 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 Moab Field Office RMP, the Project would cross 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 which 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 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 which is a nearly level plain located adjacent to the prominent Cedar Mountain landscape. Vegetation within 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 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 within the foreground/middleground distance zone. As a result of the 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 Price Field Office RMP, the Project would cross 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 would cross the San Rafael Swell SRMA and Big Hole ACEC in proximity to the Old Spanish NHT along Links U730, U729, U728, and U732. There would also 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 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, were identified along this alternative route.

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 a 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 within 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 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 in riparian corridors, right-of-way vegetation clearing. 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 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 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 road 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 road 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 further 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 3.2.13 of this EIS for crossing the Big Hole ACEC, a right-of-way exclusion area potentially requiring a plan amendment, 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 and 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 within 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 further away from the Project and in proximity to a NHT II trail trace. Low impacts on the areas of Roaded Natural and Semi-Primitive Motorized ROS within the 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 a 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 III 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 would 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 a 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 which may be directly affected. To reduce impacts on the trail setting and the trail traces themselves, the following mitigation measures would be applied: minimize the construction of new access roads including the construction of 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 within the Project's right-of-way. To reduce impacts on these riparian corridors, selective mitigation 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 would cross 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 would cross the river. Low impacts would also be anticipated on springs in Floy Wash since these springs are located approximately 3 miles from the Project and would not be directly affected 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 (Colorado)

Old Spanish National Historic Trail

The affected environment for the Old Spanish NHT is the same as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Old Spanish National Historic Trail

Impacts on the Old Spanish NHT are the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Old Spanish National Historic Trail

Trail Management

Nature and Purpose. Same as Alternative COUT BAX-B.

Primary Use(s). Same as Alternative COUT BAX-B.

National Trail Right-of-way and Management Corridor. Same as Alternative COUT BAX-B.

Trail Components. Trail components associated with the Book Cliffs Analysis Unit are the same as Alternative COUT BAX-B.

In the San Rafael Swell Analysis Unit, west of Green River, the Project would cross the first portion of the NHT II and III traces described for Alternative COUT BAX-B adjacent to Cottonwood Wash. Specifically, Link U488 would cross a NHT V trace but would be located adjacent to a 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 in this area.

Scenic and Recreation Resources

Book Cliffs Analysis Unit. Scenic and recreation resources associated with the Book Cliffs Analysis Unit are the same 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 Railroad Line. Scenery described for Alternative COUT BAX-B through Buckhorn Flat is similar to the landscapes crossed by this alternative route.

The area adjacent to the congressionally designated alignment for the Old Spanish NHT, along U.S. Highway 6, was inventoried by the 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 Price Field Office to be located in the foreground/midground distance zone. Through development of the 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 would cross 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 this alternative route, prior to entering Buckhorn Flat, would occur on U.S. Highway 6 (designated as the Dinosaur Diamond Scenic Byway) which 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: Roded 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 this alternative route.

Biological, Natural, and Other Resources

Book Cliffs Analysis Unit. Biological, natural, and other resources associated with the Book Cliffs Analysis Unit of the Old Spanish NHT are the same as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. Biological, natural, and other resources associated with the San Rafael Swell Analysis Unit are similar to 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

Impacts on the Book Cliffs Analysis Unit of the Old Spanish NHT are the same as Alternative COUT BAX-B.

Trail Components

Impacts on the trail components are similar to the description 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 which 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, in areas with pinyon-juniper vegetation, minimize right-of-way vegetation clearing 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 are similar to Alternative COUT BAX-B.

Historic and Cultural Resources

Impacts on the setting for the Old Spanish NHT, adjacent to NHT II and III trail traces, in Cottonwood Wash and Furniture Draw are similar to Alternative COUT BAX-B except the trail traces in Cottonwood Wash would not be paralleled for 20 miles, instead the Project would cross a segment of NHT V between two segments of NHT III. It is important to note that this alternative would not directly cross any NHT II or III trail traces.

Biological, Natural, and Other Resources

Impacts are similar to 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 (Colorado)

Old Spanish National Historic Trail

The affected environment for the Old Spanish NHT is the same as Alternative COUT BAX-B.

Environmental Consequences (Colorado)

Old Spanish National Historic Trail

Impacts on the Old Spanish NHT are the same as Alternative COUT BAX-B.

Affected Environment (Utah)

Old Spanish National Historic Trail

Trail Management

Nature and Purpose. Same as Alternative COUT BAX-B.

Primary Use(s). Same as Alternative COUT BAX-B.

National Trail Right-of-way and Management Corridor. Same as Alternative COUT BAX-B.

Trail Components. Trail components associated with the Book Cliffs Analysis Unit are the same as Alternative COUT BAX-B.

In the San Rafael Swell Analysis Unit, west of Green River, the Project would cross the first portion of the NHT II and III traces described for Alternative COUT BAX-B adjacent to Cottonwood Wash. Specifically, Link U488 would cross a NHT V trace but would be located adjacent to a NHT III trace in Saleratus Wash. No trail-associated historic sites were identified by the BLM NHT Inventory in this area.

Scenic and Recreation Resources

Book Cliffs Analysis Unit. Scenic and recreation resources associated with the Book Cliffs Analysis Unit are the same as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. The scenic and recreation resources described for Alternative COUT BAX-C, along U.S. Highway 6 (Link U488), are the same for this alternative route.

Historic and Cultural Resources

No additional historic and cultural resources, beyond the trail traces inventoried by the BLM NHT Inventory Project, were identified along this alternative route.

Biological, Natural, and Other Resources

Book Cliffs Analysis Unit. Biological, natural, and other resources associated with the Book Cliffs Analysis Unit of the Old Spanish NHT are the same as Alternative COUT BAX-B.

San Rafael Swell Analysis Unit. Biological, natural, and other resources associated with the San Rafael Swell Analysis Unit are similar to those described for Alternative COUT BAX-C.

Environmental Consequences (Utah)

Old Spanish National Historic Trail

Impacts on the Book Cliffs Analysis Unit of the Old Spanish NHT are the same as Alternative COUT BAX-B.

Trail Management

Impacts on the trail components are similar to the description for Alternative COUT BAX-B.

Scenic and Recreation Resources

Impacts on scenic and recreation resources are the same as Alternative COUT BAX-C along U.S. Highway 6 (Link U488).

Historic and Cultural Resources

Impacts on the setting for the Old Spanish NHT, adjacent to NHT III trail traces in Cottonwood Wash, are the same as Alternative COUT BAX-C.

Biological, Natural, and Other Resources

Impacts on riparian vegetation are similar to 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 alternative routes in the COUT route group (including route variations), this section is not pertinent for analysis of the Project.

3.2.17.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

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 the siting area, 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 which has modified the existing vegetation patterns. The 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/midground distance zone. Through development of the VRI, the 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 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 the siting area, 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 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 which 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 within the Powder Rim landscape, which was identified by the 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 within 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 the siting area 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 the siting area 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 this siting area, 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 this siting area, 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 this siting area, this section is not pertinent for analysis of the Project.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Environmental Consequences

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 this siting area, 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 this siting area, this section is not pertinent for analysis of the Project.

Alternative WYCO-D and Route Variation (WYCO-D-1)

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 this siting area, this section is not pertinent for analysis of the Project.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment

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

Environmental Consequences

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 this siting area, 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 this siting area, 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 within the siting area 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, within the siting area, 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 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/midground distance zone. Through development of the VRI, the 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 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 within this siting area except for motorists on the Dinosaur Diamond Scenic Byway (U.S. Highway 6) which 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 within the siting area.

Historic and Cultural Resources

No additional historic and cultural resources, beyond the trail traces inventoried by the BLM NHT Inventory, were identified within the siting area.

Biological, Natural, and Other Resources

No unique biological or natural resource issues were identified for the Old Spanish NHT in this area.

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 Price Field Office as a highly sensitive landscape. An existing transmission line has locally influenced scenery in a portion of this area which 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 which 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 this siting area, there would be minimal impacts on these trail resources.

Alternative COUT-A and Route Variation (COUT-A-1)

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 this siting area, this section is not pertinent for analysis of the Project.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

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 this siting area, this section is not pertinent for analysis of the Project.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

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 this siting area, this section is not pertinent for analysis of the Project.

Alternative COUT-H (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 this siting area, this section is not pertinent for analysis of the Project.

Alternative COUT-I

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 this siting area, this section is not pertinent for analysis of the Project.

3.2.18 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 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.

3.2.18.1 Introduction and Regulatory Framework

Federal agencies must consider the effects of their actions on cultural resources under NEPA and under Section 106 of NHPA (16 U.S.C. 470; 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 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 (16 U.S.C. 470i), 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 within 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.⁶

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 Public Lands Policy Coordination Office (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 9-8-404 – 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 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 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.

3.2.18.1.1 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

⁶C.R.S. 18-13-101 (2013). Abuse of a corpse. Available at <http://www.lexisnexis.com/hotopics/colorado?app=00075&view=full&interface=1&docinfo=off&searchtype=get&search=C.R.S.+18-13-101>. Accessed October 23, 2013.

- (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.

3.2.18.1.2 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 Cultural Resources Task Group (CRTG), meets once a month 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 resources 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. As of the date of this Draft EIS, the signatory and concurring parties have not been fully identified.

3.2.18.2 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 archaeological and historic sites, historic trails and other linear sites, NRHP-listed properties, traditional cultural properties (TCP), 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, Buckhorn Flat Railroad, Uintah Railway, D&RGW Railway and Canyon Pintado NHD. 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 NHD, 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.

3.2.18.2.1 Wyoming to Colorado

Alternatives WYCO-B, WYCO-C, WYCO-D, WYCO-F and Associated Route Variations

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; Larson 2000). 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 (Larson 2000). In the Project area, the trail traverses east-west across southern Wyoming through Sweetwater and Carbon counties (Map 3-14).

The Overland Historic Trail was likely blazed along a series of existing trails that criss-crossed the northern Plains and Rocky Mountains, used originally 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; Larson 2000; 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).

The NPS is conducting a feasibility study to evaluate the addition of the Overland Historic Trail to the California NHT (NPS 2012c). The results of the feasibility study are pending; a draft study and

environmental assessment (EA) are scheduled for public review in 2014 (NPS 2012e). 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

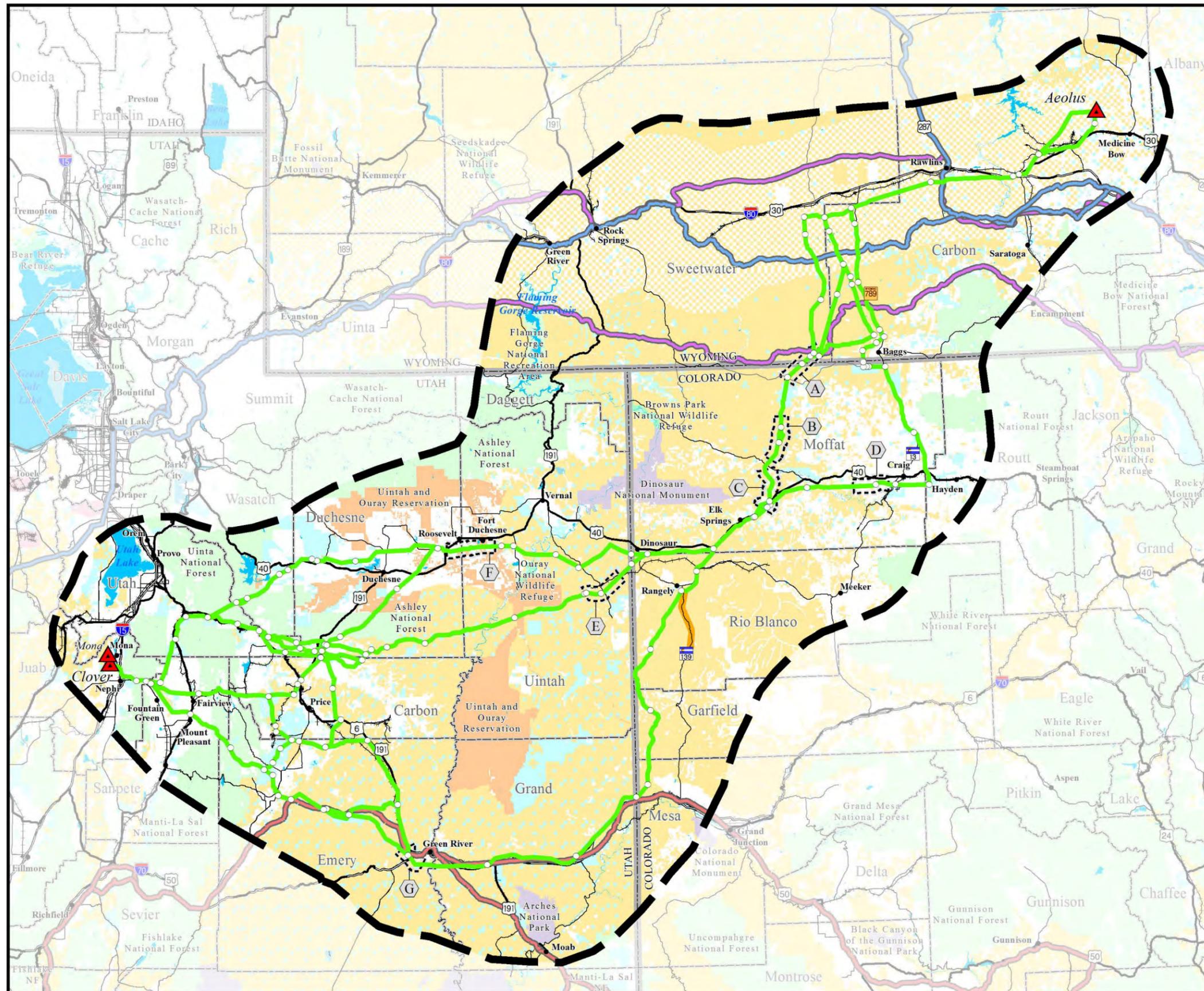
The Cherokee Historic Trail is a 900-mile overland trail that was used primarily between 1849 and the 1890s (Fletcher and Fletcher 2012; Leicht 1984). The trail originated in Tahlequah, Oklahoma, proceeded north-northwest through Kansas and Colorado, and then west across southern Wyoming, where it connected with other westward trails at Fort Bridger (Fletcher and Fletcher 2012; Leicht 1984; NPS 2012d). In the Project area, the trail traverses east-west across southern Wyoming through Sweetwater and Carbon counties (Map 3-14). 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 2012c). The results of the feasibility study are pending; a draft study and EA are scheduled for public review in 2014 (NPS 2012e).

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.



Map 3-14
**National Historic Trails
and National Historic District**

**ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT**

National Historic Trails¹ 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
- 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

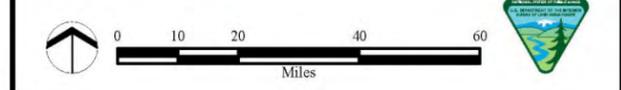
General Reference

- City or Town
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Old Spanish National Historic Trail, BLM 2002;
Overland Trail, NPS 2013; Cherokee Trail, NPS 2013;
Canyon Pintado National Historic District, Colorado SHPO 2012;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
Land Jurisdiction, BLM 2010, 2011; City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008

NOTES:
¹Including 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: April 1, 2013
DRAFT EIS: February 2014



Alternative WYCO-D and Route Variation WYCO-D-1

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; all providing 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).

3.2.18.2.2 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 3-14).

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.

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 (Athearn 1975). The road was used to transport gilsonite, freight and passengers between Dragon and Rangely (Athearn 1975). 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” (Athearn 1975). 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 is also known as Dragon Road, Old Dragon-Rangely Road, Dragon-Rangely Tool Road, and Dragon Trail.

Canyon Pintado National Historic District

Canyon Pintado NHD 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 “Canon Pintado”, (which means “Painted Canyon”) in his journal (BLM 2012n; Costales and Knight 1973a).

The Canyon Pintado NHD is located just south of Rangely, Colorado and extends north-south in the vicinity of Colorado State Highway 139 (Map 3-14). It encompasses an area of approximately 16,000 acres (BLM 2012n).

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, and numerous cuts and fills, 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 Book 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). Within 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, COUT-C, and Associated Route Variations

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 with 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. 2013).

Alternatives COUT-B, COUT-C, COUT-H, and COUT-I and Associated Route Variations

Argyle Canyon Rock Art (Archaeological Sites)

Within 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 within the canyon, as well as prehistoric lithic/artifact scatters, habitations, and ceremonial sites.

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 Railway (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. Within 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).

3.2.18.3 Cultural Context

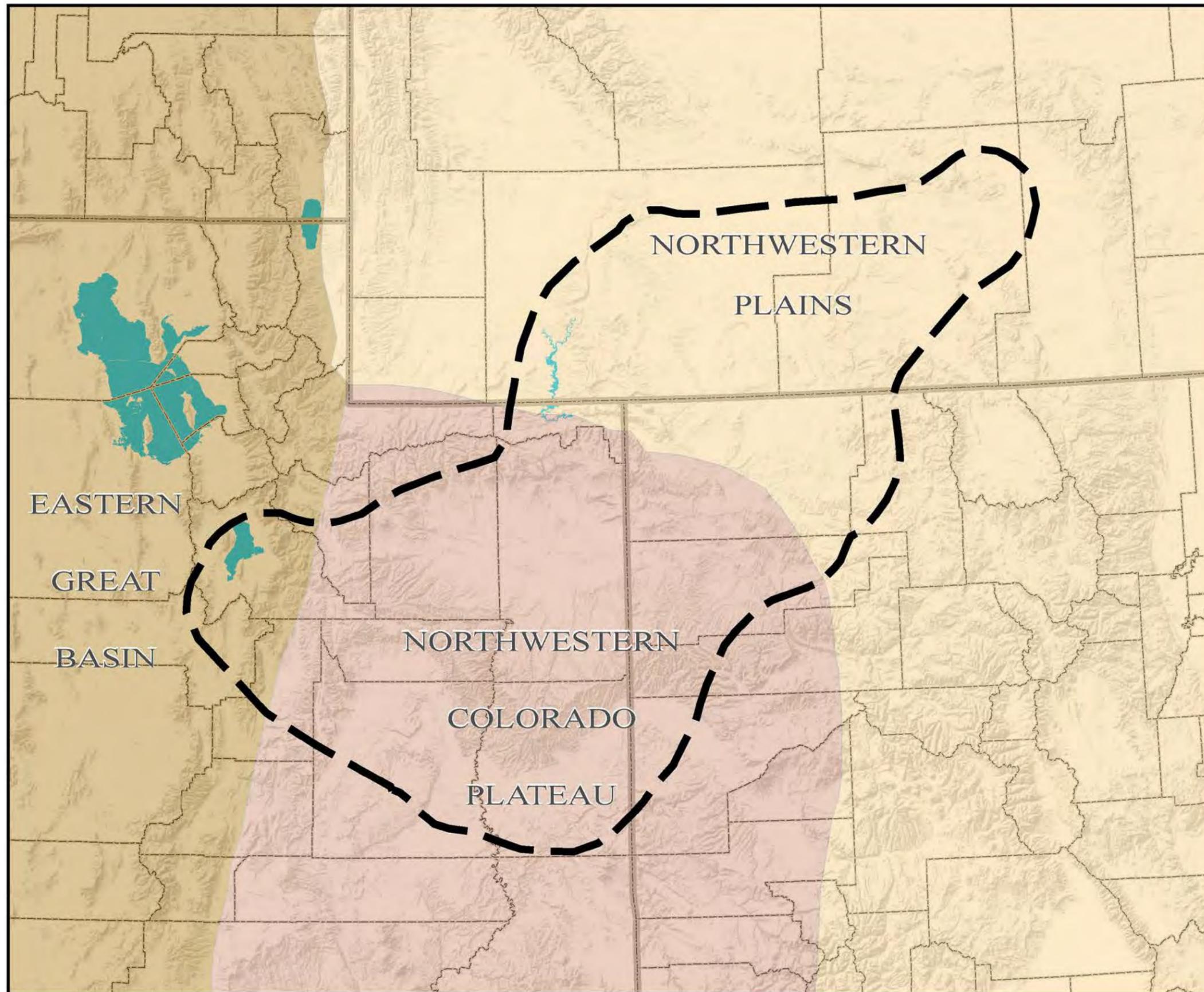
3.2.18.3.1 Prehistoric Overview

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 3-15), 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 within three major cultural areas (i.e., the Eastern Great Basin to the west, the Northern Colorado Plateau to the east, and the Northwestern Plains to the northeast), except for a small portion at the extreme eastern-central end that encroaches into the high-elevation ecosystems of the Southern Rocky Mountains (Map 3-15). 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.



Map 3-15
Prehistoric Culture Areas

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Prehistoric Culture Areas¹

- 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 2010a;
State and County Boundaries, ESRI 2008

NOTES:
¹These 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: April 1, 2013
DRAFT EIS: February 2014

Eastern Great Basin and Northern Colorado Plateau

The prehistory of the Eastern Great Basin and Northern Colorado Plateau areas is commonly divided into several periods, with general convergence on separation dates, 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 3-253 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), I.T. Kelly (1964), R.L. Kelly (1997), Kelly and Fowler (1986), 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, 1999), 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 3-253 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, Jimmy 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.

TABLE 3-253 EASTERN GREAT BASIN AND NORTHERN COLORADO PLATEAU PREHISTORIC CULTURAL PHASES	
Categories	Description
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 Pablado 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	<p>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, 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.</p> <p>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 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).</p>
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, Northern 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)

**TABLE 3-253
 EASTERN GREAT BASIN AND NORTHERN COLORADO PLATEAU
 PREHISTORIC CULTURAL PHASES**

Categories	Description
Formative (ca. 2,000 to 700 B.P.)	
Generalized Lifeways	<p>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.</p> <p>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 the 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.</p> <p>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 and non-horticultural groups in the mountains and higher elevations. Horticultural groups in this region are divided into the Fremont (Early Fremont, Scoggin, Winger, and Texas Creek Overlook) and Gateway Traditions; increased social complexity and trade, universal use of kivas and 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, gray ware ceramics, and stone structures are characteristic of this tradition</p>
Diagnostic Artifacts	<p>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 gray ware ceramics (Uinta Gray Ware, Sevier Gray Ware, Snake Valley Gray Ware, 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</p> <p>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 densities) in the archaeological record (primarily in the vicinities of the Green and Yampa rivers)</p>
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 life-ways 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 2007; 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)

TABLE 3-253 EASTERN GREAT BASIN AND NORTHERN COLORADO PLATEAU PREHISTORIC CULTURAL PHASES	
Categories	Description
Late Prehistoric – Protohistoric and Historic Ute (ca. 800 to 175 B.P.)	
Generalized Lifeways	<p>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)</p> <p>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</p> <p>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</p> <p>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</p>
Diagnostic Artifacts	Small triangular projectile points (e.g., Desert Side-notched and Cottonwood Triangular projectile points), Shoshonean 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	(BLM 2010e; Creasman and Scott 1987; Jennings 1978; Kelly and Fowler 1986; Reed 1994; Reed and Metcalf 1999; Spangler 2001, 2002; Yentsch et al. 2006)
<p>NOTES:</p> <p>¹Despite marked differences between Paleoindian and early Archaic adaptations, the transition between these two lifeways is poorly defined in some areas</p> <p>B.P. = Before present day</p>	

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.).** 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 myriad 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, which subsequently replaced traditional hunting strategies; primarily associated with historic Shoshone (Eastern Shoshone) groups

The prehistoric cultural chronology of south-central Wyoming is based on adaptive strategies, technological developments, and distributions of carbon 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 3-254 includes a brief summary of the archaeological evidence of the prehistoric groups that inhabited the region in the Project corridor, as well as a summary of the temporal frameworks found in the Project study 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 3-254 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; 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; coil basketry cord production, and manos and metates.
Local Manifestations	Lithic and artifact scatters, complex campsites, and isolated architectural structures (pithouses, storage pits, stone circles), rock shelters, storage pits, and thermal features.
References	(Frison 1991; Hoefer et al. 2005; Metcalf 1987)

TABLE 3-254 NORTHWESTERN GREAT PLAINS PREHISTORIC CULTURAL PHASES	
Categories	Description
Late Prehistoric – Uinta and Firehole (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 gray ware 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 (Shoshonean). 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; Hoefler et al. 2005)
Protohistoric – Historic Shoshone (ca. 1,700 to 1,800 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 700s A.D.). 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; Hoefler 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	

3.2.18.3.2 History

General Historical Overview

As evidenced by the diversity of archaeological and historic 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 within 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; 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), Hoefler 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 2013).
- **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 1867)

- **1843 to 1868.** 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 (Becher 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, which originated at Bent's Old Fort on the Santa Fe Trail in southern Colorado, runs northwestward along the Plains and the Front Range of the Rocky Mountains to join the California Trail (Hastings Cutoff) near its split from the Oregon Trail at Fort Bridger, Wyoming (Whiteley 1999). 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 study 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 2007:16).
- **1863 to 1868.** Exploration and subsequent settlement of the western United States 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). Farther west, Laramie, Rawlins, Rock Springs, Medicine Bow, Carbon, Hanna, and Evanston grew into permanent towns along the railroad corridor. 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. Unlike Utah and Colorado, Wyoming never experienced a rapid population boom in the nineteenth century from any major mineral discoveries.
- **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 2004). By the late 1860s, coal was a major economic resource in 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 2012).
- **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 further 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 is also 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 2012). 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 dry-land 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 2012). 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 within 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 United States (Wyoming Mining Association 2012). 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 (Hoefler 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 Branch 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 Green 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 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 within 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 were also 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 was also 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 was also 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 within 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 within 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 (CDOT 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 (Hoefler 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), Embry (1996), Firmage (1996), Geary (1996), Holzapfel (1999), Johnson et al. (1998), Newell and Talbot (1998); Poll et al. (1978), Eldredge and Gowans (1994), 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 [LDS church]) 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 United States 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 (1853-1854), 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 1989:166). 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: the Utah and Pleasant Valley line to shorten the line, and the Wasatch & Jordan Valley and Bingham Canyon and Camp Floyd lines 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 (Bennet 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 the 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 2012).
- **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 within 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).

3.2.18.4 Study Methodology

The methods for the cultural resource Class I inventory used for the EIS are set forth in the Programmatic Agreement (Appendix I).

3.2.18.4.1 Inventory

Baseline cultural resource data were collected within 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 file search data, cultural-visual resources, NRHP-listed properties, NHL, NHTs, TCPs, and ACECs.

Class I File Search

A Class I file search inventory 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 file search 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 within 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 within 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 are also 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 7,600 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 area 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 Project area. Understanding site distribution patterns allows for the preparation of a simple map that visually represents the presence of sites throughout the Project area. 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 resource sites 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 within 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 the cultural resources. 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

In addition, the BLM could include other historic properties 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.

Within 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.

It should be noted that 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 3.2.16). The visual resource inventory and impact assessment were focused within a 6-mile-wide visual resource study corridor centered on the reference centerline for each alternative route under consideration within 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 2012f). 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/natreg/home.do?searchtype=natreg/home>.

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 Project area 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 Project area, but that are 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 within 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 2012g). 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/designations/listsofnhls.htm>. The database was reviewed to identify NHLs located within the 4-mile-wide study area.

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 2012h). 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 within 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 2012c). 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 within 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 were also cross-referenced against the Class I data to identify matching records. These data sources were combined to create a complete list of formally documented Old Spanish NHT segments within 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 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 367 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 area 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" (BLM 2001b).

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 3.2.13.

3.2.18.4.2 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 resource sites 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 prehistoric and historic archaeological sites 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 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 sites 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 Project study area, 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 Effects (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 and auditory intrusions. Also includes NHTs or potential NHTs, NHLs or TCPs located within 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 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 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 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 to 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 3-255 summarizes the initial cultural resource intensity levels that provided the basis for assessing initial impacts on cultural resources.

TABLE 3-255 SUMMARY OF ESTIMATED CULTURAL RESOURCE IMPACTS				
Alternative Route	Total Miles	Low Impacts ¹ (miles)	Moderate Impacts ¹ (miles)	High Impacts ¹ (miles)
Alternative WYCO-B and Route Variations				
WYCO-B (Applicant Preferred Alternative)	204.5	141.1	6.6	56.8
WYCO-B-1	204.9	141.5	6.6	56.8
WYCO-B-2 (Agency Preferred Alternative)	204.5	140.9	6.8	56.8
WYCO-B-3	204.5	140.8	6.6	57.1
Alternative WYCO-C and Route Variations				
WYCO-C	210.4	141.1	6.6	62.7
WYCO-C-1	210.8	141.5	6.6	62.7
WYCO-C-2	210.4	140.9	6.8	62.7
WYCO-C-3	210.4	140.8	6.6	63.0

TABLE 3-255 SUMMARY OF ESTIMATED CULTURAL RESOURCE IMPACTS				
Alternative Route	Total Miles	Low Impacts¹ (miles)	Moderate Impacts¹ (miles)	High Impacts¹ (miles)
Alternative WYCO-D and Route Variation				
WYCO-D	250.0	192.5	13.4	44.1
WYCO-D-1	250.0	192.2	13.4	44.4
Alternative WYCO-F and Route Variations				
WYCO-F	218.9	141.1	6.6	71.2
WYCO-F-1	219.3	141.5	6.6	71.2
WYCO-F-2	218.9	140.9	6.8	71.2
WYCO-F-3	218.9	140.8	6.6	71.5
COUT BAX Alternative Routes				
COUT BAX-B	279.2	153.4	12.8	113.0
COUT BAX-C	289.7	175.4	14.5	99.8
COUT BAX-E	291.5	189.9	15.1	86.5
Alternative COUT-A and Route Variation				
COUT-A	206.0	197.9	5.5	2.6
COUT-A-1	205.6	197.6	5.4	2.6
Alternative COUT-B and Route Variations				
COUT-B	216.0	205.3	5.9	4.8
COUT-B-1	212.7	203.5	5.1	4.1
COUT-B-2	214.2	205.0	5.1	4.1
COUT-B-3	213.9	204.5	5.3	4.1
COUT-B-4	214.2	205.0	5.1	4.1
COUT-B-5	213.9	204.5	5.3	4.1
Alternative COUT-C and Route Variations				
COUT-C	209.8	195.6	6.8	7.4
COUT-C-1	206.4	193.6	6.0	6.8
COUT-C-2	207.9	195.1	6.0	6.8
COUT-C-3 (Agency Preferred Alternative)	207.6	194.6	6.2	6.8
COUT-C-4	207.9	195.2	6.0	6.7
COUT-C-5	207.6	194.7	6.2	6.7
Alternatives COUT-H and COUT-I				
COUT-H (Applicant Preferred Alternative)	200.6	181.3	9.1	10.2
COUT-I	240.2	217.8	10.4	12.0
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

3.2.18.5 Results

3.2.18.5.1 No Action Alternative

Under this alternative, the environment would remain as it presently exists. No impacts on cultural resources would occur if the proposed Project were not implemented.

3.2.18.5.2 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.

3.2.18.5.3 Cultural Resources Inventory Summary

Class I Sites

The Class I inventory resulted in the identification of 7,667 cultural resource sites within the 4-mile-wide study area. These sites include 5,452 prehistoric sites, 1,787 historic sites, 425 multi-component (prehistoric and historic components) sites, and 3 ethnographic sites. These sites, broken down by state, consist of 3,035 prehistoric sites, 259 historic sites, and 188 multi-component sites in Wyoming; 952 prehistoric sites, 327 historic sites, and 89 multi-component sites in Colorado; and 1,465 prehistoric sites, 1,787 historic sites, 425 multi-component sites, and 3 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. Cultural resources, identified as ethnographic, include a pitch procurement area, a collapsed sweathouse (ceremonial), and an 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 indicated no particular religious or cultural significance to the locality. Of particular importance is to mentioned, that the use of the category “ethnographic” to define these three cultural resources, 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 3-256 provides a summary of baseline cultural resource data for each alternative route and the series compensation stations. 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. 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 Project area. In addition to the 7,667 cultural resource sites identified in the Class I file search, the literature review identified 34 historic properties currently listed in the NRHP, including 23 historic buildings, 6 historic districts, 1 single resource district, 3 archaeological sites, and 1 historic structure, as defined under 36 CFR 60.3(p). Of the 34 NRHP-listed properties, 30 are located in Utah, 2 are located in Wyoming, and 2 are located in Colorado. Table 3-257 provides a summary of the NRHP-listed properties by state.

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; one of the sixteen remaining Carnegie libraries of the twenty-three 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 1881-1882, 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.

The Wyoming portion of the proposed Project includes a historic building (Hanna Community Hall [48 CR 3764]) 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 NHD [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.

TABLE 3-256 SUMMARY OF CULTURAL RESOURCES INVENTORY DATA														
Alternative Route	Class I Sites										Number of National Register of Historic Places- Listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Cultural- Visual Sites ²	Number of Areas of Critical Environmental Concern with Cultural Components
	Number of National Register Eligible Sites			Number of Not Eligible Sites			Number of Unevaluated Sites			Number of Class I Sites ¹				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Wyoming														
Alternative WYCO-B and Route Variations														
WYCO-B (Applicant Preferred Alternative)	415	24	41	791	103	39	431	17	18	1,879	0	2 ³	7	0
WYCO-B-1	415	24	41	791	103	39	431	17	18	1,879	0	2 ³	7	0
WYCO-B-2 (Agency Preferred Alternative)	415	24	41	791	103	39	431	17	18	1,879	0	2 ³	7	0
WYCO-B-3	415	24	41	791	103	39	431	17	18	1,879	0	2 ³	7	0
Alternative WYCO-C and Route Variations														
WYCO-C	234	23	29	708	116	35	369	24	18	1,557	1	2 ³	8	0
WYCO-C-1	234	23	29	708	116	35	369	24	18	1,557	1	2 ³	8	0
WYCO-C-2	234	23	29	708	116	35	369	24	18	1,557	1	2 ³	8	0
WYCO-C-3	234	23	29	708	116	35	369	24	18	1,557	1	2 ³	8	0
Alternative WYCO-D and Route Variation														
WYCO-D	217	36	28	507	120	33	339	30	22	1,333	1	2 ³	17	0
WYCO-D-1	217	36	28	507	120	33	339	30	22	1,333	1	2 ³	17	0

TABLE 3-256 SUMMARY OF CULTURAL RESOURCES INVENTORY DATA														
Alternative Route	Class I Sites										Number of National Register of Historic Places- Listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Cultural- Visual Sites ²	Number of Areas of Critical Environmental Concern with Cultural Components
	Number of National Register Eligible Sites			Number of Not Eligible Sites			Number of Unevaluated Sites			Number of Class I Sites ¹				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Alternative WYCO-F and Route Variations														
WYCO-F	451	25	48	878	113	40	483	19	24	2,081	0	2 ³	8	0
WYCO-F-1	451	25	48	878	113	40	483	19	24	2,081	0	2 ³	8	0
WYCO-F-2	451	25	48	878	113	40	483	19	24	2,081	0	2 ³	8	0
WYCO-F-3	451	25	48	878	113	40	483	19	24	2,081	0	2 ³	8	0
Colorado														
Alternative WYCO-B and Route Variations														
WYCO-B (Applicant Preferred Alternative)	29	2	5	80	10	5	54	2	4	191	0	0	2	0
WYCO-B-1	29	2	5	80	10	5	56	2	4	193	0	0	2	0
WYCO-B-2 (Agency Preferred Alternative)	31	2	5	83	10	5	55	2	4	197	0	0	2	0
WYCO-B-3	29	2	5	82	10	5	54	2	4	193	0	0	2	0
Alternative WYCO-C and Route Variations														
WYCO-C	29	2	5	80	10	5	54	2	4	191	0	0	2	0
WYCO-C-1	29	2	5	80	10	5	56	2	4	193	0	0	2	0
WYCO-C-2	31	2	5	83	10	5	55	2	4	197	0	0	2	0
WYCO-C-3	29	2	5	82	10	5	54	2	4	193	0	0	2	0

TABLE 3-256 SUMMARY OF CULTURAL RESOURCES INVENTORY DATA														
Alternative Route	Class I Sites										Number of National Register of Historic Places- Listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Cultural- Visual Sites ²	Number of Areas of Critical Environmental Concern with Cultural Components
	Number of National Register Eligible Sites			Number of Not Eligible Sites			Number of Unevaluated Sites			Number of Class I Sites ¹				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Alternative WYCO-D and Route Variation														
WYCO-D	67	6	7	102	40	5	75	7	4	313	0	0	7	0
WYCO-D-1	67	6	7	104	40	5	75	7	4	315	0	0	7	0
Alternative WYCO-F and Route Variations														
WYCO-F	31	2	5	81	10	5	54	2	4	194	0	0	2	0
WYCO-F-1	31	2	5	81	10	5	56	2	4	196	0	0	2	0
WYCO-F-2	33	2	5	84	10	5	55	2	4	200	0	0	2	0
WYCO-F-3	31	2	5	83	10	5	54	2	4	196	0	0	2	0
COUT BAX Alternative Routes														
COUT BAX-B	72	41	17	263	217	24	151	13	17	817	2	0	47 ⁴	0
COUT BAX-C	72	41	17	263	217	24	151	13	17	817	2	0	47 ⁴	0
COUT BAX-E	72	41	17	263	217	24	151	13	17	817	2	0	47 ⁴	0
Alternative COUT-A and Route Variation														
COUT-A	13	2	2	57	12	3	20	4	2	115	0	0	5	0
COUT-A-1	13	2	2	57	12	3	20	4	2	115	0	0	5	0
Alternative COUT-B and Route Variations														
COUT-B	13	2	2	57	12	3	20	4	2	115	0	0	5	0
COUT-B-1	13	2	2	57	12	3	20	4	2	115	0	0	5	0
COUT-B-2	13	2	2	57	12	3	20	4	2	115	0	0	5	0
COUT-B-3	13	2	2	57	12	3	20	4	2	115	0	0	5	0
COUT-B-4	13	2	2	57	12	3	20	4	2	115	0	0	5	0
COUT-B-5	13	2	2	57	12	3	20	4	2	115	0	0	5	0

TABLE 3-256 SUMMARY OF CULTURAL RESOURCES INVENTORY DATA														
Alternative Route	Class I Sites										Number of National Register of Historic Places- Listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Cultural- Visual Sites ²	Number of Areas of Critical Environmental Concern with Cultural Components
	Number of National Register Eligible Sites			Number of Not Eligible Sites			Number of Unevaluated Sites			Number of Class I Sites ¹				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Alternative COUT-C and Route Variations														
COUT-C	14	2	2	57	12	3	26	5	2	123	0	0	5	0
COUT-C-1	14	2	2	57	12	3	26	5	2	123	0	0	5	0
COUT-C-2	14	2	2	57	12	3	26	5	2	123	0	0	5	0
COUT-C-3 (Agency Preferred Alternative)	14	2	2	57	12	3	26	5	2	123	0	0	5	0
COUT-C-4	14	2	2	57	12	3	26	5	2	123	0	0	5	0
COUT-C-5	14	2	2	57	12	3	26	5	2	123	0	0	5	0
Alternatives COUT-H and COUT-I														
COUT-H (Applicant Preferred Alternative)	14	2	2	57	12	3	26	5	2	123	0	0	5	0
COUT-I	14	2	2	57	12	3	26	5	2	123	0	0	5	0
Utah														
COUT BAX Alternative Routes														
COUT BAX-B	164	109	20	131	158	20	39	11	1	655	26	1	95	4
COUT BAX-C	169	119	18	114	173	21	40	9	0	665	26	1	103	1
COUT BAX-E	186	157	32	153	283	35	29	8	0	884	6	1	82	1

TABLE 3-256 SUMMARY OF CULTURAL RESOURCES INVENTORY DATA														
Alternative Route	Class I Sites										Number of National Register of Historic Places- Listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Cultural- Visual Sites ²	Number of Areas of Critical Environmental Concern with Cultural Components
	Number of National Register Eligible Sites			Number of Not Eligible Sites			Number of Unevaluated Sites			Number of Class I Sites ¹				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Alternative COUT-A and Route Variation														
COUT-A	70	57	6	99	98	18	15	5	3	372	6	0	37	0
COUT-A-1	70	57	6	99	98	18	15	5	3	372	6	0	37	0
Alternative COUT-B and Route Variations														
COUT-B	91	91	12	97	106	19	18	4	2	441	6	0	53	0
COUT-B-1	85	75	9	88	97	19	17	3	2	396	6	0	47	0
COUT-B-2	85	75	9	88	96	19	18	3	2	396	6	0	47	0
COUT-B-3	87	80	10	89	98	19	18	3	2	407	6	0	49	0
COUT-B-4	85	75	9	88	96	19	18	3	2	396	6	0	47	0
COUT-B-5	87	80	10	89	98	19	18	3	2	407	6	0	49	0
Alternative COUT-C and Route Variations														
COUT-C	344	95	24	261	302	21	22	4	0	1,074	6	0	63	1
COUT-C-1	335	75	21	252	295	21	21	3	0	1,024	6	0	55	1
COUT-C-2	335	75	21	252	294	21	22	3	0	1,024	6	0	55	1
COUT-C-3 (Agency Preferred Alternative)	337	80	22	253	296	21	22	3	0	1,035	6	0	57	1
COUT-C-4	335	75	21	252	291	21	22	3	0	1,021	6	0	55	1
COUT-C-5	337	80	22	253	293	21	22	3	0	1,032	6	0	57	1

TABLE 3-256 SUMMARY OF CULTURAL RESOURCES INVENTORY DATA														
Alternative Route	Class I Sites										Number of National Register of Historic Places- Listed Properties	Number of National Historic Trails/ Potential National Historic Trails	Number of Cultural- Visual Sites ²	Number of Areas of Critical Environmental Concern with Cultural Components
	Number of National Register Eligible Sites			Number of Not Eligible Sites			Number of Unevaluated Sites			Number of Class I Sites ¹				
	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component	Prehistoric	Historic/ Ethnographic	Multi-component					
Alternative COUT-H and COUT-I														
COUT-H (Applicant Preferred Alternative)	362	117	26	275	381	25	24	12	0	1,223	10	0	85	1
COUT-I	446	109	28	299	428	18	26	8	0	1,363	24	0	97	1
NOTES: ¹ The number of Class I Sites for Alternatives WYCO-C and WYCO-D and their route variations in Wyoming; the COUT BAX alternative routes in Colorado and Utah; and Alternatives COUT-C and its route variations, 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 Project area 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 Project area														

TABLE 3-257 NATIONAL REGISTER OF HISTORIC PLACES LISTED PROPERTIES						
Property Name	National Register Number	Smithsonian Number	Property Theme	Property Type	Dates	National Register of Historic Places Eligibility Criteria
Wyoming						
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 NHD (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)
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)

TABLE 3-257 NATIONAL REGISTER OF HISTORIC PLACES LISTED PROPERTIES						
Property Name	National Register Number	Smithsonian Number	Property Theme	Property Type	Dates	National Register of Historic Places Eligibility Criteria
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 15 areas with special management and/or designation that recognize nationally and locally significant resources and values, including six ACECs in Colorado and nine ACECs in Utah; to date, no ACECs have been identified in the Wyoming portion of the Project area. In Colorado, designated areas include Badger Wash ACEC and Rabbit Valley Paleo 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 within 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 15 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 within 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; all of them representing early historic settlement, cultural land use, and settlement patterns. Smith Cabin, is located in the Project area, 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 Project area. 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 within 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 2009).

The only historic linear feature designated as an NHT to traverse the Project area 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 Project area. Approximately one-half of the overall trail system is located in southern Utah and west-central and southwestern Colorado. In the Project area, 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 Project area 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 Project area.

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 Project area in Emery and Grand counties, Utah (Horn et al. 2011). These include 26 visible segments (42GR4716 [Segs. 20-45]), 3 unlabeled visible segments, and 10 extrapolated segments (42GR4716 [UT-SR Segs. I, J, N-P, K, R-U]) of the Northern Route of the trail within the Book Cliffs area; and 47 visible segments (42EM4359 [Segs. 1-43; 49-52]), 6 extrapolated segments (42EM4359 [UT-SR Segments A-H; K-N]), and 1 potential route of the Northern Branch within 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 seven 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 Project area 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 Project area 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 244 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, or C and meeting the integrity criteria discussed in Section 3.2.18.4. The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the Project area. 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).

3.2.18.5.4 345-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. Ninety-

one percent (n=21) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. A segment of the Union Pacific Railroad/Utah Southern Railroad is situated in this zone. There are no sites located in the area classified as the moderate cultural resource intensity zone (outside, but adjacent to, the boundary of the Project APE). Approximately nine percent (n=2) are located in the Project APE, including 1 prehistoric campsite and 1 segment of 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 these 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.

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. The potential for the Project to cause adverse effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO, 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.

3.2.18.5.5 500-kilovolt Transmission Line Components

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

The baseline resource inventory and initial impacts for alternative routes considered in the Wyoming to Colorado – Aeolus to U.S. Highway 40 are presented in Table 3-258 and are described by state in this section.

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Affected Environment (Wyoming)

Class I Sites

A total of 1,879 sites were identified in the Class I inventory conducted for Alternative WYCO-B in Wyoming, including 1,637 prehistoric sites, 144 historic sites, and 98 multi-component sites (Table 3-258). Eighty-nine percent (n=1,681) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Seven percent (n=124) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Four percent (n=74) of the sites are located in the Project APE, including 27 prehistoric lithic and artifact scatters, 23 prehistoric campsites, 2 prehistoric lithic landscapes, 2 prehistoric habitations (pithouse and stone circle), 1 prehistoric thermal feature (concentration of fire-cracked rock), 5 prehistoric campsites and historic artifact scatters, 1 prehistoric lithic scatter and historic habitation (stone wall), 1 historic artifact scatter, and 12 historic linear sites. The Cherokee Historic Trail, the Overland Historic Trail, the Rawlins to Baggs Stage Road, and the Lincoln Highway are located in the high cultural resource intensity zone along this alternative route.

TABLE 3-258 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	Class I Cultural-Visual Sites ¹	National Register of Historic Places Listed Property	Potential National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
Alternative WYCO-B and Route Variations									
WYCO-B (Applicant Preferred Alternative)	204.5	2,070	9	0	2	0	141.1	6.6	56.8
Wyoming	138.1	1,879	7	0	2	0	78.2	5.6	54.3
Colorado	66.4	191	2	0	0	0	62.9	1.0	2.5
WYCO-B-1	204.9	2,072	9	0	2	0	141.5	6.6	56.8
Wyoming	138.1	1,879	7	0	2	0	78.2	5.6	54.3
Colorado	66.8	193	2	0	0	0	63.3	1.0	2.5
WYCO-B-2 (Agency Preferred Alternative)	204.5	2,076	9	0	2	0	140.9	6.8	56.8
Wyoming	138.1	1,879	7	0	2	0	78.2	5.6	54.3
Colorado	66.4	197	2	0	0	0	62.7	1.2	2.5
WYCO-B-3	204.5	2,072	9	0	2	0	140.8	6.6	57.1
Wyoming	138.1	1,879	7	0	2	0	78.2	5.6	54.3
Colorado	66.4	193	2	0	0	0	62.6	1.0	2.8
Alternative WYCO-C and Route Variations									
WYCO-C	210.4	1,748	10	1	2	0	141.1	6.6	62.7
Wyoming	144	1,557	8	1	2	0	78.2	5.6	60.2
Colorado	66.4	191	2	0	0	0	62.9	1.0	2.5
WYCO-C-1	210.8	1,750	10	1	2	0	141.5	6.6	62.7
Wyoming	144	1,557	8	1	2	0	78.2	5.6	60.2
Colorado	66.8	193	2	0	0	0	63.3	1.0	2.5
WYCO-C-2	210.4	1,754	10	1	2	0	140.9	6.8	62.7
Wyoming	144	1,557	8	1	2	0	78.2	5.6	60.2
Colorado	66.4	197	2	0	0	0	62.7	1.2	2.5
WYCO-C-3	210.4	1,750	10	1	2	0	140.8	6.6	63.0
Wyoming	144	1,557	8	1	2	0	78.2	5.6	60.2
Colorado	66.4	193	2	0	0	0	62.6	1.0	2.8
Alternative WYCO-D and Route Variation									
WYCO-D	250.0	1,646	24	1	2	0	192.5	13.4	44.1
Wyoming	135.0	1,333	17	1	2	0	84.7	9	41.3
Colorado	115.0	313	7	0	0	0	107.8	4.4	2.8
WYCO-D-1	250.0	1,648	24	1	2	0	192.2	13.4	44.4
Wyoming	135.0	1,333	17	1	2	0	84.7	9	41.3
Colorado	115.0	315	7	0	0	0	107.5	4.4	3.1

TABLE 3-258 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	Class I Cultural-Visual Sites ¹	National Register of Historic Places Listed Property	Potential National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
Alternative WYCO-F and Route Variations									
WYCO-F	218.9	2,275	10	0	2	0	141.1	6.6	71.2
Wyoming	152.5	2,081	8	0	2	0	78.2	5.6	68.7
Colorado	66.4	194	2	0	0	0	62.9	1.0	2.5
WYCO-F-1	219.3	2,277	10	0	2	0	141.5	6.6	71.2
Wyoming	152.5	2,081	8	0	2	0	78.2	5.6	68.7
Colorado	66.8	196	2	0	0	0	62.7	1.0	2.5
WYCO-F-2	218.9	2,281	10	0	2	0	140.9	6.8	71.2
Wyoming	152.5	2,081	8	0	2	0	78.2	5.6	68.7
Colorado	66.4	200	2	0	0	0	62.7	1.2	2.5
WYCO-F-3	218.9	2,277	10	0	2	0	140.8	6.6	71.5
Wyoming	152.5	2,081	8	0	2	0	78.2	5.6	68.7
Colorado	66.4	196	2	0	0	0	62.6	1.0	2.8

NOTE: ¹The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the Project area

Class I sites potentially affected by Route Variations WYCO-B-1 through WYCO-B-3 in Wyoming are the same as those identified for Alternative WYCO-B, as the routes follow the same path through the state (Table 3-258).

Cultural-Visual Resources

A total of 7 historic properties associated with Alternative WYCO-B in Wyoming are identified as visually sensitive. These include 1 bridge, 1 power line (Cheyenne to Miracle Mile Transmission Line), 1 shearing station, and 4 historic road/trail corridors. The historic roads/trails are the Cherokee Historic Trail (10 segments), the Rawlins to Baggs Stage Road (6 segments), the Overland Historic Trail (3 segments), and the Lincoln Highway (1 segment).

Visually sensitive cultural resources associated with Route Variations WYCO-B-1 through WYCO-B-3 in Wyoming are the same as those 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 Wyoming segment of Alternative WYCO-B or route variations.

National Historic Trails/Potential National Historic Trails

Traces of the Cherokee and Overland historic trails have been documented along Alternative WYCO-B in Wyoming. One segment of the Cherokee Historic Trail is located in a high cultural resource intensity zone, and crosses the alternative route (Link W113) 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 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 2012e). 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.

Potential NHTs located along Route Variations WYCO-B-1 through WYCO-B-3 in Wyoming are the same as those identified for Alternative WYCO-B.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Wyoming segment of Alternative WYCO-B or route variations.

Environmental Consequences (Wyoming)

Alternative WYCO-B

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-B has the third highest miles of high cultural resource intensity. In Wyoming, there are 54.3 miles of high, 5.6 miles of moderate, and 78.2 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming. As a reminder, 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 54.3 miles of high cultural resource intensity in Wyoming are the result of 74 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources identified along Alternative WYCO-B in Wyoming are the Cherokee Historic Trail, the Overland Historic Trail, the Rawlins to Baggs Stage Road, and the Lincoln Highway. These resources are located in the high cultural resource intensity zone, in the Project APE.

In addition to the baseline inventory data, Fort Fred Steele Historic Site is also a key resource in proximity to the alternative that was identified by the public during scoping. The historical site is located on the west bank of the North Platte River in Carbon County, Wyoming, and approximately 2.6 miles north of proposed Link W30 outside of the Project area.

If this alternative route were 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. The potential for the Project to cause adverse effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO, 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 WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Impacts under Route Variations WYCO-B-1 through WYCO-B-3 in Wyoming would be the same as Alternative WYCO-B, as the routes follow the same path through the state (Table 3-258). Key resources identified along these route variations in Wyoming are the same as those identified for Alternative WYCO-B. If one of the WYCO-B route variations were selected, the same procedures outlined in Alternative WYCO-B in Wyoming would be employed.

Affected Environment (Colorado)

Class I Sites

A total of 191 sites were identified in the Class I inventory conducted for Alternative WYCO-B in Colorado, including 163 prehistoric sites, 14 historic sites, and 14 multi-component sites (Table 3-258). Approximately ninety percent (n=173) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Five percent (n=9) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=9) are located in the Project APE, including 3 prehistoric lithic and artifact scatters, 3 prehistoric campsites, 1 prehistoric pithouse, 1 prehistoric lithic procurement area, and 1 prehistoric campsite and historic brush shelter. 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 located outside of the Project APE.

Class I sites potentially affected by Route Variation WYCO-B-1 in Colorado are similar to those identified for Alternative WYCO-B. A total of 193 sites could potentially be affected if Route Variation WYCO-B-1 were selected, compared to 191 sites for Alternative WYCO-B. The differences in the number and types of sites occur along Link C72. Class I sites identified along this route variation, but not along the alternative route, include 2 prehistoric lithic scatters; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has the same number of sites included in the high cultural resource intensity zone as Alternative WYCO-B.

Class I sites potentially affected by Route Variation WYCO-B-2 in Colorado are similar to those identified for Alternative WYCO-B. A total of 197 sites could potentially be affected if Route Variation WYCO-B-2 were selected, compared to 191 sites for Alternative WYCO-B. The differences in the number and types of sites occur along Link C93. Class I sites identified along this route variation, but not along the alternative route, include 3 prehistoric lithic scatters, 2 prehistoric campsites, and 1 prehistoric lithic procurement area. All of these sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has the same number of sites included in the high cultural resource intensity zone as Alternative WYCO-B. Although no segments have been formally documented as intersecting this route variation, the old Victory Highway crosses the route at Link C93. The historic road travels alongside the route variation for approximately 6 miles.

Class I sites potentially affected by Route Variation WYCO-B-3 in Colorado are similar to those identified for Alternative WYCO-B. A total of 193 sites could potentially be affected if Route Variation WYCO-B-3 were selected, compared to 191 sites for Alternative WYCO-B. The differences in the number and types of sites occur along Link C172. Class I sites identified along this route variation, but not along Alternative WYCO-B, include 2 prehistoric lithic scatters; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has a higher number of sites included in the high cultural resource intensity zone when compared to Alternative WYCO-B.

Cultural-Visual Resources

A total of 2 historic properties associated with Alternative WYCO-B in Colorado are identified as visually sensitive. These sites include Brown’s Park Road and the old Victory Highway.

Visually sensitive cultural resources associated with Route Variations WYCO-B-1 through WYCO-B-3 in Colorado are the same as those 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-B or route variations.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Colorado segment of Alternative WYCO-B or route variations.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-B or route variations.

Environmental Consequences (Colorado)

Alternative WYCO-B

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-B has the third highest miles of high cultural resource intensity. In Colorado, there are 2.5 miles of high, 1.0 mile of moderate, and 62.9 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming and not in Colorado. As a reminder, 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 nine known sites located in the Project APE along the alternative route. Potential impacts on these 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.

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. Although known segments of this key resource are located outside of the Project APE, the historic road could be subject to indirect effects.

If this alternative route were 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. The potential for the Project to cause adverse effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO, 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 WYCO-B Route Variations (WYCO-B-1, WYCO-B-2, and WYCO-B-3)

Impacts under Route Variations WYCO-B-1 through WYCO-B-3 in Colorado would be similar to Alternative WYCO-B, except for slight variations in the levels of cultural resource intensity (Table 3-258). Of these, Route Variation WYCO-B-3 in Colorado has slightly higher miles of high cultural resource intensity than Alternative WYCO-B or the other two associated route variations. A total of 2.8 miles of high cultural resource intensity are anticipated along Route Variation WYCO-B-3 in Colorado. The key resources identified along the Alternative WYCO-B route variations in Colorado are the same as those identified for the alternative route. Without mitigation, the type of potential impacts would be the same as those found for Alternative WYCO-B in Colorado.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Affected Environment (Wyoming)

Class I Sites

A total of 1,557 sites were identified in the Class I inventory conducted for Alternative WYCO-C in Wyoming, including 1,311 prehistoric sites, 164 historic sites, and 82 multi-component sites (Table 3-258). Eighty-seven percent (n=1,357) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Red Rock Site [48SW771]) is situated in this zone. Eight percent (n=130) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=70) are located in the Project APE, including 26 prehistoric lithic and artifact scatters, 17 prehistoric campsites, 2 prehistoric lithic procurement areas, 2 prehistoric lithic landscapes, 1 prehistoric pithouse, 1 prehistoric thermal feature (concentration of fire-cracked rock), 3 historic artifact scatters, 1 historic campsite, 3 prehistoric campsites and historic artifact scatters, 1 prehistoric campsite and historic cairn, 1 prehistoric lithic scatter and historic foundation, and 1 prehistoric artifact scatter and historic artifact scatter. The remaining cultural resource sites include 11 historic linear sites (i.e., power line, pipeline, railroad, telephone line, and road/trail segments). The Cherokee Historic Trail, the Overland Historic Trail, the Lincoln Highway, and the Rawlins to Baggs Stage Road are located in the high cultural resource intensity zone along this alternative route.

Class I sites potentially affected by Route Variations WYCO-C-1 through WYCO-C-3 in Wyoming are the same as those identified for Alternative WYCO-C, as the routes follow the same path through the state (Table 3-258).

Cultural-Visual Resources

A total of 8 historic properties associated with Alternative WYCO-C in Wyoming are identified as visually sensitive. These sites include 1 NRHP-listed property (Red Rock Site [48SW771]), 1 bridge, 1 shearing station, 1 power line (Cheyenne to Miracle Mile Transmission Line), and 4 historic road/trail

corridors. The historic roads/trails are the Cherokee Historic Trail (5 segments), the Overland Historic Trail (6 segments), the Rawlins to Baggs Stage Road (6 segments), and the Lincoln Highway (1 segment).

Visually sensitive cultural resources associated with Route Variations WYCO-C-1 through WYCO-C-3 in Wyoming are the same as those identified for Alternative WYCO-C.

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) along Alternative WYCO-C in Wyoming. This cultural resource site 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. This historic property is located in the low cultural resource intensity zone, beyond the Project APE.

The historic property listed in the NRHP, and located along Route Variations WYCO-C-1 through WYCO-C-3 in Wyoming, is the same as those identified for Alternative WYCO-C.

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 2012e). 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.

Potential NHTs located along Route Variations WYCO-C-1 through WYCO-C-3 in Wyoming are the same as those identified for Alternative WYCO-C.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Wyoming segment of Alternative WYCO-C or alternative WYCO-C route variations.

Environmental Consequences (Wyoming)

Alternative WYCO-C

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-C has the second highest number of miles of high cultural resource intensity. In Wyoming, there are 60.2 miles of high, 5.6 miles of moderate, and 78.2 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming. As a reminder, 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 60.2 miles of high cultural resource intensity in Wyoming are the result of 70 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources identified along Alternative WYCO-C in Wyoming include the NRHP-listed Red Rock Site (48SW771), the Cherokee Historic Trail, the Overland Historic Trail, the Rawlins to Baggs Stage Road, and the Lincoln Highway. Except for the NRHP-listed historic property, all of the aforementioned resources are located in the Project APE. Although the NRHP-listed Red Rock Site (48SW771) is located outside of the Project APE, this resource could be subject to indirect effects. In addition to the baseline inventory data, Fort Fred Steele Historic Site is also a key resource identified in proximity to the alternative route. This cultural resource is located on the west bank of the North Platte River in Carbon County, Wyoming, approximately 2.6 miles north of proposed Link W30 outside of the Project area.

If this alternative route were selected, the same procedures outlined in Alternative WYCO-B in Wyoming would be employed.

Alternative WYCO-C Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Impacts under Route Variations WYCO-C-1 through WYCO-C-3 in Wyoming would be the same as Alternative WYCO-C, as the routes follow the same path through the state (Table 3-258). Key resources identified along these route variations in Wyoming are the same as those identified for Alternative WYCO-C. If one of the Alternative WYCO-C route variations were selected, the same procedures outlined in 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 the same as those identified for Alternative WYCO-B, as both alternative routes follow the same path through the state (Table 3-258).

Class I sites potentially affected by Route Variation WYCO-C-1 in Colorado are the same as those identified for Route Variation WYCO-B-1, as both routes follow the same path through the state (Table 3-258).

Class I sites potentially affected by Route Variation WYCO-C-2 in Colorado are the same as those identified for Route Variation WYCO-B-2, as both routes follow the same path through the state (Table 3-258).

Class I sites potentially affected by Route Variation WYCO-C-3 in Colorado are the same as those identified for Route Variation WYCO-B-3, as both routes follow the same path through the state (Table 3-258).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative WYCO-C and all alternative WYCO-C route variations 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 or route variations.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative WYCO-C or route variations.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-C or route variations.

Environmental Consequences (Colorado)

Alternative WYCO-C

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-C has the second 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 3-258). The key resources identified along Alternative WYCO-C in Colorado are the same as those identified for Alternative WYCO-B.

If this alternative route were selected, the same procedures outlined in Alternative WYCO-B in Colorado would be employed.

Alternative WYCO-C Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Impacts under Route Variations WYCO-C-1 through WYCO-C-3 in Colorado would be the same as Route Variations WYCO-B-1 through WYCO-B-3, as the routes follow the same path through the state (Table 3-258). The key resources identified along these route variations 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 for Alternative WYCO-B in Colorado.

Alternative WYCO-D and Route Variation (WYCO-D-1)

Affected Environment (Wyoming)

Class I Sites

A total of 1,333 sites were identified in the Class I inventory conducted for Alternative WYCO-D in Wyoming, including 1,063 prehistoric sites, 187 historic sites, and 83 multi-component sites (Table 3-258). Eighty-seven percent (n=1,158) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. A segment of the Overland Historic Trail and the NRHP-listed Hanna Community Hall (48CR3764) historic property are situated in this zone. Eight percent (n=107) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=68) are located in the Project APE, including 26 prehistoric campsites, 7 prehistoric lithic and artifact scatters, 4 prehistoric isolated features (hearths and fire-cracked rock), 2 prehistoric habitation structures (stone circle and wickiup), 1 prehistoric lithic procurement area, 1 prehistoric lithic landscape, 2 mine complexes, 1 historic artifact scatter, 5 prehistoric campsites and historic artifact scatters, 1 prehistoric campsite and mining claim, and 1 prehistoric lithic scatter and historic stone foundation. The remaining sites include 17 segments of 11 historic linear sites (i.e., power line, pipeline, railroad,

telephone line, and road/trail segments). The Cherokee Historic Trail, the Overland Historic Trail, the Rawlins to Baggs Stage Road, and the Lincoln Highway are located in the high cultural resource intensity zone along this alternative route.

Class I sites potentially affected by Route Variation WYCO-D-1 in Wyoming are the same as those identified for Alternative WYCO-D, as the routes follow the same path through the state (Table 3-258).

Cultural-Visual Resources

A total of 17 historic properties associated with Alternative WYCO-D in Wyoming are identified as visually sensitive. These sites include the NRHP-listed Hanna Community Hall, 2 canals (West Side Canal and Baggs Ditch), 2 bridges, 2 mine complexes, 1 mine camp, 1 tender station, Hanna Town site, 1 shearing station, 1 power line (Cheyenne to Miracle Mile Transmission Line), and multiple segments of 5 historic road/trail corridors. The historic roads/trails are the Rawlins to Baggs Stage Road (12 segments), the Cherokee Historic Trail (5 segments), the Overland Historic Trail (2 segments), and the Lincoln Highway (2 segments). One of the segments of the Overland Historic Trail has been documented as a historic feature located within the boundaries of a Late Prehistoric campsite.

Visually sensitive cultural resources associated with Route Variation WYCO-D-1 in Wyoming are the same as those identified for Alternative WYCO-D.

Historic Properties Listed in the National Register of Historic Places

The NRHP records search identified one historic property, the Hanna Community Hall, along Alternative WYCO-D. 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. The site was listed in the NRHP on November 26, 1983. A Smithsonian trinomial site number (48CR3764) has been assigned to this historic property. The Hanna Community Hall is located in the low cultural resource intensity zone, beyond the Project APE.

The historic property listed in the NRHP, and located along Route Variation WYCO-D-1 in Wyoming, is the same as those identified for Alternative WYCO-D.

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 non-contributing 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 2012e). 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.

Potential NHTs located along Route Variation WYCO-D-1 in Wyoming are the same as those identified for 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 or Route Variation WYCO-D-1.

Environmental Consequences (Wyoming)

Alternative WYCO-D

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 41.3 miles of high, 9.0 miles of moderate, and 84.7 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming. As a reminder, 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 41.3 miles of high cultural resource intensity in Wyoming are the result of 68 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources along Alternative WYCO-D in Wyoming include the NRHP-listed Hanna Community Hall (48CR3764), the Cherokee Historic Trail, the Overland Historic Trail, the Lincoln Highway, and the Rawlins to Baggs Stage Road. One cultural resource (the NRHP-listed historic property) is located outside of, but adjacent to, the boundary of the Project APE. The remaining key resources, however, are located in the Project APE. Although the NRHP-listed Hanna Community Hall (48CR3764) is located outside of the Project APE, this historic property could be subject to indirect effects.

In addition to the baseline inventory data, Fort Fred Steele Historic Site and the ghost town of Carbon, Wyoming are also key resources identified near the alternative route. Fort Fred Steele Historic Site is located on the west bank of the North Platte River in Carbon County, Wyoming, approximately 2.6 miles north of proposed Link W30 outside of the Project area. The historic town of Carbon, nonetheless, is located approximately 10 miles east-southeast of Hanna in Carbon County, Wyoming, south of proposed Link W22, outside of the Project area.

If this alternative route were selected, the same procedures outlined in Alternative WYCO-B in Wyoming would be employed.

Alternative WYCO-D Route Variation (WYCO-D-1)

Impacts under Route Variation WYCO-D-1 in Wyoming would be the same as Alternative WYCO-D, as the routes follow the same path through the state (Table 3-258). Key resources identified along this route variation in Wyoming are the same as those identified for Alternative WYCO-D. If this route variation were selected, the same procedures outlined in Alternative WYCO-B in Wyoming would be employed.

Affected Environment (Colorado)

Class I Sites

A total of 313 sites were identified in the Class I inventory conducted for Alternative WYCO-D in Colorado, including 244 prehistoric sites, 53 historic sites, and 16 multi-component sites (Table 3-258). Eighty-seven percent (n=274) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Eight percent (n=24) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=15) are located in the Project APE, including 7 prehistoric campsites, 2 prehistoric lithic and artifact scatters, 1 prehistoric lithic procurement area, 1 prehistoric thermal feature, 1 historic dugout and log structure, and 3 historic linear sites (i.e., canal and road segments). 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 located outside of the Project APE.

Class I sites potentially affected by Route Variation WYCO-D-1 in Colorado are similar to those identified for Alternative WYCO-D. A total of 315 sites could potentially be affected if Route Variation WYCO-D-1 were selected, compared to 313 sites for Alternative WYCO-D. The differences in the number and types of sites occur along Link C172. Class I sites identified along this route variation, but not along Alternative WYCO-D, include 2 prehistoric lithic scatters; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has a higher number of sites included in the high cultural resource intensity zone when compared to Alternative WYCO-D.

Cultural-Visual Resources

A total of 7 historic properties associated with Alternative WYCO-D in Colorado are identified as visually sensitive. These sites include 1 school/community hall building (presently used as a barn), 1 homestead, the Juniper Hot Spring Resort, the old Victory Highway (1 segment), Colorado State Highway 13 (1 segment), Thornburg Road (1 segment), and Thornburgh Wagon Trail (1 segment).

Visually sensitive cultural resources associated with Route Variation WYCO-D-1 in Colorado are the same as those identified for Alternative WYCO-D.

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 or Route Variation WYCO-D-1.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative WYCO-D or Route Variation WYCO-D-1.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-D or Route Variation WYCO-D-1.

Environmental Consequences (Colorado)

Alternative WYCO-D

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 2.8 miles of high, 4.4 miles of moderate, and 107.8 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming and not in Colorado. As a reminder, 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 2.8 miles of high cultural resource intensity in Colorado are the result of 15 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

The key resources identified along Alternative WYCO-D in Colorado are the same as those identified for Alternative WYCO-B.

If this alternative route were selected, the same procedures outlined in Alternative WYCO-B in Colorado would be employed.

Alternative WYCO-D Route Variation (WYCO-D-1)

Impacts under Route Variation WYCO-D-1 in Colorado would be similar to Alternative WYCO-D, except for slight variations in the levels of cultural resource intensity (Table 3-258). Route Variation WYCO-D-1 in Colorado has slightly higher miles of high cultural resource intensity than the alternative route. A total of 3.1 miles of high cultural resource intensity are anticipated along this route variation in Colorado. The key resources identified along this route variation in Colorado are the same as those identified for Alternative WYCO-D. Without mitigation, the type of potential impacts would be the same as those found for Alternative WYCO-D in Colorado.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Affected Environment (Wyoming)

Class I Sites

A total of 2,081 sites were identified in the Class I inventory conducted for Alternative WYCO-F in Wyoming, including 1,812 prehistoric sites, 157 historic sites, and 112 multi-component sites (Table 3-258). Eighty-eight percent (n=1,843) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Seven percent (n=144) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=94) are located in the Project APE, including 35 prehistoric campsites, 29 prehistoric lithic and artifact scatters, 2 prehistoric lithic landscapes, 2 prehistoric habitations (pithouse and unknown structural), 1 prehistoric lithic procurement area, 1 prehistoric thermal feature (concentration of fire-cracked rock), 3 historic artifact scatters, 4 prehistoric campsites and historic artifact scatters, 1 prehistoric campsite and tent foundation/domestic trash, 1 prehistoric lithic scatter and historic foundation, and 1 prehistoric campsite and historic cairn. The remaining sites include 14 segments of 11 historic linear sites (i.e., power line, pipeline, railroad grade, telephone line, and road/trail segments). The Cherokee Historic Trail, the Overland Historic Trail, the Rawlins to Baggs Stage Road, and the Lincoln Highway are located in the high cultural resource intensity zone along this alternative route.

Class I sites potentially affected by Route Variations WYCO-F-1 through WYCO-F-3 in Wyoming are the same as those identified for Alternative WYCO-F, as the routes follow the same path through the state (Table 3-258).

Cultural-Visual Resources

A total of 8 historic properties associated with Alternative WYCO-F in Wyoming are identified as visually sensitive. These include 2 bridges, 1 shearing station, 1 power line (Cheyenne to Miracle Mile Transmission Line), and 4 road/trail corridors. The historic roads/trails are the Cherokee Historic Trail (10 segments), the Rawlins to Baggs Stage Road (6 segments), the Overland Historic Trail (3 segments), and the Lincoln Highway (1 segment).

Visually sensitive cultural resources associated with Route Variations WYCO-F-1 through WYCO-F-3 in Wyoming are the same as those identified for Alternative WYCO-F.

Historic Properties Listed in the National Register of Historic Places

There are no historic properties listed in the NRHP along the Wyoming segment of Alternative WYCO-F or route variations.

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 W124 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 non-contributing 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 2011:66 [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 non-contributing 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 non-contributing (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 2012e). 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.

Potential NHTs located along Route Variations WYCO-F-1 through WYCO-F-3 in Wyoming are the same as those identified for Alternative WYCO-F.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Wyoming segment of Alternative WYCO-F or route variations.

Environmental Consequences (Wyoming)

Alternative WYCO-F

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-F has the highest miles of high cultural resource intensity. In Wyoming, there are 68.7 miles of high, 5.6 miles of moderate, and 78.2 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming. As a reminder, 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 68.7 miles of high cultural resource intensity in Wyoming are the result of 94 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources along Alternative WYCO-F in Wyoming include the Cherokee Historic Trail, the Overland Historic Trail, the Lincoln Highway, and the Rawlins to Baggs Stage Road. These key resources are located in the Project APE.

In addition to the baseline inventory data, Fort Fred Steele Historic Site is also a key resource identified in proximity to the alternative route. This cultural resource is located on the west bank of the North Platte River in Carbon County, approximately 2.6 miles north of proposed Link W30 outside of the Project area.

If this alternative route were selected, the same procedures outlined in Alternative WYCO-B in Wyoming would be employed.

Alternative WYCO-F Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Impacts under Route Variations WYCO-F-1 through WYCO-F-3 in Wyoming would be the same as Alternative WYCO-F, as the routes follow the same path through the state (Table 3-258). Key resources identified along these route variations in Wyoming are the same as those identified for Alternative WYCO-F. If one of the route variations were selected, the same procedures outlined in Alternative WYCO-B in Wyoming would be employed.

Affected Environment (Colorado)

Class I Sites

A total of 194 sites were identified in the Class I inventory conducted for Alternative WYCO-F in Colorado, including 166 prehistoric sites, 14 historic sites, and 14 multi-component sites (Table 3-258). Ninety percent (n=176) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Five percent (n=9) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=9) are located in the Project APE, including 3 prehistoric lithic and artifact scatter, 3 prehistoric campsites, 1 prehistoric pithouse, 1 prehistoric lithic procurement area, and 1 prehistoric campsite and historic brush shelter. An unrecorded segment of the old Victory Highway crosses Alternative WYCO-F at Link C92. Known segments of the road are located outside of the Project APE.

Although Alternative WYCO-F follows the same route as Alternative WYCO-B in Colorado, there is a slightly greater number of cultural resource sites identified along Alternative WYCO-F, when compared with the other alternative route. Based on the 2-mile buffer (east of the reference centerline) of the Wyoming segment of Alternative WYCO-F, which encroaches into Colorado, 3 additional Class I sites (prehistoric campsites) were incorporated into the Colorado segment of Alternative WYCO-F. The differences in the number of sites occur approximately 1.8 miles south of Link W302 (Wyoming segment of WYCO-F), and along the Colorado State line (extreme northern Moffat County). These 3 sites are located in the area classified as the low cultural resource intensity zone.

Class I sites potentially affected by Route Variation WYCO-F-1 in Colorado are similar to those identified for Alternative WYCO-F. A total of 196 sites could potentially be affected if Route Variation WYCO-F-1 were selected, compared to 194 sites for Alternative WYCO-F. The differences in the number and types of sites occur along Link C72. Class I sites identified along this route variation, but not along the alternative route, include 2 prehistoric lithic scatters; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has the same number of sites included in the high cultural resource intensity zone as Alternative WYCO-F.

Class I sites potentially affected by Route Variation WYCO-F-2 in Colorado are similar to those identified for Alternative WYCO-F. A total of 200 sites could potentially be affected if Route Variation WYCO-F-2 were selected, compared to 194 sites for Alternative WYCO-F. The differences in the number and types of sites occur along Link C93. Class I sites identified along this route variation, but not along the alternative route, include 3 prehistoric lithic scatters, 2 prehistoric campsites, and 1 prehistoric lithic procurement area. All of these sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has the same number of sites included in the high cultural resource intensity zone as Alternative WYCO-F. Although no segments have been formally documented as intersecting this route variation, the old Victory Highway crosses the route at Link C93. The historic road travels alongside the route variation for approximately 6 miles.

Class I sites potentially affected by Route Variation WYCO-F-3 in Colorado are similar to those identified for Alternative WYCO-F. A total of 196 sites could potentially be affected if Route Variation WYCO-F-3 were selected, compared to 194 sites for Alternative WYCO-F. The differences in the number and types of sites occur along Link C172. Class I sites identified along this route variation, but not along Alternative WYCO-F, include 2 prehistoric lithic scatters; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Colorado has a higher number of sites included in the high cultural resource intensity zone when compared to Alternative WYCO-F.

Of particular importance is to mention that Route Variations WYCO-F-1 through WYCO-F-3 in Colorado and Route Variations WYCO-B-1 through WYCO-B-3 follow the same paths through the state. Nonetheless, and as previously noted, slight variations occur in the number of sites identified along the Alternative WYCO-F route variations, when compared with the Alternative WYCO-B route variations. Based on the 2-mile buffer (east of the reference centerline) of the Wyoming segment of Alternative WYCO-F (Link W302), which encroaches into Colorado, additional Class I sites were incorporated into the Colorado segment of Alternative WYCO-F and associated route variations.

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative WYCO-F and route variations 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 or route variations.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative WYCO-F or route variations.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative WYCO-F or route variations.

Environmental Consequences (Colorado)

Alternative WYCO-F

Overall, of the alternative routes considered for the WYCO segment, Alternative WYCO-F has the highest miles of high cultural resource intensity. In Colorado, there are 2.5 miles of high, 1.0 mile of moderate, and 62.9 miles of low cultural resource intensity (Table 3-258). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Wyoming and not in Colorado. As a reminder, 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 nine known sites located in the Project APE along the alternative route. Potential impacts on these 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.

The key resources identified along Alternative WYCO-F in Colorado are the same as those identified for Alternative WYCO-B.

If this alternative route were selected, the same procedures outlined in Alternative WYCO-B in Colorado would be employed.

Alternative WYCO-F Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Impacts under Route Variations WYCO-F-1 through WYCO-F-3 in Colorado would be similar to Alternative WYCO-F, except for minor variations in the levels of cultural resource intensity (Table 3-258). Of these, Route Variation WYCO-F-3 in Colorado has slightly higher miles of high cultural resource intensity than Alternative WYCO-F or the other two associated route variations. A total of 2.8 miles of high cultural resource intensity are anticipated along Route Variation WYCO-F-3 in Colorado. The key resources identified along the Alternative WYCO-F route variations in Colorado are the same as those identified for Alternative WYCO-F. Without mitigation, the type of potential impacts would be the same as those found for Alternative WYCO-F in Colorado.

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

The baseline resource inventory and initial impacts for alternative routes considered in the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover are presented in Table 3-259 and described by state in this section.

TABLE 3-259 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	279.2	1,472	140	28	1	4	153.4	12.8	113.0
Colorado	86.7	817	47 ¹	2	0	0	57.2	10.2	19.3
Utah	192.5	655	95	26	1	4	96.2	2.6	93.7
COUT BAX-C	289.7	1,472	148	28	1	1	175.4	14.5	99.8
Colorado	86.7	817	47 ¹	2	0	0	57.2	10.2	19.3
Utah	203	655	103	26	1	1	118.2	4.3	80.5
COUT BAX-E	291.5	1,701	127	8	1	1	189.9	15.1	86.5
Colorado	86.7	817	47 ¹	2	0	0	57.2	10.2	19.3
Utah	204.8	884	82	6	1	1	132.7	4.9	67.2

NOTE: ¹The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the Project area; includes the Old Spanish National Historic Trail, which is located in the vicinity of the Project area

Alternative COUT BAX-B

Affected Environment (Colorado)

Class I Sites

A total of 817 sites were identified in the Class I inventory conducted for Alternative COUT BAX-B in Colorado, including 488 prehistoric sites, 271 historic sites, and 58 multi-component sites (Table 3-259). Eighty-four percent (n=685) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Two NRHP-listed properties, Canyon Pintado NHD (5RB984) and Carrot Men Pictograph Site (5RB106), are situated in this zone. Nine percent (n=74) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Seven percent (n=58) are located in the Project APE, including 8 prehistoric lithic and artifact scatters, 7 prehistoric rock art sites (e.g., Fremont and Ute elements), 2 prehistoric rock shelters, 2 prehistoric campsites, 1 prehistoric hunting blind, 7 historic artifact scatters, 7 historic campsites, 3 homesteads, the Carbonera Town site, 1 fence segment, 1 livestock enclosure, 2 prehistoric campsites and historic artifact scatters, 1 prehistoric lithic scatter and historic artifact scatter, and 1 prehistoric habitation (unknown structural). The remaining sites include 14 segments of 8 historic linear sites (i.e., road/trail, railroad, and telephone line segments). One of the historic linear sites (D&RGW Railway) was found in association with a historic railroad station (Excelsior Station) and a dense scatter of trash and structural debris. The D&RGW Railway, the Uintah Railway, and the historic Dragon to Rangely Stage/Freight Road are located in the high cultural resource intensity zone along this alternative route. Segments of the Uintah Railway and the Dragon to

Rangely Stage/Freight Road are also found in the low and moderate cultural resource intensity zones outside of, but adjacent to, the Project APE.

An unrecorded segment of U.S. Highway 6 runs alongside Alternative COUT BAX-B (approximately 490 feet east of Link U560). It should be noted that there are no records of previously recorded segments of the road on file at the Colorado SHPO, therefore, U.S. Highway 6 is not included in the Class I counts for the Colorado portion of this alternative route. On the contrary, the historic U.S. Highway 6 have been extensively documented in Utah.

Cultural-Visual Resources

A total of 47 historic properties associated with Alternative COUT BAX-B in Colorado are identified as visually sensitive. Prehistoric sites include 2 NRHP-listed properties (Carrot Men Pictograph Site [5RB106] and Canyon Pintado NHD [5RB984]), 9 rock art sites (e.g., Fremont and unknown styles), 4 rock shelters with rock art (e.g., Fremont and unknown styles), 1 campsite with possible Fremont rock art, and 2 Fremont storage structures. Historic sites include 6 rock art sites (e.g., historic Ute, Hispanic, and European-American elements), 2 reservoirs, 2 habitations (homestead and tent platform), 1 livestock enclosure, 1 bridge, 2 railroads, and 5 historic road/trail corridors. Historic linear features include, but are not limited to, the Uintah Railway, the D&RGW Railway/Railroad Station (Excelsior Station), the Dragon to Rangely Stage/Freight Road, the Dragon-Douglas Trail, and the Douglas Creek Wagon Road. The remaining sites include 7 prehistoric rock art sites and 1 rock shelter/rock art site with historic elements. Historic components are represented by historic artifact scatters, short-term campsites, a livestock enclosure, and inscriptions. In addition, an unrecorded segment of U.S. Highway 6 is a visually sensitive cultural resource identified along this alternative route in Colorado.

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 historic properties along Alternative COUT BAX-B in Colorado. These include Canyon Pintado NHD (5RB984) and Carrot Men Pictograph Site (5RB106). Both NRHP-listed properties are located south of Rangely in Rio Blanco County, Colorado. The Canyon Pintado NHD (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). Both resources are located 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 (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, 10.2 miles of moderate, and 57.2 miles of low cultural resource intensity (Table 3-259). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah and not in Colorado. As a reminder, 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 58 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources identified along Alternative COUT BAX-B in Colorado include Carrot Men Pictograph Site (5RB106), Canyon Pintado NHD (5RB984), the Uintah Railway, the Dragon to Rangely Stage/Freight Road, the Dragon-Douglas Trail, and the D&RGW Railway/Excelsior Station. Four of the 6 key resources (historic linear sites) are located in the Project APE. The remaining resources are located outside of the Project APE. Although Carrot Men Pictograph (5RB106) and Canyon Pintado NHD (5RB984) are located beyond the Project APE, they could be subject to indirect effects.

If this alternative route were 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. The potential for the Project to cause adverse and visual effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies 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.

Affected Environment (Utah)

Class I Sites

A total of 655 sites were identified in the Class I inventory conducted for Alternative COUT BAX-B in Utah, including 335 prehistoric sites, 278 historic sites, and 42 multi-component sites (Table 3-259). Ninety percent (n=590) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Two NRHP-listed properties, Buckhorn Wash Rock Art Sites (42EM1122) and Nephi Mounds (42JB2), are situated in this zone. Five percent (n=30) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=35) are located in the Project APE, including 8 prehistoric lithic 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 18 segments of 12 historic linear sites (i.e., power line, telephone line, canal, railroad, and road segments). The D&RGW Railway, the Buckhorn Flat Railroad, and the U.S. Highway 6 are located in the high

cultural resource intensity zone along this alternative route. Multiple segments of these historic linear sites are also located in the moderate and low cultural resource intensity zones.

Based on information obtained from the BLM regarding NHTs, several segments of the Old Spanish NHT have been identified and formally documented in the Project area, including multiple segments and spurs of the Northern Route of the trail and the Northern Branch. It should be noted, however, that 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 95 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), 8 homesteads, 3 military test facilities, 3 oil drilling camps, 1 Mormon Pioneer monument, 1 bridge, 1 feedlot and tramway, 1 kiln, 1 historic art site, 1 prospect, 1 railroad station and 1 railroad camp (possibly associated with the D&RGW Railway), 1 railroad yard (D&RGW Floy Loading Yard), 1 town site, and 1 watering system/military test facility. Sites with both prehistoric and historic components include 3 prehistoric rock art sites and historic inscriptions, 1 prehistoric rock shelter and historic inscription, and 1 prehistoric campsite and homestead. The remaining sites include 13 canals (17 segments), 3 roads (13 segments), and 8 railroads (36 segments). These linear sites include, but are not limited to, the Moroni and Mount Pleasant Canal, Huntington Canal, the D&RGW Railway (23 segments), the Buckhorn Flat Railroad (2 segments), the Utah Southern Railroad, the Ballard and Thompson Railroad, U.S. Highway 6, Moab to Thompson State Highway/U.S. Highway 450, and U.S. Highway 91. The Old Spanish NHT is also a visually sensitive cultural resource along this alternative route.

Of particular importance is to mention, that 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 historic properties along Alternative COUT BAX-B in Utah. Twenty-four of these 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 located 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 latter has been destroyed by decades of plowing. 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 in 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 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 the trail at Links U487, U728, U729, 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 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 (western half) are located in the high cultural resource intensity zone along this alternative route and are traversed by Link U730. In addition, Cottonwood Canyon 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. 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 93.7 miles of high, 2.6 miles of moderate, and 96.2 miles of low cultural resource intensity (Table 3-259). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 93.7 miles of high cultural resource intensity in Utah are the

result of 35 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

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 Utah Southern Railroad, the Ballard and Thompson Railroad, and 4 areas designated as ACECs (Big Hole, Cottonwood Canyon, Smith Cabin, and Tidwell Draw). Of these cultural resources, 6 are located in the Project APE. They include the Big Hole Rock Art ACEC, the D&RGW Railway, the Buckhorn Flat Railroad, the Ballard and Thompson Railroad, the U.S. Highway 6, and the Old Spanish NHT. The remaining resources are located outside or adjacent to the boundary of the Project APE. Although 26 NRHP-listed properties, the Utah Southern Railroad, and 3 ACECs (Cottonwood Canyon, Smith Cabin, and Tidwell Draw) are located outside or adjacent to the Project APE, they could be subject to indirect effects.

If this alternative route were 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. The potential for the Project to cause adverse and visual effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO. The agencies and the SHPO 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 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 3-259).

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 3-259). Key resources identified along Alternative COUT BAX-C in Colorado are the same as those identified for Alternative COUT BAX-B. If this alternative route were selected, the same procedures outlined in Alternative COUT BAX-B in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 665 sites were identified in the Class I inventory conducted for Alternative COUT BAX-C in Utah, including 324 prehistoric sites, 301 historic sites, and 40 multi-component sites (Table 3-259). Ninety percent (n=599) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. Two NRHP-listed properties, Buckhorn Wash Rock Art Sites (42EM1122) and Nephi Mounds (42JB2), are situated in this zone. Four percent (n=29) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Six percent (n=37) are located in the Project APE, including 7 prehistoric lithic 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), 1 water control system, 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 20 segments of 13 historic linear features (i.e., power line, canal, railroad, telegraph line, and road segments). The D&RGW Railway, the Buckhorn Flat Railroad, and U.S. Highway 6 are located in the high cultural resource intensity zone along this alternative route. Multiple segments of these historic linear sites are also located in both the moderate and low cultural resource intensity zones.

Based on information obtained from the BLM regarding NHTs, several segments of the Old Spanish NHT have been identified and formally documented in the Project area. These include multiple segments and spurs of the Northern Route of the wagon trail and the Northern Branch. It should be noted that 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 103 historic properties associated with Alternative COUT BAX-C in Utah are identified as visually sensitive. These resources include 25 NRHP-listed properties, 14 prehistoric rock art sites, 5 prehistoric habitations (room block and rock shelters with rock art), 10 historic habitations (e.g., homesteads and multiple room structures), 3 oil drilling camps, 3 military test facilities, 2 dams, 1 feedlot

and tramway, 1 bridge, 1 kiln, 1 Mormon Pioneer monument, 1 rock art site, 1 prospect, 1 railroad camp and 1 railroad station (possibly associated with the D&RGW Railway), 1 railroad yard, 1 town site, 1 watering system/military test facility, 3 rock art sites with both prehistoric and historic elements, 1 prehistoric campsite and historic homestead, and 1 prehistoric rock shelter and historic rock art. The remaining cultural resources include 13 canals (17 segments), 8 railroads (38 segments), and 3 roads (15 segments). These historic linear sites include, but are not limited to, the Moroni and Mount Pleasant Canal, the D&RGW Railway (24 segments), the Buckhorn Flat Railroad (4 segments), the Utah Southern Railroad, the Ballard and Thompson Railroad, U.S. Highway 6, Moab to Thompson State Highway/U.S. Route 450, and U.S. Highway 91. The Old Spanish NHT is also a visually sensitive cultural resource along this alternative route.

Of particular significance is to mention, that 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 U731, U732, and U733 (northern portion of the San Rafael Swell); and segments of the Northern Branch have been recorded along Links U486, U487, U488, and U490 (south of the Book Cliffs and alongside the state highway corridor). This alternative route crosses the trail 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 is located in the designated Rock Art ACEC, and has also been identified as part of the San Rafael National Heritage Area. Big Hole is a rock art site located in the eastern edge of the San Rafael Swell, between the Price and San Rafael rivers in Emery County, Utah. It contains a cluster of highly elaborate petroglyph panels; fine examples of prehistoric rock art in the Colorado Plateau. 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 80.5 miles of high, 4.3 miles of moderate, and 118.2 miles of low cultural resource intensity (Table 3-259). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 80.5 miles of high cultural intensity in Utah are the result of 37 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

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 Utah Southern Railroad, the Ballard and Thompson Railroad, U.S. Highway 6, and the Big Hole Rock Art ACEC. Of these key resources, 5 are located in the Project APE. These include the D&RGW Railway, the Buckhorn Flat Railroad, the Ballard and Thompson Railroad, U.S. Highway 6, and the Old Spanish NHT. The remaining cultural resources are located outside or adjacent to the boundary of the Project APE. Although 26 NRHP-listed properties, the Utah Southern Railroad, and the Big Hole Rock Art ACEC are located outside or adjacent to 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 also 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 proposed Links U488 and U489, and outside of the Project corridor.

If this alternative route were selected, the same procedures outlined in 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 3-259).

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 3-259). Key resources identified along Alternative COUT BAX-E in Colorado are the same as those identified for Alternative COUT BAX-B. If this alternative route were selected, the same procedures outlined in Alternative COUT BAX-B in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 884 sites were identified in the Class I inventory conducted for Alternative COUT BAX-E in Utah, including 368 prehistoric sites, 448 historic sites, and 68 multi-component sites (Table 3-259). Eighty-eight percent (n=780) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Nephi Mounds [42JB2]) and the Buckhorn Flat Railroad are situated in this zone. Five percent (n=42) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Seven percent (n=62) are located in the Project APE, including 13 prehistoric lithic and artifact scatters, 1 prehistoric campsite, 1 prehistoric lithic procurement area, 1 prehistoric wickiup, 5 historic habitations (e.g., homesteads, tent platforms, and foundations), 3 historic artifact scatters, 2 dendroglyphs, 1 historic campsite, 1 mine camp, 1 railroad camp (possibly associated with the D&RGW Railway), 1 water control system, 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 historic livestock enclosure/driveline, 1 prehistoric lithic scatter and homestead, and 1 rock art site with both prehistoric and historic elements. The remaining sites include 24 segments of 18 historic linear sites (i.e., power line, canal, railroad, telegraph, and road segments). The D&RGW Railway, the Utah and Pleasant Valley Railway, and U.S. Highway 6 are located in the high cultural resource intensity zone along this alternative route. In addition, multiple segments of the D&RGW Railway and U.S. Highway 6 are located in the low cultural resource intensity zone.

Based on information obtained from the BLM regarding NHTs, several segments of the Old Spanish NHT have been identified and formally recorded in the Project area. This includes multiple segments and spurs of the Northern Route of the wagon trail and the Northern Branch. It should be noted that 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 82 historic properties associated with Alternative COUT BAX-E in Utah are identified as visually sensitive. These sites include 5 NRHP-listed properties, 2 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, concrete foundations, and log cabins), 2 historic artifact scatters, 1 town site, 1 bridge, 1 CCC campground, 1 feedlot and tramway, 1 hotel/bar building, 1 mine camp, 1 prospect, 3 oil drilling camps, 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 10 canals (13 segments), 7 roads (26 segments), 13 railroads (44 segments), 1 telegraph line, and 1 aqueduct. These sites include, but are not limited to, the Mona Irrigation Ditch System, Carbon Canal, D&RGW Railway (24 segments), the Utah Railway, the Utah Southern Railroad, the Utah and Pleasant Valley Railway, the Ballard and Thompson Railroad, the Buckhorn Flat Railroad (2 segments), U.S. Highway 6, Moab to Thompson State Highway/

U.S. Route 450, Utah State Route 10, and U.S. Highway 91. The Old Spanish NHT is also a visually sensitive cultural resource along this alternative route.

Of particular significance is to mention, that 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 historic properties along Alternative COUT BAX-E in Utah. Five of the six 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 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 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-E in Utah. Segments of the Northern Branch have been recorded along Links U486, U487, U488, and U490 (south of the Book Cliffs and alongside the state highway corridor). This alternative route crosses the trail 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 has also 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, 67.2 miles of high, 4.9 miles of moderate, and 132.7 miles of low cultural resource intensity (Table 3-259). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 67.2 miles of high cultural resource intensity in Utah are the result of 62 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources along Alternative COUT BAX-E in Utah include 6 NRHP-listed properties, the Old Spanish NHT (Northern Route and Northern Branch), U.S. Highway 6, the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Railway, the Utah Southern Railroad, the Utah and Pleasant Valley Railway, the Ballard and Thompson Railroad, and the Grassy Trail ACEC. Of the 15 key resources, 6 are located in the Project APE. These resources are the Old Spanish NHT, U.S. Highway 6, the D&RGW Railway, the Utah Railway, the Utah and Pleasant Valley Railway, and the Ballard and Thompson Railroad. The remaining cultural resources are located outside or adjacent to the boundary of the Project APE. Although the NRHP-listed properties, the Utah Southern Railroad, the Buckhorn Flat Railroad, and the Grassy Trail ACEC are located outside or adjacent to 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 also 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 proposed Links U488 and U489, and outside of the Project corridor.

If this alternative route were selected, the same procedures outlined in 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 alternative routes considered in the Colorado to Utah – U.S. Highway 40 to Central to Clover are presented in Table 3-260 and described by state in this section.

TABLE 3-260 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	National Register of Historic Places Listed Property	National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
Alternative COUT-A and Route Variation									
COUT-A	206.0	487	42	6	0	0	197.9	5.5	2.6
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	182.0	372	37	6	0	0	175.2	4.5	2.3
COUT-A-1	205.6	487	42	6	0	0	197.6	5.4	2.6
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	181.6	372	37	6	0	0	174.9	4.4	2.3

TABLE 3-260 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	National Register of Historic Places Listed Property	National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
Alternative COUT-B and Route Variations									
COUT-B	216.0	556	58	6	0	0	205.3	5.9	4.8
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	192.0	441	53	6	0	0	182.6	4.9	4.5
COUT-B-1	212.7	511	52	6	0	0	203.5	5.1	4.1
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	188.7	396	47	6	0	0	180.8	4.1	3.8
COUT-B-2	214.2	511	52	0	0	0	205	5.1	4.1
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	190.2	396	47	6	0	0	182.3	4.1	3.8
COUT-B-3	213.9	522	54	6	0	0	204.5	5.3	4.1
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	189.9	407	49	6	0	0	181.8	4.3	3.8
COUT-B-4	214.2	511	52	6	0	0	205	5.1	4.1
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	190.2	396	47	6	0	0	182.3	4.1	3.8
COUT-B-5	213.9	522	54	6	0	0	204.5	5.3	4.1
Colorado	24.0	115	5	0	0	0	22.7	1.0	0.3
Utah	189.9	407	49	6	0	0	181.8	4.3	3.8
Alternative COUT-C and Route Variations									
COUT-C	209.8	1,197	68	6	0	1	195.6	6.8	7.4
Colorado	24.8	123	5	0	0	0	23.3	1.0	0.5
Utah	185.0	1,074	63	6	0	1	172.3	5.8	6.9
COUT-C-1	206.4	1,147	60	6	0	1	193.6	6.0	6.8
Colorado	24.8	123	5	0	0	0	23.3	1.0	0.5
Utah	181.6	1,024	55	6	0	1	170.3	5.0	6.3
COUT-C-2	207.9	1,147	60	6	0	1	195.1	6.0	6.8
Colorado	24.8	123	5	0	0	0	23.3	1.0	0.5
Utah	183.1	1,024	55	6	0	1	171.8	5.0	6.3
COUT-C-3 (Agency Preferred Alternative)	207.6	1,158	62	6	0	1	194.6	6.2	6.8
Colorado	24.8	123	5	0	0	0	23.3	1.0	0.5
Utah	182.8	1,035	57	6	0	1	171.3	5.2	6.3
COUT-C-4	207.9	1,144	60	6	0	1	195.2	6	6.7
Colorado	24.8	123	5	0	0	0	23.3	1.0	0.5
Utah	183.1	1,021	55	6	0	1	171.9	5	6.2

TABLE 3-260 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	National Register of Historic Places Listed Property	National Historic Trails	Areas of Critical Environmental Concern with Cultural Components	Low	Moderate	High
COUT-C-5	207.6	1,155	62	6	0	1	194.7	6.2	6.7
Colorado	24.8	123	5	0	0	0	23.3	1.0	0.5
Utah	182.8	1,032	57	6	0	1	171.4	5.2	6.2
Alternatives COUT-H and COUT-I									
COUT-H (Applicant Preferred Alternative)	200.6	1,346	89	10	0	1	181.3	9.1	10.2
Colorado	24.8	123	4	0	0	0	23.3	1.0	0.5
Utah	175.8	1,223	85	10	0	1	158	8.1	9.7
COUT-I	240.2	1,486	101	24	0	1	217.8	10.4	12
Colorado	24.8	123	4	0	0	0	23.3	1.0	0.5
Utah	215.4	1,363	97	24	0	1	194.5	9.4	11.5
NOTE: ¹ The total number of sites provided here does not include the multiple segments of those historic linear sites that extend through the Project area; includes the Old Spanish National Historic Trail, which is located in the vicinity of the Project area									

Alternative COUT-A and Route Variation (COUT-A-1)

Affected Environment (Colorado)

Class I Sites

A total of 115 sites were identified in the Class I inventory conducted for Alternative COUT-A in Colorado, including 90 prehistoric sites, 18 historic sites, and 7 multi-component sites (Table 3-260). Ninety-three percent (n=107) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. The old Victory Highway is situated in this zone. Five percent (n=6) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of but adjacent to the boundary of the Project APE. Two percent (n=2) of the sites are located in the Project APE, including 1 prehistoric campsite and 1 scatter of fire-cracked rock.

Class I sites potentially affected by Route Variation COUT-A-1 in Colorado are the same as those identified for Alternative COUT-A, as the routes follow the same path through the state (Table 3-260).

Cultural Visual Resources

A total of 5 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 historic Ute rock art site, 1 bridge, and the old Victory Highway.

Visually sensitive cultural resources associated with Route Variation COUT-A-1 in Colorado are the same as those 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-A or Route Variation COUT-A-1.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs located along the Colorado segment of Alternative COUT-A or Route Variation COUT-A-1.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-A or Route Variation COUT-A-1.

Environmental Consequences (Colorado)

Alternative COUT-A

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 0.3 mile of high, 1.0 mile of moderate, and 22.7 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah and not in Colorado. As a reminder, 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 0.3 mile of high cultural resource intensity in Colorado are the result of 2 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

A key resource along this alternative route is the old Victory Highway. Although this key resource is located beyond the Project APE, the historic road could be subject to indirect effects.

If this alternative route were 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. The potential for the Project to cause adverse and visual effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO, 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-A Route Variation (COUT-A-1)

Impacts under Route Variation COUT-A-1 in Colorado would be the same as Alternative COUT-A, as the routes follow the same path through the state (Table 3-260). The key resources identified along this route variation in Colorado are the same as those identified for Alternative COUT-A. If this route

variation were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I

A total of 372 sites were identified in the Class I inventory conducted for Alternative COUT-A in Utah, including 184 prehistoric sites, 160 historic sites, and 28 multi-component sites (Table 3-260). Eighty-nine percent (n=333) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Nephi Mounds [42JB2]), one designated TCP (Ute vision quest site [42UT395]), U.S. Highway 6, and the old Victory Highway are situated in this zone. Seven percent (n=25) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Four percent (n=14) are located in the Project APE, including 3 historic artifact scatters, 1 homestead, 1 prehistoric processing station and historic campsite, 1 prehistoric campsite and historic artifact scatter, and 8 historic linear sites (i.e., canal, road, and railroad segments). The Sevier Railway/Marysville Branch of the D&RGW Railway is located in the high cultural resource intensity zone along this alternative route.

Class I sites potentially affected by Route Variation COUT-A-1 in Utah are the same as those identified for Alternative COUT-A (Table 3-260). It is important to note, however, that Route Variation COUT-A-1 in Utah follows the same route as Alternative COUT-A with a slight variation using Link U428, instead of Link U429, as the route approaches Trail Hollow in Wasatch County. There are no known cultural resource sites identified along Link U428.

Cultural-Visual Resources

A total of 37 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]), 1 prehistoric rock art site, 6 historic habitations (e.g., homesteads and foundations), 1 military hospital complex, Mill Fork Cemetery, 1 CCC dam/livestock enclosure, and 1 feedlot and tramway. The remaining sites include 11 canals (12 segments), 5 railroads (10 segments), and 4 roads (6 segments). The old Victory Highway, the Sevier Railway/Marysville Branch of the D&RGW Railway, the Utah and Pleasant Valley Railway, the Utah Southern Railroad, and U.S. Highway 6 are visually sensitive cultural resources along this alternative route.

Of particular importance is to mention, that 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.

Visually sensitive cultural resources associated with Route Variation COUT-A-1 in Utah are the same as those identified for Alternative COUT-A.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP, and located along Alternative COUT-A and Route Variation COUT-A-1 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 or Route Variation COUT-A-1.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Utah segment of Alternative COUT-A or Route Variation COUT-A-1.

Environmental Consequences (Utah)

Alternative COUT-A

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 2.3 miles of high, 4.5 miles of moderate, and 175.2 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 2.3 miles of high cultural resource intensity in Utah are the result of 14 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

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 Utah Southern Railroad, U.S. Highway 6, and the old Victory Highway. Although these key resources are located beyond the Project APE, they could be subject to indirect effects. An additional key resource along this alternative route is the Sevier Railway/Marysvale Branch of the D&RGW Railway, which is located in the Project APE.

If this alternative route were 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. The potential for the Project to cause adverse and visual effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO, 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-A Route Variation (COUT-A-1)

Impacts under Route Variation COUT-A-1 in Utah would be similar to Alternative COUT-A except for slight variations in the levels of cultural resource intensity (Table 3-260). However, miles of high cultural resource intensity anticipated along this route variation are the same as those for Alternative COUT-A. Key resources identified along this route variation in Utah are the same as those identified for Alternative COUT-A. Without mitigation, the type of potential impacts would be the same as those found for Alternative COUT-A in Utah.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Affected Environment (Colorado)

Class I Sites

Class I sites potentially affected by Alternative COUT-B and route variations in Colorado are the same as those identified for Alternative COUT-A, as the routes follow the same path through the state (Table 3-260).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT-B and route variations 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 or route variations.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT-B or route variations.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-B or route variations.

Environmental Consequences (Colorado)

Alternative COUT-B

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-B has the second fewest 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 3-260). The key resources identified along Alternative COUT-B in Colorado are the same as those identified for Alternative COUT-A. If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Impacts for Route Variations COUT-B-1 through COUT-B-5 in Colorado would be the same as Alternative COUT-A, as the routes follow the same path through the state (Table 3-260). The key resources identified along these route variations in Colorado are the same as those identified for Alternative COUT-A. If one of the Alternative COUT-B route variations were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I

A total of 441 sites were identified in the Class I inventory conducted for Alternative COUT-B in Utah, including 206 prehistoric sites, 201 historic sites, and 34 multi-component sites (Table 3-260). Eighty-eight percent (n=388) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Nephi Mounds [42JB2]), 1 designated TCP (Ute vision quest site [42UT395]), the Utah and Pleasant Valley Railway, the old Emma Park Road, and the old Victory Highway are also in this zone. Seven percent (n=29) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=24) are located in the Project APE, including 5 historic artifact scatters, 2 homesteads, 1 historic quarry/staging area, 1 prehistoric artifact scatter and historic livestock enclosure, 1 prehistoric lithic scatter, 1 prehistoric processing station and historic campsite, 1 prehistoric campsite and historic artifact scatter, and 12 historic linear sites (i.e., canal, aqueduct, road, and railroad segments). The Sevier Railway/Marysville Branch of the D&RGW Railway and U.S. Highway 6 are located in the high cultural resource intensity zone along this alternative route. Multiple segments of U.S. Highway 6 are also located in the low cultural resource intensity zone.

Class I sites potentially affected by Route Variation COUT-B-1 in Utah are similar to those identified for Alternative COUT-B. A total of 396 sites could potentially be affected if Route Variation COUT-B-1 were selected, compared to 441 sites under Alternative COUT-B. The differences in the number and types of sites occur along Links U511, U513, U515, and U560. Class I sites identified along this route variation, but not along Alternative COUT-B, include 2 historic sites (campsite and thermal feature) and 1 prehistoric lithic scatter. All of these sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has a lower number of sites included in the high cultural resource intensity zone when compare to Alternative COUT-B.

Class I sites potentially affected by Route Variation COUT-B-2 in Utah are similar to those identified for Alternative COUT-B. A total of 396 sites could potentially be affected if Route Variation COUT-B-2 were selected, compared to 441 sites under Alternative COUT-B. The differences in the number and types of sites occur along Links U511, 514, U515, U520, U540, and U560. Class I sites identified along this route variation, but not along Alternative COUT-B, include 1 prehistoric lithic scatter and 1 historic campsite; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-B-1.

Class I sites potentially affected by Route Variation COUT-B-3 in Utah are similar to those identified for Alternative COUT-B. A total of 407 sites could potentially be affected if Route Variation COUT-B-3 were selected, compared to 441 cultural resource sites under Alternative COUT-B. The differences in the number and types of sites occur along Links U512, U514, U516, and U560. Class I sites identified along this route variation, but not along Alternative COUT-B, are the same as those identified for Route Variation COUT-B-2. These sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-B-1.

Class I sites potentially affected by Route Variation COUT-B-4 in Utah are similar to those identified for Alternative COUT-B. A total of 396 sites could potentially be affected if Route Variation COUT-B-3 were selected, compared to 441 cultural resource sites under Alternative COUT-B. The differences in the number and types of sites occur along Links U512, U514, U515, U540, and U560. Class I sites identified along this route variation, but not along Alternative COUT-B, are the same as those identified for Route

Variation COUT-B-2. These sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-B-1.

Class I sites potentially affected by Route Variation COUT-B-5 in Utah are similar to those identified for Alternative COUT-B. A total of 407 sites could potentially be affected if Route Variation COUT-B-5 were selected, compared to 441 cultural resource sites under Alternative COUT-B. The differences in the number and types of sites occur along Links U511, U514, U516, U520, and U560. Class I sites identified along this route variation, but not along Alternative COUT-B, are the same as those identified for Route Variation COUT-B-2. These sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-B-1.

An unrecorded segment of U.S. Highway 6 is crossed by Route Variations COUT-B-1 through COUT-B-5 at Link U560.

Cultural-Visual Resources

A total of 53 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, 8 historic habitation sites (e.g., homesteads and foundations), 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, the Price City Water Line (7 segments), 15 canals (18 segments [one built by the CCC]), 6 roads (12 segments), 6 railroad (12 segments), and 2 railroad spurs of the D&RG Railroad. The old Victory Highway, U.S. Highway 6, the Sevier Railway/Marysvale Branch of the D&RGW Railway, the Utah and Pleasant Valley Railway, and the Utah Southern Railroad are visually sensitive cultural resources along this alternative route.

Of particular importance is to mention, that 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. Visually sensitive cultural resources potentially affected by Route Variations COUT-B-1, COUT-B-2, and COUT-B-4 in Utah are similar to those discussed for Alternative COUT-B, except that these route variations do not include the Price City Water Line, 2 railroad spurs of the D&RG Railroad, 2 roads (U.S. Highway 6 and “Road from Colton to Duchesne and Helper”), and 1 historic habitation.

Visually sensitive cultural resources associated with both Route Variations COUT-B-3 and COUT-B-5 in Utah are similar to those discussed for Alternative COUT-B, except that 2 railroad spurs and State Route 6 would not be located in the Project area.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP, and located along Alternative COUT-B and route variations 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 or route variations.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Utah segment of Alternative COUT-B or route variations.

Environmental Consequences (Utah)

Alternative COUT-B

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-B has the second fewest miles of high cultural resource intensity. In Utah, 4.5 miles of high, 4.9 miles of moderate, and 182.6 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 4.5 miles of high cultural resource intensity in Utah are the result of 24 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

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 Utah Southern Railroad, the old Victory Highway, and the old Emma Park Road. Although these key resources are located 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 U.S. Highway 6, which are located in the Project APE.

In addition to the baseline inventory data, Argyle Canyon Rock Art is also 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 proposed Links U431 and U432, adjacent to and in the Project APE. There are numerous rock art panels within the canyon, as well as prehistoric lithic/artifact scatters, habitations, and ceremonial sites.

If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Utah would be employed.

Alternative COUT-B Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Impacts under Route Variations COUT-B-1 through COUT-B-5 in Utah would be similar to Alternative COUT-B, except for slight variations in the levels of cultural resource intensity (Table 3-260). The miles of high cultural resource intensity, which are to be anticipated along these route variations in Utah, are fewer than those for Alternative COUT-B. A total of 3.8 miles of high cultural resource intensity are anticipated along these route variations in Utah. Key resources identified along Alternative COUT-B route variations in Utah are the same as those identified for Alternative COUT-B. Without mitigation, the type of potential impacts would be the same as those found under Alternative COUT-B.

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Affected Environment (Colorado)

Class I Sites

A total of 123 sites were identified in the Class I inventory conducted for Alternative COUT-C in Colorado, including 97 prehistoric sites, 19 historic sites, and 7 multi-component sites (Table 3-260). Ninety-three percent (n=114) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. The old Victory Highway is situated in this zone. Five percent (n=6) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Two percent (n=3) are located in the Project APE, including 1 prehistoric campsite, 1 prehistoric thermal feature (concentration of fire-cracked rock), and 1 homestead.

Class I sites potentially affected by Route Variations COUT-C-1 through COUT-C-5 in Colorado are the same as those identified for Alternative COUT-C, as the routes follow the same path through the state (Table 3-260).

Cultural-Visual Resources

Visually sensitive cultural resources identified along the Colorado segment of Alternative COUT-C and route variations 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-C or route variations.

National Historic Trails/Potential National Historic Trails

There are no NHTs or potential NHTs along the Colorado segment of Alternative COUT-C or route variations.

Areas of Critical Environmental Concern with Cultural Components

There are no ACECs with cultural components along the Colorado segment of Alternative COUT-C or route variations.

Environmental Consequences (Colorado)

Alternative COUT-C

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-C has the third highest miles of high cultural resource intensity. In Colorado, there are 0.5 mile of high, 1.0 mile of moderate, and 23.3 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah and not in Colorado. As a reminder, 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 0.5 mile of high cultural intensity in Colorado are the result of 3 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

The key resources identified along this alternative route in Colorado are the same as those identified for Alternative COUT-A in Colorado.

If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Impacts under Route Variations COUT-C-1 through COUT-C-5 in Colorado would be the same as Alternative COUT-C, as the routes follow the same path through the state (Table 3-260). The key resources identified along these route variations are the same as those identified for Alternative COUT-A in Colorado. If one of the Alternative COUT-C route variations were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 1,074 sites were identified in the Class I inventory conducted for Alternative COUT-C in Utah, including 627 prehistoric sites, 398 historic sites, 3 ethnographic sites, and 46 multi-component sites (Table 3-260). Ninety percent (n=967) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Nephi Mounds [42JB2]), one designated TCP (Ute vision quest site [42UT395]), the Utah and Pleasant Valley Railway, and the old Emma Park Road are in this zone. Five percent (n=54) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Five percent (n=53) are located in the Project APE, including 14 prehistoric lithic and artifact scatters, 12 prehistoric campsites, 2 prehistoric rock shelters, 1 rock art site (Ute styles), 5 historic artifact scatters, 2 historic campsites, 1 historic quarry/staging area, 1 prospect, 1 mine camp, 1 cairn, 1 homestead, 1 historic structural site of unknown function, 2 prehistoric lithic scatters and historic artifact scatters, 1 prehistoric artifact scatter and historic livestock enclosure, and 1 prehistoric campsite and historic artifact scatter. The remaining sites include 7 historic linear sites (e.g., road/trail, canal, aqueduct, and railroad segments). The Sevier Railway/Marysville Branch of the D&RGW Railway and U.S. Highway 6 also are located in the high cultural resource intensity zone along this alternative route. In addition, multiple segments of U.S. Highway 6 are located in the low cultural resource intensity zone.

Class I sites potentially affected by Route Variation COUT-C-1 in Utah are similar to those identified for Alternative COUT-C. A total of 1,024 sites could potentially be affected if Route Variation COUT-C-1 were selected, compared to 1,074 cultural resource sites under Alternative COUT-C. The differences in the number and types of sites occur along Links U409, U511, U513, U515, and U560. Class I sites identified along this route variation, but not along Alternative COUT-C, include 1 prehistoric lithic scatter, 2 historic campsites, 1 livestock enclosure, 1 historic thermal feature, and 1 historic habitation (dugout). Only one of these sites (historic campsite) is located in the area classified as the high cultural resource intensity zone. This route variation in Utah has the second highest number of sites included in the high cultural resource intensity zone when compare to Alternative COUT-C.

Class I sites potentially affected by Route Variation COUT-C-2 in Utah are similar to those identified for Alternative COUT-C. A total of 1,024 sites could potentially be affected if Route Variation COUT-C-2 were selected, compared to 1,074 cultural resource sites under Alternative COUT-C. The differences in the number and types of sites occur along Links U409, U511, U520, 514, U540, U515, and U560. Class I sites identified along this route variation, but not along Alternative COUT-C, include 1 prehistoric lithic

scatter, 2 historic campsites, 1 historic habitation (dugout), and 1 livestock enclosure. Only one of these sites (historic campsite) is located in the area classified as the high cultural resource intensity zone. This route variation in Utah has the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-C-1.

Class I sites potentially affected by Route Variation COUT-C-3 in Utah are similar to those identified for Alternative COUT-C. A total of 1,035 sites could potentially be affected if Route Variation COUT-C-3 were selected, compared to 1,074 cultural resource sites under Alternative COUT-C. The differences in the number and types of sites occur along Links U409, U520, U514, U516, and U560. Class I sites identified along this route variation, but not along Alternative COUT-C, are the same as those identified for Route Variation COUT-C-2. Only one of these sites (historic campsite) is located in the area classified as the high cultural resource intensity zone, the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-C-1

Class I sites potentially affected by Route Variation COUT-C-4 in Utah are similar to those identified for Alternative COUT-C. A total of 1,021 sites could potentially be affected if Route Variation COUT-C-4 were selected, compared to 1,074 cultural resource sites under Alternative COUT-C. The differences in the number and types of sites occur along Links U411, U512, U514, U540, U515, and U560. Class I sites identified along this route variation, but not along Alternative COUT-C, include 1 prehistoric lithic scatter and 1 historic campsite; both sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has the fewest number of sites included in the high cultural resource intensity zone.

Class I sites potentially affected by Route Variation COUT-C-5 in Utah are similar to those identified for Alternative COUT-C. A total of 1,032 sites could potentially be affected if Route Variation COUT-C-5 were selected, compared to 1,074 cultural resource sites under Alternative COUT-C. The differences in the number and types of sites occur along Links U411, U512, U514, U516, and U560. Class I sites identified along this route variation, but not along Alternative COUT-C, are the same as those identified for Route Variation COUT-C-4. These sites are located in the area classified as the low cultural resource intensity zone. This route variation in Utah has the same number of sites included in the high cultural resource intensity zone as Route Variation COUT-C-4.

An unrecorded segment of U.S. Highway 6 is crossed by Route Variations COUT-C-1 through COUT-C-5 at Link U560.

Cultural-Visual Resources

A total of 63 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]), 7 prehistoric rock art sites (primarily Fremont styles), 1 historic Ute sweathouse, 1 prehistoric artifact scatter (Paleoindian), 9 historic habitations (e.g., homesteads and foundations), 5 historic rock art sites (e.g., Hispanic and Ute elements), 3 historic drivelines, 2 mine camps, 2 town sites (Soldier Summit and Gilluly), 1 way station, 1 water well, Mill Fork Cemetery, 1 bridge, 1 feedlot and tramway, and 3 rock art sites depicting both prehistoric and historic elements. The remaining cultural resources include 5 canals (6 segments), the Price City Water Line (7 segments), 5 roads (13 segments), 6 railroads (12 segments), and 2 railroad spurs of the D&RG Railroad. The Sevier Railway/Marysville Branch of the D&RGW Railway, the Utah and Pleasant Valley Railway, and the Utah Southern Railroad are visually sensitive cultural resources along this alternative route. Historic road corridors include the Castle Valley and Spanish Fork/Road to Nine Mile Spur, the abandoned “Road from Colton to Duchesne and Helper,” U.S. Highway 6, and U.S. Highway 91.

Of particular importance is to mention, that 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.

Visually sensitive cultural resources potentially affected by Route Variations COUT-C-1, COUT-C-2, and COUT-C-4 in Utah are similar to those discussed for Alternative COUT-C, except that these route variations do not include the Price City Water Line, 2 railroad spurs of the D&RG Railroad, 2 roads (State Route 6 and Castle Valley and Spanish Fork Road), 1 historic habitation, and 1 prehistoric rock art site.

Visually sensitive cultural resources associated with both Route Variations COUT-C-3 and COUT-C-5 in Utah are similar to those discussed for the other three Alternative COUT-C route variations, except that the Price City Water Line and the “Road from Colton to Duchesne and Helper” are located in the Project area.

Historic Properties Listed in the National Register of Historic Places

Historic properties listed in the NRHP, and located along Alternative COUT-C and route variations 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 or route variations.

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 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 U400 and U401 in the low cultural resource intensity zone, beyond the Project APE. Additionally, a portion of the Nine Mile Canyon ACEC is situated along Link U404 in the area classified as the moderate cultural resource intensity zone.

The ACEC with cultural components located along the Utah segment of Route Variations COUT-C-1 through COUT-C-5 is the same as that identified for Alternative COUT-C.

Environmental Consequences (Utah)

Alternative COUT-C

Overall, of the alternative routes considered for the COUT segment, Alternative COUT-C has the third highest miles of high cultural resource intensity. In Utah, there are 6.9 miles of high, 5.8 miles of moderate, and 172.3 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 6.9 miles of high cultural intensity in Utah are the result of 53 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources along Alternative COUT-C in Utah include 6 NRHP-listed properties, 1 designated TCP (Ute vision quest site [42UT395]), the old Emma Park Road, the Utah and Pleasant Valley Railway, the Utah Southern Railroad, and Nine Mile Canyon ACEC. Although these key resources are located 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 U.S. Highway 6, which are located in the Project APE.

In addition to the baseline inventory data, Argyle Canyon Rock Art is also a key resource identified along the alternative route. This cultural resource is situated between Argyle Ridge to the south and Bad Land Cliffs to the north, south of Duchesne, Utah; along proposed Links U404 and U406, adjacent to and in the Project APE. There are numerous rock art panels within the canyon, as well as prehistoric lithic/artifact scatters, habitation structures, and ceremonial sites.

If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Utah would be employed.

Alternative COUT-C Route Variations (COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5)

Impacts under Route Variations COUT-C-1 through COUT-C-5 in Utah would be similar to Alternative COUT-C, except for slight variations in the levels of cultural resource intensity (Table 3-260). The miles of high cultural resource intensity, which are to be anticipated along these route variations in Utah, are fewer than those for Alternative COUT-C. A total of 6.3 miles of high cultural resource intensity are anticipated along Route Variations COUT-C-1 through COUT-C-3, while 6.2 miles of high cultural resource intensity are anticipated along Route Variations COUT-C-4 and COUT-C-5 in Utah. Key resources identified along alternative COUT-C route variations in Utah are the same as those identified for Alternative COUT-C. Without mitigation, the type of potential impacts would be the same as those found under Alternative COUT-C.

Alternative COUT-H (Applicant Preferred Alternative)

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 both routes follow the same path through the state (Table 3-260).

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-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-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 3-260). The key resources identified along Alternative COUT-H in Colorado are the same as those identified for Alternative COUT-A. If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 1,223 sites were identified in the Class I inventory conducted for Alternative COUT-H in Utah, including 661 prehistoric sites, 507 historic sites, 3 ethnographic sites, and 52 multi-component sites (Table 3-260). Eighty-eight percent (n=1,075) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Nephi Mounds [42JB2]), the Price Canal, and the Emma Park Road are situated in this zone. Six percent (n=70) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Six percent (n=78) are located in the Project APE, including 16 prehistoric lithic and artifact scatters, 12 prehistoric campsites, 2 prehistoric rock shelters, 1 rock art site (Ute elements), 1 Fremont burial, 1 prehistoric lithic procurement area, 10 historic artifact scatters, 5 historic habitations (e.g., homestead, tent platform, and foundations), the mining town of Heiner (Carbon), 2 historic campsites, 2 unknown structural sites, 2 dendroglyphs, 2 mine camps, 1 mine complex, 1 coal refuse site, 1 prospect, 1 historic cairn, 1 railroad camp (possibly associated with the Utah Railway), 3 prehistoric lithic scatters and historic artifact scatters, 1 prehistoric lithic procurement area and historic artifact scatter, 1 prehistoric campsite and livestock enclosure/driveline, and 11 historic linear sites (e.g., canal, road, and railroad segments). Remnants of the Utah and Pleasant Valley Railway and the Utah Railway are located in the high cultural resource intensity zone along this alternative route.

Cultural-Visual Resources

A total of 85 historic properties associated with Alternative COUT-H in Utah are identified as visually sensitive. These sites include 9 NRHP-listed properties, 7 prehistoric rock art sites, 1 Paleoindian artifact scatter, 1 Ute sweathouse, 13 historic habitations (e.g., homesteads, foundations, and dugouts), 7 mining-related sites (i.e., mine camps and complexes), 5 historic rock art sites, 1 CCC campground, 3 historic drivelines, 2 water wells, Heiner (Carbon) Town site, 1 way station, 1 isolated historic dugout, 1 WPA erosion control system, 1 feedlot and tramway, 1 railroad boarding house complex, 1 standing structure (wall and garage), 3 rock art sites with both prehistoric and historic elements, and 1 prehistoric rock shelter/rock art and historic campsite. The remaining cultural resources include 12 canals (14 segments), 9 railroads (14 segments), 3 roads (10 segments), and 1 telegraph/telephone line. These linear sites include, but are not limited to, the Mona Irrigation Ditch System, the Utah and Pleasant Valley Railway, the Utah Railway, and the Utah Southern Railroad. Historic road corridors include the Castle Valley and Spanish Fork/Road to Nine Mile Spur, the old State Route 6, and U.S. Highway 91.

Of particular importance is to mention, that 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 historic 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 historic 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.

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 9.7 miles of high, 8.1 miles of moderate, and 158 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource 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 9.7 miles of high cultural resource intensity in Utah are the result of 78 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources along this alternative include 10 NRHP-listed properties, Heiner (Carbon) Town site, the Utah and Pleasant Valley Railway, the Utah Railway, the Utah Southern Railroad, the Kenilworth and Spring Canyon branches of the D&RGW Railroad, the Emma Park Road, and Nine Mile Canyon ACEC. Of these cultural resources, three sites (Carbon Town site, the Utah and Pleasant Valley Railway, and the Utah Railway) are located in the area classified as the high cultural resource intensity zone, in the Project APE. Although the remaining resources are located outside or adjacent to the Project APE, they could be subject to indirect effects.

In addition to the baseline inventory data, Argyle Canyon Rock Art is also a key resource identified along the alternative route. This cultural resource is located between Argyle Ridge to the south and Bad Land Cliffs to the north, south of Duchesne, Utah; along proposed Links U404 and U406, adjacent to and in the Project APE. There are numerous rock art panels within the canyon, as well as prehistoric archaeological sites.

If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Utah would be employed.

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 3-260).

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-A.

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 3-260). The key resources identified along Alternative COUT-I in Colorado are the same as those identified for Alternative COUT-A. If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Colorado would be employed.

Affected Environment (Utah)

Class I Sites

A total of 1,363 sites were identified in the Class I inventory conducted for Alternative COUT-I in Utah, including 771 prehistoric sites, 542 historic sites, 3 ethnographic sites, and 47 multi-component sites (Table 3-260). Eighty-nine percent (n=1,215) are located in the area classified as the low cultural resource intensity zone, meaning these sites are outside of the Project APE. One NRHP-listed property (Nephi Mounds [42JB20]), the old Emma Park Road, the D&RGW Railway, and the Buckhorn Flat Railroad are situated in this zone. Approximately 5.5 percent (n=74) are located in the area classified as the moderate cultural resource intensity zone, meaning these sites are located in an area outside of, but adjacent to, the boundary of the Project APE. Approximately 5.5 percent (n=74) are located in the Project APE, including 17 prehistoric lithic and artifact scatters, 18 prehistoric campsites, 3 prehistoric habitations (i.e., rock shelters and pithouse), 1 prehistoric rock art site (Ute elements), 7 historic artifact scatters, 2 historic campsites, 2 homesteads, 2 mine camps, 1 mine complex, 1 prospect site, 1 cairn, 1 CCC retaining wall, 1 unknown structural site, 2 prehistoric lithic scatters and historic artifact scatters, 1 prehistoric single-room structure and historic campsite, and 14 historic linear sites (e.g., canal, telephone, railroad, and road/trail segments).

According to the Class I records, a segment of the historic, narrow gauge D&RGW Railroad, is located in the high cultural resource intensity zone along this alternative route. The site consists of the historic railroad grade, the remnants of the Price River bridge crossing, and a concrete foundation on the east side of the railroad grade.

Cultural-Visual Resources

A total of 97 historic properties associated with Alternative COUT-I in Utah are identified as visually sensitive. These sites include 23 NRHP-listed properties, 7 prehistoric rock art sites, 1 Paleoindian artifact scatter, 1 Ute sweathouse, 11 historic habitations (e.g., homesteads and foundations), 5 historic art sites (European-American and Hispanic elements), 2 mine camps, 3 historic drivelines, the mining town of Mohrland, 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, 3 rock art sites with both prehistoric and historic elements, and 1 prehistoric lithic scatter and historic homestead. The remaining cultural resources include 17 canals (20 segments), 7 railroads (14 segments), 7 roads (12 segments), and 1 segment of a telegraph/telephone line. Historic linear features include but are not limited to the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Railway, the Utah Southern Railroad, Utah State Route 10, Utah State Route 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).

Of particular importance is to mention, that 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 historic 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 previously indicated 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-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.

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 11.5 miles of high, 9.4 miles of moderate, and 194.5 miles of low cultural resource intensity (Table 3-260). Most of the cultural resource sites located in the Project APE along this alternative route, occur in Utah. As a reminder, 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 11.5 miles of high cultural resource intensity in Utah are the result of 74 known sites located in the Project APE along the alternative route. Potential impacts on these 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.

Key resources along this alternative route include 24 NRHP-listed properties, the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Railway, the Utah Southern Railroad, the old Emma Park Road, and Nine Mile Canyon ACEC. 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 also a key resource identified along the alternative route. This cultural resource is located between Argyle Ridge to the south and Bad Land Cliffs to the north, south of Duchesne, Utah; along proposed Links U404 and U406, adjacent to and in the Project APE. There are numerous rock art panels within the canyon, as well as prehistoric archaeological sites.

If this alternative route were selected, the same procedures outlined in Alternative COUT-A in Utah would be employed.

3.2.18.5.6 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

Siting Area A – Powder Wash

Affected Environment

A total of 139 cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area A under Alternative WYCO-B and route variations in Wyoming and Colorado. These sites, broken down by state, consist of 66 prehistoric sites, 4 historic sites, and 2 multi-component sites in Wyoming; and 54 prehistoric sites, 6 historic sites, and 7 multi-component sites in Colorado.

In Wyoming, cultural resource sites include 38 prehistoric campsites, 16 prehistoric lithic and artifact scatters, 9 prehistoric isolated features (thermal features, cairn, and stained sediments), 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 segment of the Cherokee Historic Trail, 1 prehistoric hunting blind and historic campsite, and 1 prehistoric thermal feature and historic artifact scatter. The majority of the prehistoric sites and prehistoric components are of unknown cultural affiliation. Historic resources date between the mid-1800s and the 1920s. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

In Colorado, cultural resource sites include 27 prehistoric campsites, 23 prehistoric lithic scatters, 2 prehistoric habitation sites (pithouse and wickiups), 1 prehistoric thermal feature, 1 prehistoric storage

cist, 3 historic habitation sites (homestead and habitation structures), 2 historic artifact scatters, 1 historic campsite, and 7 prehistoric campsites and lithic scatters with historic components (artifact scatters, short-term campsites, and brush shelter). The majority of the prehistoric sites and prehistoric components are of unknown cultural affiliation. Historic resources date between the late 1880s and the 1950s. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 139 known cultural resource sites (72 in Wyoming and 67 in Colorado) potentially would be affected by a proposed series compensation station in Siting Area A under Alternative WYCO-B and route variations. 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 were constructed in Siting Area A, a complete Class III intensive pedestrian inventory would be conducted for proposed location as part of the Class III study. All sites would be documented and evaluated for eligibility for the NRHP. The potential for the Project to cause adverse effects on sites would be evaluated. All site information would be provided in the Class III inventory report that would be reviewed by the agencies and the SHPO, 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.

Siting Area B – Nine Mile Basin

Affected Environment

A total of 18 cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area B under Alternative WYCO-B and route variations in Colorado. These sites include 11 prehistoric lithic and artifact scatters, 3 prehistoric lithic procurement areas, 2 prehistoric campsites, 1 prehistoric thermal feature, and 1 Fremont pithouse. Nearly all of these sites are of unknown cultural affiliation. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 18 known cultural resource sites potentially would be affected by a proposed series compensation station in Siting Area B under Alternative WYCO-B and route variations in Colorado. If this siting area were constructed, the same procedures outlined in Siting Area A under Alternative WYCO-B would be employed.

Siting Area C – Maybell

Affected Environment

A total of 61 cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area C under Alternative WYCO-B and route variations in Colorado. These sites, broken down by type, consist of 54 prehistoric sites, 4 historic sites, and 3 multi-component sites. Site types include 31 prehistoric lithic and artifact scatters, 18 prehistoric campsites, 2 prehistoric lithic procurement areas, 2 prehistoric pithouses, 1 prehistoric isolated feature (stained sediments), 1 historic homestead, 1 irrigation ditch, 1 historic dugout, 1 segment of Brown's Park Road, and 3 prehistoric lithic scatters with historic

components (habitation structures). The majority of the prehistoric sites and prehistoric components are of unknown cultural affiliation. Of the prehistoric sites assigned a cultural affiliation, 3 sites yielded diagnostic artifacts attributable to a Paleoindian utilization of the area. Historic resources date between the late 1800s and the 1920s. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 61 known cultural resource sites potentially would be affected by a proposed series compensation station in Siting Area C under Alternative WYCO-B and route variations in Colorado. If a series compensation station were constructed in Siting Area C, the same procedures outlined in Siting Area A under Alternative WYCO-B would be employed.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

Siting Area D – Bell Rock

Affected Environment

A total of 13 cultural resource sites were identified in the Class I inventory conducted for a proposed series compensation station in Siting Area D under Alternative WYCO-D and route variation in Colorado. These sites, broken down by type, consist of 7 prehistoric sites and 6 historic sites. They include 5 prehistoric campsites, 2 prehistoric artifact scatters, 4 historic habitations sites (homesteads and habitation structures), 1 irrigation canal, and 1 early 1900s grave. Nearly all of these sites are of unknown cultural affiliation. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 13 known cultural resource sites potentially would be affected by a proposed series compensation station in Siting Area D under Alternative WYCO-D and route variation in Colorado. If a series compensation station were constructed, the same procedures outlined in Siting Area A under Alternative WYCO-B would be employed.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Siting Area B – Nine Mile Basin

Affected Environment and Environmental Consequences

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

Siting Area C – Maybell

Affected Environment and Environmental Consequences

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

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

Siting Area G – Green River

A total of three cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area G under the COUT BAX alternative routes in Utah. These sites include 1 Fremont artifact scatter, 1 mid-twentieth century artifact scatter, and 1 segment of the U.S. Highway 6. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of three known cultural resource sites potentially would be affected by a proposed series compensation station in Siting Area G under the COUT BAX alternative routes in Utah. If this siting area were constructed, the same procedures outlined in Siting Area A under Alternative WYCO-B would be employed.

Alternative COUT-A and Route Variation (COUT-A-1)

Siting Area F – Roosevelt

Affected Environment

A total of 23 cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area F under Alternative COUT-A and route variation in Utah. These sites, broken down by type, consist of 11 prehistoric sites and 12 historic sites. Site types include 5 prehistoric lithic and artifact scatters, 3 prehistoric campsites, 3 prehistoric habitation sites (rock shelter and wikiups), 5 canals/ditches, 1 road segment, 2 historic artifact scatters, 2 historic habitation sites (homestead and cabin), 1 historic shed structure, and 1 late 1880s military hospital complex. Cultural resources encompass a broad range of cultural and temporal affiliations spanning the Middle Archaic Period to the Historic Period (mid-twentieth century). Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 23 known cultural resource sites potentially would be affected by a proposed series compensation station in Siting Area F under Alternative COUT-A and route variation in Utah. If this siting area were constructed, the same procedures outlined in Siting Area A under Alternative WYCO-B would be employed.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

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

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

Siting Area E – Bonanza

A total of 129 cultural resource sites were identified in the Class I inventory conducted for proposed Siting Area E under Alternative COUT-C and route variations in Utah. These sites, broken down by type, consist of 76 prehistoric sites, 47 historic sites, and 6 multi-component sites. Site types include 50 prehistoric lithic and artifact scatters, 22 prehistoric campsites, 3 lithic procurement areas, 1 prehistoric rock shelter, 26 historic artifact scatters, 7 historic campsites, 5 historic cairns, 4 gilsonite mine-related sites (isolated mines, camps, and a mine complex), 3 historic habitations (tent platform and foundations), 1 windmill, 1 segment of a 1941 GLO road, 3 prehistoric lithic and artifact scatters with historic components (trash and farming/ranching-related structures), 2 prehistoric campsites and historic artifact scatters, and 1 prehistoric storage cist and historic artifact scatter. The majority of the prehistoric sites and prehistoric components are of unknown cultural affiliation. Of the prehistoric sites assigned a cultural affiliation, one yielded diagnostic artifacts attributable to a Paleoindian utilization of the area. Historic resources date between the late 1880s and the 1960s. Cultural resource sites are located in the area classified as the high cultural resource intensity zone, meaning these sites are in the Project APE.

Environmental Consequences

A total of 129 known cultural resource sites potentially would be affected by a proposed series compensation station in Siting Area E under Alternative COUT-C and route variations in Utah. If this siting area were constructed, the same procedures outlined in Siting Area A under Alternative WYCO-B would be employed.

Alternatives COUT-H (Applicant Preferred Alternative) 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 and route variations.

3.2.19 Fire Ecology and Management

3.2.19.1 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.

3.2.19.1.1 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 2009). 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 2011n)
 - Rawlins Field Office
- Northwest Colorado Fire Management Program Fire Management Plan (BLM 2012p)
 - Little Snake and White River Field Offices
 - Browns Park National Wildlife Refuge
- Grand Junction Field Office Fire Management Plan (BLM 2004b)
- 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 2004c)

The following documents provide guidance for interagency fire management coordination and response.

- Northern Utah Annual Operating Plan (BLM et al. 2011)
 - Uinta-Wasatch-Cache National Forest
 - Uintah and Ouray Agency, Bureau of Indian Affairs
 - Utah FFSL
- Moab Interagency Fire Danger Operating and Preparedness Plan (BLM et al. 2012)
 - 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 National Wildlife Refuge
 - 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 may also 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).

3.2.19.2 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 E, Table E-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.

3.2.19.3 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

3.2.19.3.1 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 2011o).

- 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 3-261 presents the total acreages of each fire regime group in the Project area.

TABLE 3-261 FIRE REGIME GROUPS IN THE PROJECT AREA (PERCENT)						
Area	Group I	Group II	Group III	Group IV	Group V	Other¹
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: ¹This 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 I represents areas within the typical range of variation experienced under the reference fire regime, Class II represents a moderate departure from the reference regime (deviating by more than one fire cycle), and Class III represents a major departure (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 3-262 presents the total acreages of each VCC in the Project area.

TABLE 3-262 VEGETATION CONDITION CLASSES IN THE PROJECT AREA (PERCENT)				
Area	Class I	Class II	Class III	Other¹
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: ¹Other 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 3-261 due to mapping differences in the source data, including the Not Calculated category.

VCC in the Project area is shown on Map 3-16. Lands mapped as Class III, where fire regimes have changed to the greatest extent, are concentrated in the lower elevations of the Project area. Large areas mapped as Class III 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 may also 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 I or II, 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 2012 (USFS 2011g, 2012e). 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 2012 burned approximately 2.1 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 I or II; 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 30.7 percent of the total acreage burned from 2000 to 2012 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 3-263 provides information about the acres burned and numbers of fires from 2000 to 2012, as well as the average fire acreage.

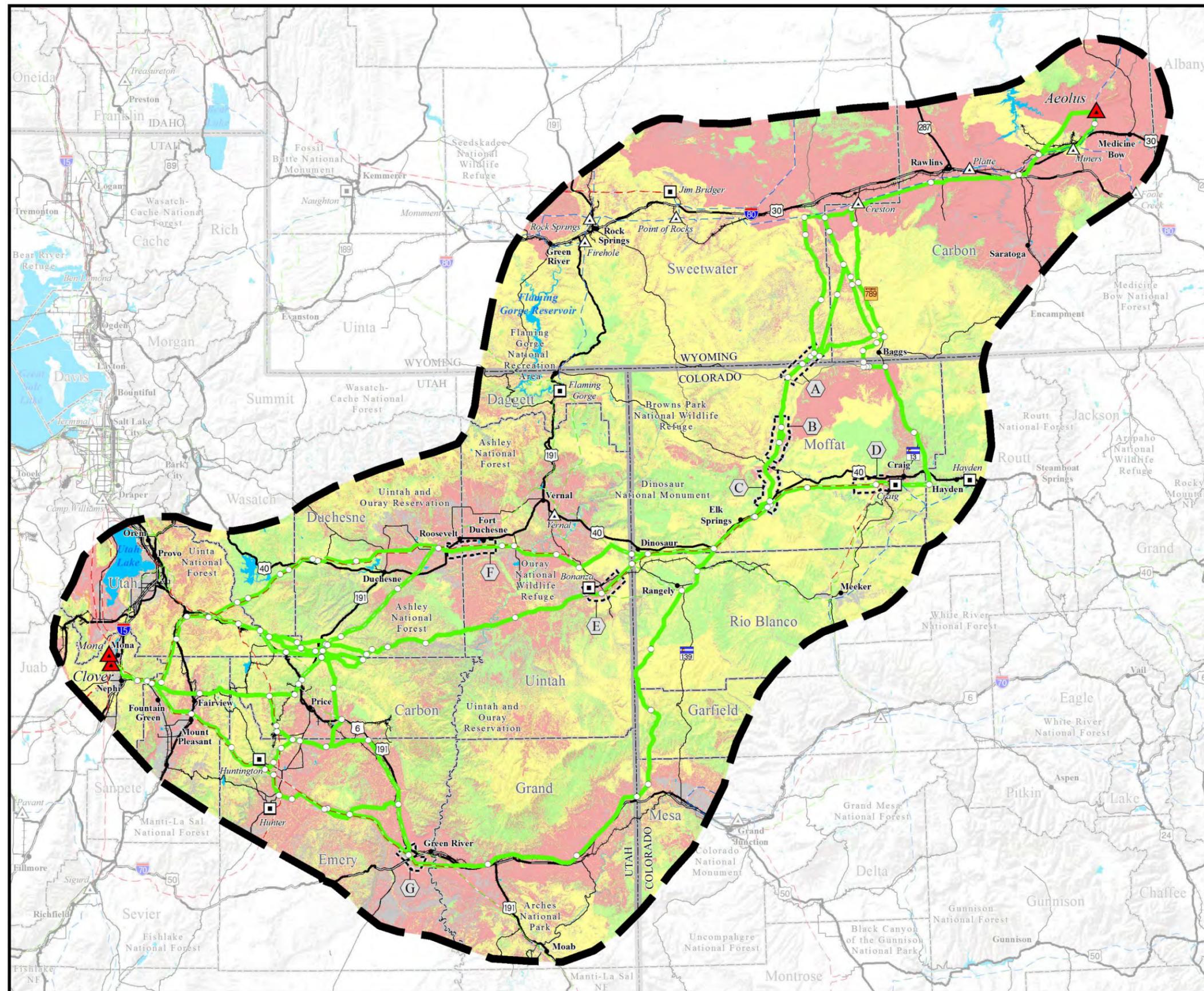
Area	Acres burned from 2000 to 2011	Acres burned in 2012	Acres burned from 2000 to 2012	Number of fires from 2000 to 2012	Average Fire Acreage
Wyoming	1,177	1,244	2,421	18	134.5
Colorado	89,580	14,100	103,680	208	498.5
Utah	256,504	138,782	395,286	149	2,652.9
Project Area	347,261	154,126	501,387	375	1,337.0

Regional Fire Management

Federal land-management agencies are required to prepare and update FMPs for all areas of burnable vegetation. All FMPs for federal lands crossed by the proposed Project were reviewed. FMPs prepared for federal lands in Colorado and Utah, but not Wyoming, classified lands into the following four categories, according to desired fire management objectives:

- A: “Areas where wildland fire is not desired at all.” These may be areas with high resource sensitivity, or vegetation communities that are not fire-adapted.
- B: “Areas where unplanned wildland fire is not desired because of current conditions.” These may be areas with sensitive resources or areas that perhaps burned naturally but now have excessive fuel loads such that an unplanned fire would risk lives or severely damage resources.
- C: “Areas where wildland fire is desired, but there are significant constraints that must be considered for its use.” Fire may benefit these areas as a management tool, but under controlled conditions. Fuels reduction may be required prior to reintroduction of fire.
- D: “Areas where wildland fire is desired, and there are few or no constraints for its use.” Relatively unaltered vegetation communities without lives, property, or sensitive resources at risk, which may benefit from an unmanaged, natural fire regime or from prescribed fire.

Each contiguous area assigned to a single desired objective is designated as a Fire Management Unit (FMU). However, this does not indicate that all areas within any FMU are in a similar condition or require the same fire management. FMPs discuss site-specific variations and resource concerns within individual FMUs, where such information is available. FMPs in Wyoming discuss the desired fire management and values at risk for each FMU, without assigning it to a particular category. Similar classification for fire management purposes has not been conducted on state, private, or other lands crossed by the Project.



Map 3-16
Vegetation Condition Classes

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Vegetation Condition Classes

- | | |
|--|--|
| ■ Class I | ■ Other: |
| ■ Class II | • Agriculture |
| ■ Class III | • Barren |
| | • Snow/Ice |
| | • Sparsely Vegetated |
| | • Urban |
| | • Water |
| | • Not Calculated |

Project Features

- | | |
|--|---|
| Project Area Boundary | Link Node |
| ▲ Substation (Project Terminal) | Series Compensation Station Siting Area |
| — Alternative Route | |

General Reference

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

SOURCES:
Vegetation Condition Classes, LANDFIRE 2012;
Series Compensation Station Siting Areas, Rocky Mountain Power 2013;
City or Town, ESRI 2010;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
National Transportation Atlas Database, USDOT 2008;
Utah Highways and Roads, AGRC 2012; Water Features, ESRI 2008, USGS 2010a;
State and County Boundaries, ESRI 2008

NOTES:
• The alternative routes 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: April 1, 2013
DRAFT EIS: February 2014



3.2.19.4 Study Methodology

Fire is a landscape-scale process, and fire ecology is driven by long-term changes in vegetation and climate. However, the frequency, intensity, and extent of a fire at any given location are highly responsive to site-specific conditions at the time the fire occurs; particularly weather and fuel loads. Although fires historically occurred most frequently as a result of lightning during late summer in the Project area, human-caused ignitions now can start fires at any time of year, in locations where they would not otherwise occur. Available information to support this discussion of impacts and potential mitigation is based on the landscape-scale data presented previously regarding existing conditions, but the unpredictable nature of site-specific impacts related to fire cannot be quantitatively analyzed in most cases. Available data, such as LANDFIRE, are not intended to be used at site-specific detail. However, the miles of each VCC crossed by each alternative is presented as an indicator of overall health of native vegetation with regards to fire ecology. Similarly, fire management categories assigned in BLM and USFS FMPs described the general conditions within each FMU, but site-specific conditions may vary in areas crossed by each alternative, particularly where existing disturbance is already present and contributing to local changes in desired fire management.

All impacts related to fire ecology and management may be considered long-term. The potential for accidental ignitions would likely be highest during the construction phase, but would continue throughout the life of the Project due to maintenance activities, the potential for failure of any components of the Project, and recreational use of the right-of-way. Vegetation changes within and adjacent to the right-of-way would be the greatest during construction and the first several years of recovery following construction, but would likely persist to some degree over the life of the Project. The presence of the transmission line would also affect fire management and suppression for the life of the Project.

Fire was identified as a potential impact to public safety during scoping. Additional issues identified by the BLM and cooperating agencies include the potential risk to firefighters near energized transmission lines, potential constraints on managing wildland fire for land management plan objectives as a vegetation management tool, and the potential for the spread of noxious weeds that may alter fire ecology. However, no quantitative impact analysis needs were identified. This discussion focuses primarily on impacts common to all action alternatives that would be addressed through design features of the Proposed Action for environmental protection and in the Fire Protection Plan of the POD. No selective mitigation measures have been identified to be applied to reduce impacts on fire ecology or management.

3.2.19.5 Results

The construction, operation, and maintenance of the Project would result in both direct and indirect effects on fire ecology and management, which are described in the following sections.

Direct Effects

The construction, operation, and maintenance of the Project would directly increase the risk of fire ignitions in the Project area. Construction activities such as welding, blasting, small-engine use, and blading can all generate sparks that may ignite dry vegetation. Some of these activities would be limited to construction, but others, such as small-engine use, would occur over the life of the Project during routine maintenance and vegetation management. Hazard trees, if allowed to remain in or near the right-of-way, could come into contact with conductors and ignite a fire. Failure of 500kV transmission structures and other components is rare, but could cause a fire ignition if an energized conductor falls and comes into contact with vegetation. This could occur as a result of intentional damage (e.g., vandalism, terrorism), natural disasters, vehicle or aircraft collision, or a design or engineering flaw in a system component.

Vegetation management in the right-of-way during and after construction would affect the potential for fire ignitions to spread and would also affect fire behavior in the right-of-way. In forested areas, removing or reducing the tree canopy would increase temperature and decrease humidity at ground level, thereby reducing fuel moisture and increasing the potential for any accidental ignitions to spread relative to existing conditions. However, vegetation management would also reduce the total volume of fuels in the right-of-way, decreasing fire intensity and severity and providing opportunities for safe and effective fire management actions.

Transmission lines can affect fire suppression, both positively and negatively. The Project would represent a value to be protected during a wildland fire, and may cause fire personnel to be diverted from other suppression objectives when feasible and necessary. Energized transmission lines can be hazardous to firefighters, as the smoke from a fire increases the conductivity of air and can cause arcing from the conductors to the ground. Insulators contaminated with ash, fire retardant, or water may allow some current to travel through the structure, creating an electrocution hazard surrounding the structure. Water from trucks or aircraft also can increase the risk of arcing. Failure of structures or any other components during a fire can cause conductors to fall and create an electrocution risk. This may occur over long distances, for example if an energized conductor falls and comes into contact with a fence wire.

Typically, ground personnel would avoid actively burning areas near energized transmission lines, remaining at a distance at least equal to the height of the structures or greater during adverse conditions. Transmission lines and structures must also be avoided by aircraft, as they pose a collision hazard during periods of poor visibility and/or when structures are placed on elevated terrain. Transmission lines may be de-energized during a fire, if necessary for firefighter safety or system reliability. This would typically be coordinated between the Operator and the Incident Commander of a fire. Once de-energized, a transmission line would not be a significant hazard to ground crews but would remain a potential hazard to air support.

The Project may directly benefit fire suppression efforts in forested vegetation communities, where vegetation clearing in the right-of-way provides a fuel break. Table 3-264 provides an estimate of the miles of each alternative where vegetation clearing would occur, based on the inventory of vegetation communities. The remainder of the Project would not receive intensive vegetation management within the right-of-way, and would not provide a substantial fuel break should a fire occur near the Project.

TABLE 3-264 ALTERNATIVE ROUTE COMPARISON FOR FIRE MANAGEMENT						
Alternative Route	Total Miles	Vegetation Communities that May Require Right-of-way Clearing and Slash Disposal (Miles)				
		Aspen	Montane Forest	Mountain Shrub	Pinyon-juniper	Riparian
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)						
Alternative WYCO-B and Route Variations						
WYCO-B (Applicant Preferred Alternative)	10.6	0.0	0.0	0.0	8.5	2.1
Wyoming	2.5	0.0	0.0	0.0	0.4	2.1
Colorado	8.1	0.0	0.0	0.0	8.1	0.0
WYCO-B-1	10.6	0.0	0.0	0.0	8.5	2.1
Wyoming	2.5	0.0	0.0	0.0	0.4	2.1
Colorado	8.1	0.0	0.0	0.0	8.1	0.0

TABLE 3-264 ALTERNATIVE ROUTE COMPARISON FOR FIRE MANAGEMENT						
Alternative Route	Total Miles	Vegetation Communities that May Require Right-of-way Clearing and Slash Disposal (Miles)				
		Aspen	Montane Forest	Mountain Shrub	Pinyon-juniper	Riparian
WYCO-B-2 (Agency Preferred Alternative)	10.4	0.0	0.0	0.0	8.3	2.1
<i>Wyoming</i>	2.5	0.0	0.0	0.0	0.4	2.1
<i>Colorado</i>	7.9	0.0	0.0	0.0	7.9	0.0
WYCO-B-3	10.2	0.0	0.0	0.0	8.1	2.1
<i>Wyoming</i>	2.5	0.0	0.0	0.0	0.4	2.1
<i>Colorado</i>	7.7	0.0	0.0	0.0	7.7	0.0
Alternative WYCO-C and Route Variations						
WYCO-C	10.0	0.0	0.0	0.0	8.4	1.6
<i>Wyoming</i>	1.9	0.0	0.0	0.0	0.3	1.6
<i>Colorado</i>	8.1	0.0	0.0	0.0	8.1	0.0
WYCO-C-1	10.0	0.0	0.0	0.0	8.4	1.6
<i>Wyoming</i>	1.9	0.0	0.0	0.0	0.3	1.6
<i>Colorado</i>	8.1	0.0	0.0	0.0	8.1	0.0
WYCO-C-2	9.8	0.0	0.0	0.0	8.2	1.6
<i>Wyoming</i>	1.9	0.0	0.0	0.0	0.3	1.6
<i>Colorado</i>	7.9	0.0	0.0	0.0	7.9	0.0
WYCO-C-3	9.6	0.0	0.0	0.0	8.0	1.6
<i>Wyoming</i>	1.9	0.0	0.0	0.0	0.3	1.6
<i>Colorado</i>	7.7	0.0	0.0	0.0	7.7	0.0
Alternative WYCO-D and Route Variation						
WYCO-D	9.4	0.0	0.0	0.2	5.9	3.3
<i>Wyoming</i>	2.7	0.0	0.0	0.0	0.4	2.3
<i>Colorado</i>	6.7	0.0	0.0	0.2	5.5	1.0
WYCO-D-1	9.0	0.0	0.0	0.2	5.5	3.3
<i>Wyoming</i>	2.7	0.0	0.0	0.0	0.4	2.3
<i>Colorado</i>	6.3	0.0	0.0	0.2	5.1	1.0
WYCO-F and Route Variations						
WYCO-F	10.4	0.0	0.0	0.0	8.4	2.0
<i>Wyoming</i>	2.3	0.0	0.0	0.0	0.3	2.0
<i>Colorado</i>	8.1	0.0	0.0	0.0	8.1	0.0
WYCO-F-1	10.4	0.0	0.0	0.0	8.4	2.0
<i>Wyoming</i>	2.3	0.0	0.0	0.0	0.3	2.0
<i>Colorado</i>	8.1	0.0	0.0	0.0	8.1	0.0
WYCO-F-2	10.2	0.0	0.0	0.0	8.2	2.0
<i>Wyoming</i>	2.3	0.0	0.0	0.0	0.3	2.0
<i>Colorado</i>	7.9	0.0	0.0	0.0	7.9	0.0
WYCO-F-3	10.0	0.0	0.0	0.0	8.0	2.0
<i>Wyoming</i>	2.3	0.0	0.0	0.0	0.3	2.0
<i>Colorado</i>	7.7	0.0	0.0	0.0	7.7	0.0
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)						
COUT BAX-B	72.0	8.2	7.5	12.5	42.5	1.3
<i>Colorado</i>	28.4	1.1	0.2	5.0	22.0	0.1
<i>Utah</i>	43.6	7.1	7.3	7.5	20.5	1.2
COUT BAX-C	74.2	8.2	7.5	12.5	44.2	1.8
<i>Colorado</i>	28.4	1.1	0.2	5.0	22.0	0.1
<i>Utah</i>	45.8	7.1	7.3	7.5	22.2	1.7
COUT BAX-E	70.9	10.5	2.8	15.6	40.3	1.7
<i>Colorado</i>	28.4	1.1	0.2	5.0	22.0	0.1
<i>Utah</i>	42.5	9.4	2.6	10.6	18.3	1.6

TABLE 3-264 ALTERNATIVE ROUTE COMPARISON FOR FIRE MANAGEMENT						
Alternative Route	Total Miles	Vegetation Communities that May Require Right-of-way Clearing and Slash Disposal (Miles)				
		Aspen	Montane Forest	Mountain Shrub	Pinyon-juniper	Riparian
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)						
COUT-A and Route Variation						
COUT-A	59.9	6.4	3.4	17.9	28.2	4.0
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	59.4	6.4	3.4	17.9	27.7	4.0
COUT-A-1	61.3	7.0	3.8	17.9	28.2	4.4
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	60.8	7.0	3.8	17.9	27.7	4.4
COUT-B and Route Variations						
COUT-B	67.3	3.5	4.1	20.5	36.1	3.1
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	66.8	3.5	4.1	20.5	35.6	3.1
COUT-B-1	70.4	4.7	8.1	21.6	33.1	2.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	69.9	4.7	8.1	21.6	32.6	2.9
COUT-B-2	71.8	6.5	6.1	22.8	33.5	2.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	71.3	6.5	6.1	22.8	33.0	2.9
COUT-B-3	73.9	10.1	5.2	22.1	33.6	2.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	73.4	10.1	5.2	22.1	33.1	2.9
COUT-B-4	71.6	7.4	6.1	21.8	33.4	2.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	71.1	7.4	6.1	21.8	32.9	2.9
COUT-B-5	74.1	9.2	5.2	23.1	33.7	2.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	73.6	9.2	5.2	23.1	33.2	2.9
COUT-C and Route Variations						
COUT-C	70.2	8.3	2.4	20.9	37.5	1.1
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	69.7	8.3	2.4	20.9	37.0	1.1
COUT-C-1	74.4	7.6	11.3	21.2	33.4	0.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	73.9	7.6	11.3	21.2	32.9	0.9
COUT-C-2	75.8	9.4	9.3	22.4	33.8	0.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	75.3	9.4	9.3	22.4	33.3	0.9
COUT-C-3 (Agency Preferred Alternative)	78.1	12.1	8.4	22.7	34.0	0.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	77.6	12.1	8.4	22.7	33.5	0.9
COUT-C-4	74.2	8.5	6.3	22.0	36.5	0.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	73.7	8.5	6.3	22.0	36.0	0.9
COUT-C-5	76.5	11.2	5.4	22.3	36.7	0.9
Colorado	0.5	0.0	0.0	0.0	0.5	0.0
Utah	76.0	11.2	5.4	22.3	36.2	0.9

TABLE 3-264 ALTERNATIVE ROUTE COMPARISON FOR FIRE MANAGEMENT						
Alternative Route	Total Miles	Vegetation Communities that May Require Right-of-way Clearing and Slash Disposal (Miles)				
		Aspen	Montane Forest	Mountain Shrub	Pinyon-juniper	Riparian
COUT-H and COUT-I						
COUT-H (Applicant Preferred Alternative)	66.3	16.1	6.6	11.8	31.2	0.6
<i>Colorado</i>	0.5	0.0	0.0	0.0	0.5	0.0
<i>Utah</i>	65.8	16.1	6.6	11.8	30.7	0.6
COUT-I	68.1	14.0	9.6	9.6	34.3	0.6
<i>Colorado</i>	0.5	0.0	0.0	0.0	0.5	0.0
<i>Utah</i>	67.6	14.0	9.6	9.6	33.8	0.6

The BLM’s WO-IM 2011-138 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management) includes the creation of treated strips (mowed or otherwise thinned) as a potential best management practice to aid in fire suppression in greater sage-grouse habitat (BLM 2011p). Although sagebrush would not typically be cleared in the Project right-of-way, the presence of an access road and the lowered habitat suitability for greater sage-grouse near transmission lines may allow the right-of-way to serve as an appropriate place to construct a fuel break in the event of a fire near the Project. This could provide a benefit to greater sage-grouse management by facilitating fire suppression, reducing the acres of habitat burned, and limiting vegetation clearing in suitable habitat, thus partially offsetting other negative effects of the Project on the species. Other effects on greater sage-grouse are discussed in Section 3.2.8.

The Project may affect fire management planning by adding constraints to the location or timing of prescribed burns for vegetation treatments, or by decreasing the suitability of an area for managing wildland fire for land-management plan objectives where existing linear utilities are not present. Miles of existing linear utilities adjacent to each alternative route are listed in Table 3-165 (Parallel Linear Facilities, WYCO Alternative Routes), Table 3-169 (Parallel Linear Facilities for the COUT BAX alternative routes), and Table 3-173 (Parallel Linear Facilities for the COUT alternative routes). The remainder of the Project would have the potential to add constraints to wildland fire management.

In some cases, prescribed fire or managing wildland fire for land-management plan objectives near transmission lines may be specifically restricted in planning documents. All USFS FMPs in the Project area require that wildland fires be suppressed when utility corridors are threatened, and prescribed fires would not be permitted in utility corridors. Miles of USFS lands crossed by each alternative route and the miles of new utility corridor that would be created by the Project, where full suppression is required by FMPs, are listed in Table 3-265. Table 3-265 includes private lands within the boundaries of each National Forest, as fire suppression would often be conducted by the USFS in or near those areas. The total area of each National Forest affected (i.e., the portion of a utility corridor threatened by a fire) would be determined for each fire by the Incident Commander. However, prescribed fire or wildland fire management for land management plan objectives may take place in other jurisdictions if safety concerns can be adequately addressed. This may include greater restrictions on the weather conditions when a prescribed fire takes place, or fuels treatments within the right-of-way prior to a prescribed fire. In some cases, planned or unplanned fires that take place outside the normal summer fire season may not benefit native vegetation that is poorly adapted to cool-season fires (Keeley 2005).

TABLE 3-265 ALTERNATIVE ROUTE COMPARISON FOR THE CREATION OF NEW UTILITY CORRIDORS IN NATIONAL FORESTS						
Alternative Route	Ashley National Forest		Manti-La Sal National Forest		Uinta National Forest	
	Total Miles	Miles of New Corridor	Total Miles	Miles of New Corridor	Total Miles	Miles of New Corridor
Alternatives COUT BAX						
COUT BAX-B	19.97	0.00	19.97	13.67	0.72	0.72
COUT BAX-C	19.97	0.00	19.97	13.67	0.72	0.72
COUT BAX-E	11.32	0.00	11.32	11.32	0.72	0.72
Alternative COUT-A and Route Variation						
COUT-A	–	–	1.63	1.63	19.05	0.72
COUT-A-1	–	–	1.63	1.63	18.59	0.96
Alternative COUT-B and Route Variations						
COUT-B	12.01	12.01	1.63	1.63	9.64	0.72
COUT-B-1	12.89	12.89	1.63	1.63	10.77	1.84
COUT-B-2	12.46	12.46	1.63	1.63	10.77	1.84
COUT-B-3	12.01	12.01	1.63	1.63	9.64	0.72
COUT-B-4	12.46	12.46	1.63	1.63	10.77	1.84
COUT-B-5	12.01	12.01	1.63	1.63	9.64	0.72
Alternative COUT-C and Route Variations						
COUT-C	–	–	1.63	1.63	9.64	0.72
COUT-C-1	0.88	0.88	1.63	1.63	10.77	1.84
COUT-C-2	0.45	0.45	1.63	1.63	10.77	1.84
COUT-C-3 (Agency Preferred Alternative)	0.00	0.00	1.63	1.63	9.64	0.72
COUT-C-4	0.45	0.45	1.63	1.63	10.77	1.84
COUT-C-5	0.00	0.00	1.63	1.63	9.64	0.72
Alternatives COUT-H and COUT-I						
COUT-H (Applicant Preferred Alternative)	–	–	11.32	11.32	0.72	0.72
COUT-I	–	–	19.97	13.67	0.72	0.72
NOTE: New utility corridors are defined as areas where no existing utility corridors are within 2,000 feet of the alternative route.						

Indirect Effects

Ground disturbance associated with the Project may favor the spread of invasive or native plant species that are disturbance-tolerant and fire-prone. This potentially would increase the risk of fire within those areas, or increase the intensity of any naturally occurring fires. Cheatgrass is the primary invasive plant responsible for changing fire regimes in the Project area (Whisenant 1990b). Effects related to changes in vegetation in and near the right-of-way would be seen as increases in the VCC, whether fire frequency is increased through the presence of invasive plants, or decreased below a natural level through constraints on fire management.

Slash (branches and other small woody debris less than 3 inches in diameter) and coarse woody debris (branches and downed trees more than 3 inches in diameter) created during right-of-way clearing and maintenance contribute to ground fuels. Fire intensity within the right-of-way may be increased as a result, and piled slash can create long-lasting, hot fires that may damage and sterilize soils on a small

scale. High loads of coarse woody debris may also create obstacles to fire suppression personnel and vehicles. However, slash and coarse woody debris can be important for nutrient cycling, soils stabilization, and wildlife habitat when properly managed, and land-management agency decisions would balance these benefits against the fire risk. Standards for management of slash are often determined on a site-specific basis, to fall within a range appropriate for each vegetation community (typically measured in tons of slash per acre). The final POD would present a detailed plan for slash and coarse woody debris disposal, developed to meet standards required by the appropriate land-management agency for safe fuel loads and potential benefits to wildlife and soils. Table 3-264 provides an estimate of the miles of each alternative where slash disposal may require consideration in the POD, based on the inventory of vegetation communities.

New access roads, where not reclaimed or access-restricted, may be used by recreational traffic. Vehicles may ignite fires if parked in dry vegetation, and recreational activities within the right-of-way such as target shooting, smoking, camping, or cooking fires may result in accidental fire ignitions.

Mitigation Planning and Effectiveness

Design Features 2, 5, 14, 15, 16, 18, 25, 26, 27, 29, and 30 (Table 2-8) are applicable to fire ecology and management, and are described in this section. These measures will be applied Project-wide, as appropriate, to reduce the risk of accidental ignitions during construction and operation of the Project, and to reduce the risk that invasive plants will contribute to an unnatural fire regime as a result of the Project.

- **Design Feature 2 (surface recontouring and reclamation).** Areas subject to ground disturbance will be recontoured and reclaimed as required by the landowner or land-management agency. This will generally include reseeding with a seed mix (approved by the BLM or USFS) appropriate to the vegetation community in which the disturbance has occurred. This design feature will minimize the temporal scope of disturbance and decrease the likelihood that a disturbed area will be colonized by invasive species, and will increase the probability that the recovered vegetation community will not be unnaturally fire-prone.
- **Design Feature 5 (creation of a noxious weed management plan).** A BLM, USFS, and county weed management officer-approved noxious weed management plan would be developed and incorporated into the POD. This plan will include specific measures to be taken to reduce the spread of noxious weed invasion associated with Project construction activities. Implementation of this design feature will minimize spread of noxious weed species in the Project area and the associated negative ecological effects of invasive species such as increased wildfire risk and the competitive exclusion of native plant species.
- **Design Feature 14 (creation of a Fire Protection Plan).** A BLM-, USFS-, and state-approved Fire Protection Plan would be developed. The Fire Protection Plan would address workplace safety procedures, worker training, emergency fire suppression, and would list the appropriate emergency contact for each jurisdiction.
- **Design Feature 15 (line patrols).** The Project would be patrolled regularly, in part to inspect the right-of-way for hazard trees, damage to any component of the Project, and other potentially unsafe conditions that could result in a fire.
- **Design Feature 16 (removal of slash).** Slash would be removed from the right-of-way or otherwise disposed of in accordance with requirements of the land-management agency or landowner, but may be left in place where desired at levels that would not create a hazardous fuel load.

- **Design Feature 18 (overland access).** Overland access may be used to reduce ground disturbance and the potential for the introduction of invasive plants, under conditions where a fire hazard would not occur.
- **Design Feature 25 (line marking).** Conductors, shield wires, and structures would be marked with high-visibility devices, where needed, to reduce the collision risk for aircraft.
- **Design Feature 26 (vehicle access restriction).** All construction vehicle movement will 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 will minimize disturbance to vegetation communities from excess overland travel and the associated potential spread of noxious weeds and increase in risk of wildfire.
- **Design Feature 27 (construction activity access restriction).** All Project-related construction activities would be limited to within a predetermined spatial extent. This design feature will minimize disturbance to vegetation communities from construction activities and the associated potential increased spread of noxious weeds and wildfire risk.
- **Design Feature 29 (air quality and trash burning).** Open trash burning would typically not take place, unless specifically permitted by appropriate authorities. This design feature will reduce the risk of accidental ignitions.
- **Design Feature 30 (hazardous materials restrictions).** Hazardous materials would be totally contained and removed to a disposal facility, and not drained into the ground, streams, or drainages. This design feature would reduce the risk that flammable hazardous materials would be stored or treated in an unsafe manner.

3.2.19.5.5 Series Compensation Stations for the 500-kilovolt Transmission Line

Alternative WYCO-B (Applicant Preferred Alternative) and Route Variations (WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3)

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. The majority of this area is classified as VCC II, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Powder Wash Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Siting Area B – Nine Mile Basin

Affected Environment

Siting Area B is located where Alternative WYCO-B and route variations diverge in Nine Mile Basin in Colorado. The Nine Mile Basin Series Compensation Station Siting Area is located in sagebrush, grassland, and pinyon-juniper vegetation communities. The majority of this area is classified as VCC II, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Nine Mile Basin Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Siting Area C – Maybell

Affected Environment

In Colorado, Siting Area C would be located where Alternative WYCO-B and route variations diverge. Vegetation communities in this siting area include riparian, agricultural, big sagebrush, shrub/shrub steppe, barren/sparsely vegetated, grassland, and pinyon-juniper woodlands. The majority of this area is classified as VCC II, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Maybell Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Alternative WYCO-C and Route Variations (WYCO-C-1, WYCO-C-2, and WYCO-C-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

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

Alternative WYCO-D and Route Variation (WYCO-D-1)

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 just south of U.S. Highway 40, west of Craig. The majority of this area is

classified as VCC II, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Bell Rock Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Alternative WYCO-F and Route Variations (WYCO-F-1, WYCO-F-2, and WYCO-F-3)

Siting Area A – Powder Wash

Affected Environment and Environmental Consequences

Alternative WYCO-F and route variations 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 and route variations 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 and route variations 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

In Utah, 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. Vegetation is predominantly barren or shrub/shrub-steppe, interspersed with pinyon juniper woodlands. The majority of this area is classified as VCC III, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Green River Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Alternative COUT-A and Route Variation (COUT-A-1)

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. Vegetation communities are predominantly agricultural, barren, sagebrush and shrub/shrub-steppe. The majority of this area is classified as VCC III or is agricultural, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Roosevelt Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Alternative COUT-B and Route Variations (COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5)

Siting Area F – Roosevelt

Affected Environment and Environmental Consequences

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

Alternative COUT-C and Route Variations (COUT-C-1, COUT-C-2, COUT-C-3 [Agency Preferred Alternative], COUT-C-4, and COUT-C-5)

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. Vegetation communities are primarily sagebrush and shrub/shrub-steppe. The majority of this area is classified as VCC III, and no historic fires that have occurred since 2000 are crossed by this portion of the Project.

Environmental Consequences

Potential impacts on fire management and ecology from the Bonanza Series Compensation Station would be identical to construction and operation of the Project. Impacts on fire ecology would be proportional to the increased ground disturbance resulting from the series compensation station. Impacts on fire management would not increase as a result of the series compensation station, as fire management planning would be affected similarly due to the presence of the Project.

Alternative COUT-H (Applicant Preferred Alternative)

Siting Area E – Bonanza

Affected Environment and Environmental Consequences

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

3.2.20 Social and Economic Conditions

Alternative routes for the Project are located in 17 counties in southwestern Wyoming, northwestern Colorado, and central and eastern Utah. Comprising 17,070 square miles, these counties are identified as the study area for the socioeconomic analysis and are included in the regional setting, affected environment, and environmental consequences, unless noted otherwise.

3.2.20.1 Introduction and Regulatory Framework

NEPA or CEQ regulations do not provide specific thresholds of significance for socioeconomic impact assessment, because significance is contextual in nature and varies with the setting of the Proposed Action (40 CFR 1508.27(a)).

The BLM, as the lead agency, requires the utilization and evaluation of social science in the preparation of informed, sustainable land use planning decisions. The FLPMA requires the BLM to integrate physical, biological, economic, and other sciences in developing land-use plans (43 U.S.C. 1712(c)(2)). FLPMA regulations 43 CFR 1610.4-3 and 1610.4-6 also require the BLM to analyze social, economic, and institutional information. In addition, the NEPA requires federal agencies to “insure the integrated use of the natural and social sciences . . . in planning and decision making” (42 U.S.C. 4332(2)(A)).

The BLM is required to manage public lands on the basis of multiple use and sustained yield, and to meet the needs of present and future generations. As the human population continues to increase and social values evolve, resource conflicts are likely to increase. The American public is increasingly aware of the importance of the public lands to its well-being and is demanding a larger voice in resource management decisions. Given these realities, the planning process can represent a constant balancing of competing needs, interests, and values. The effective use of social science can be critical to understanding and reconciling these differing perspectives.

The BLM Land Use Planning Handbook (BLM Handbook H-1601-1) states that social science information can include the economic, political, cultural, and social structure of communities, regions, and the nation as a whole; social values, beliefs, and attitudes; how people interact with the landscape; and sense-of-place issues. The social sciences integrate a wide variety of disciplines, generally including economics, sociology, demography, anthropology, archaeology, political science, geography, history, and landscape architecture. Though the information appropriate to a given analysis depends on the specific issues being assessed, the social science information usually important to resource planning decisions can be grouped in the following categories (BLM 2005a):

- Demography and social indicators
- Social organization and institutions
- Attitudes and values
- Human geography
- Economic value
- Employment, income, and subsistence
- Public finance and government services
- Environmental justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each federal agency to make the achievement of environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. The Executive Order further demands that the agencies conduct their programs and activities in a manner that does not exclude persons from participation because of their race, color, or national origin.

3.2.20.2 Issues Identified for Analysis

Issues raised by the public and agencies during Project scoping and EIS preparation related to potentially significant effects on social and economic conditions included the potential effects on personal property values and regional economic development associated with the construction activity and operations of the transmission line. These issues are further described in this section.

3.2.20.2.1 Property Uses and Values

Whenever land uses change, concerns are often raised regarding any potential effects on property values. In general, impacts on property values are influenced by a number of interplaying factors, including (Pitts and Jackson 2007):

- Proximity of residential properties to transmission line structures
- Type and size of high-voltage transmission line structures
- Appearance of easement landscaping
- Surrounding topography

There are potential impacts on property values for residences and private property in communities and areas along the alternative routes.

3.2.20.2.2 Construction Contribution to Jobs and Income

Transmission line construction activity will expand regional economic development through increased employment and income in the region. As construction workers spend their money in the local area, revenues would likely increase for local businesses (e.g., hotels, restaurants, gas stations, and grocery stores), supporting jobs, and incomes for these businesses and their employees.

3.2.20.2.3 Construction Workforce Effects on Housing and Public Services

Transmission line routes may incur impacts from construction workers temporarily residing in the communities along the transmission line routes. Socioeconomic resources potentially affected include the availability of housing and accommodations as well as public and social services to accommodate the temporary workers.

3.2.20.2.4 Property Tax Base

The transmission line would enlarge the property tax base in counties where the line would cross. Additional property taxes would contribute to county government tax receipts, funding public services and infrastructure projects.

3.2.20.2.5 Recreation and Tourism Values to Local Communities

The development and operation of the transmission line could diminish the natural appearance and the undeveloped character of recreation areas, which could have detrimental effects on recreation and other non-market values.⁷ Areas which could be affected by the alternative routes include Argyle Canyon, which is an important recreation area for hunters, ATV riders, and rock explorers; and Strawberry River Valley, which is a favorite destination for sportsmen, hikers, bird watchers, and picnickers. Visitors who come from outside of a region spend their money locally, helping to support jobs and income in these regions. If visitation were to decrease due to the presence of the transmission line, this could potentially affect the local economy.

3.2.20.2.6 Future Development of Oil and Gas Resources

The location of the development of new oil and gas wells would be restricted by the right-of-way, which may decrease oil and gas investment in certain locations. In turn, this may affect the local economy.

3.2.20.2.7 Impacts on Agricultural Production and Activities

Rangeland and cropland could be disturbed on private lands and BLM and USFS grazing allotments. Grazing leases on USFS- or BLM-administered lands could be affected by the right-of-way, perhaps requiring modifications to the lease stipulations and locations. Potential temporary impacts within the right-of-way could include crop damage (depending on the time of year for construction across specific fields), soil disturbance, and potential loss of production for a temporary period as a result of construction activities and the transport of construction equipment and vehicles that restrict or prevent the planting of lands within or adjacent to the right-of-way. Typically, after construction is complete, landowners would be able to resume farming activities around the transmission line structures.

3.2.20.2.8 Impacts on Environmental Justice Communities

The EPA defines a community with potential environmental justice populations as one that has a higher proportion or minority of low-income populations than does an identified reference community (EPA 1994). An environmental justice assessment requires an analysis of whether low income or poverty populations would be disproportionately and adversely affected by a proposed project. If potential environmental justice populations of concern are identified as residing in proximity to the transmission line routes, it would be necessary to identify any impacts of the proposed Project as well as to examine the spatial distribution of any impact areas to determine if these impacts are likely to fall disproportionately on the minority populations. Disproportionate impacts on environmental justice populations could include impacts on traffic, air quality, visual resources, cultural resources, property values, and agricultural land uses.

3.2.20.3 Regional Setting

The regional setting describes the demographic and socioeconomic context of the study area, including:

⁷Nonmarket environmental values (or simply “nonmarket values”) reflect the benefits individuals attribute to experiences of the environment, uses of natural resources, or the existence of particular ecological conditions that do not involve market transactions, and therefore lack prices (BLM 2013d).

- Regional summary descriptions
- Demographic characteristics, including ethnicity, age, income, historic trends, and projections
- Transportation
- Economic characteristics, including labor force, unemployment, employment trends, average earnings, and assessment of major economic activities within the study area
- Local resources, including property valuation and taxation, housing and construction, schools, and emergency services
- Environmental justice populations

Additional demographic and socioeconomic characteristics are presented in the Gateway South Socioeconomic Baseline Assessment.

The study area encompasses 61,571 square miles. These 17 counties have been aggregated into five larger, geographically contiguous regions (study area regions) based on similarities in social and economic indicators, such as income and population density (Table 3-266). For instance, Carbon and Sweetwater counties (Wyoming) both have low population densities of three persons per square mile and a larger share of investment income as percentage of personal income.⁸ These indicators are similar to those of Moffat County (Colorado), which also has a relatively low population density and similar characteristics in income. These study area regions are illustrated on Figure 3-1. This section will provide a discussion of the socioeconomic characteristics of the study area, including the study area regions identified above.

Study Area Region	Counties
Southwestern Wyoming Region and Moffat County, Colorado	Sweetwater and Carbon counties in Wyoming, and Moffat County in Colorado
Northwestern Colorado Region	Routt, Rio Blanco, Garfield, and Mesa counties in Colorado
Eastern Utah Region	Daggett, Duchesne, Uintah, and Grand counties in Utah
Wasatch Front Region	Utah and Wasatch counties in Utah
Central Utah Region	Carbon, Sanpete, Juab, and Emery counties in Utah

⁸Personal income comprises three general categories of income: investment, transfer payments, and labor earnings.

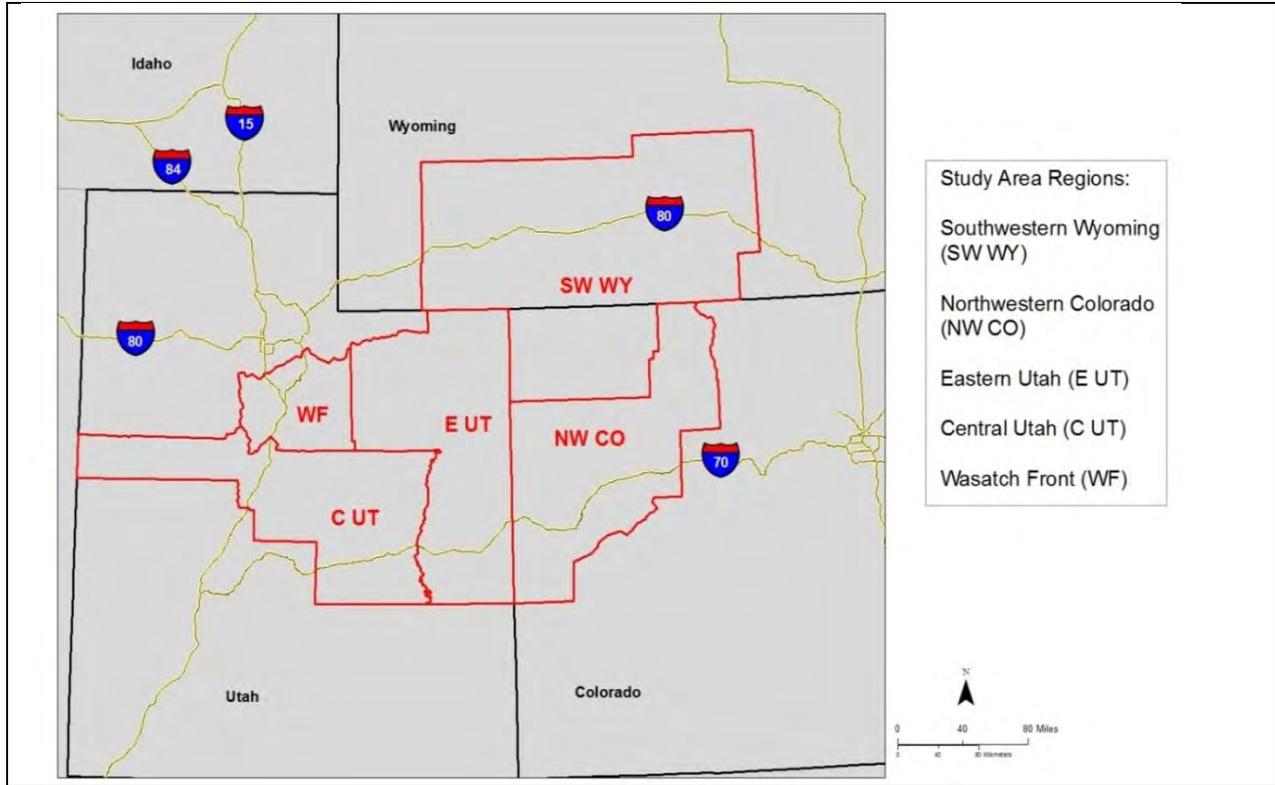


Figure 3-1 Energy Gateway South Transmission Line Study Area Regions

3.2.20.3.1 Geographic and Regional Overview

Geographic Characteristics

The study area includes a wide spectrum of geographic characteristics (Table 3-267). The Wasatch Front Region, containing the Utah cities of Provo and Orem, is the most populous region, followed by the Northwestern Colorado Region. The Northwestern Colorado Region is primarily rural but contains the larger population centers of Grand Junction and Glenwood Springs. The Central Utah and Southwestern Wyoming and Moffat County, Colorado regions are all characterized by low population densities, and are generally rural in nature.

TABLE 3-267 GEOGRAPHIC CHARACTERISTICS OF STUDY AREA REGIONS				
Area	Land Area (million acres)	Land Area (square miles)	Population (2010 census)	Persons/Square Mile (2010 census)
Region				
Southwestern Wyoming and Moffat County, Colorado	14.8	23,206	73,486	3.17
Northwestern Colorado	7.6	11,887	233,287	19.62
Eastern Utah	7.7	12,172	61,479	5.05
Wasatch Front	7.0	10,955	540,094	49.30
Central Utah	7.0	10,965	70,447	6.42
Total study area	44.1	69,185	978,793	14.15

Area	Land Area (million acres)	Land Area (square miles)	Population (2010 census)	Persons/Square Mile (2010 census)
State				
Wyoming	62.0	96,820	563,626	5.82
Colorado	66.3	103,644	5,029,196	48.52
Utah	52.5	82,102	2,763,885	33.66
Nation	2,262.7	3,535,451	308,745,538	87.33
SOURCE: U.S. Census Bureau 2012a				

Land ownership patterns for each of the study area regions are summarized in Table 3-268. Overall, the majority of land within the study area is federally owned. The Wasatch Front Region is approximately evenly divided between federal and private/local government lands. By contrast, the Northwestern Colorado Region has a higher percentage of private/local government ownership (25 percent) and less land in federal ownership (44 percent). The Eastern Utah Region has the highest proportion of American Indian Reservation lands (13 percent), comprising the Uintah and Ouray Indian Reservation, and also has the highest portion of federal lands (61 percent).

Region	Federal	State	Private/ Local Government	American Indian Reservation
Southwestern Wyoming and Moffat County, CO	54.1	27.9	3.8	Not applicable
Northwestern Colorado	43.9	31.3	24.8	Not applicable
Eastern Utah	60.9	10.2	15.8	13.1
Wasatch Front	47.7	7.7	44.5	0.2
Central Utah	49.2	23.6	26.7	0.5
Total study area	255.8	100.7	115.6	13.8
SOURCES: Colorado Ownership Management and Protection Project 2009; Fisher 2009; State of Utah 2012c; U.S. Department of the Interior 2009; Ward 2000; Young 2004				

3.2.20.3.2 Population Centers

Table 3-269 identifies the three largest population centers for each of the five study area regions. Populous cities in the study area include Provo and Orem, Utah, both in the Wasatch Front Region; and Grand Junction, Colorado, in the Northwestern Colorado Region. Note that the most populous city of Price, within the Central Utah Region, is quite small compared to those of other regions.

The largest growth over the period occurred in the town of Lehi in Utah County, Utah, which has experienced almost 150 percent increase in population between 2000 and 2010. Lehi is part of the Provo-Orem Metropolitan Statistical Area.

TABLE 3-269			
POPULATION CENTERS IN THE STUDY AREA REGIONS			
Most Populous Cities in Project Area	Census 2000	Census 2010	Change 2000 to 2010 (Percent)
Southwestern Wyoming and Moffat County, Colorado			
Rock Springs, Wyoming	18,708	23,036	23.1
Green River, Wyoming	11,808	12,515	6.0
Craig, Colorado	9,189	9,464	3.0
Northwestern Colorado			
Grand Junction	41,986	58,566	39.5
Clifton	Not applicable	19,889	Not applicable
Fruita	6,478	12,646	95.2
Steamboat Springs	9,815	12,088	23.2
Eastern Utah			
Vernal	7,714	9,089	17.8
Moab	4,779	5,046	5.6
Roosevelt	4,299	6,046	40.6
Wasatch			
Provo	105,166	112,488	7.0
Orem	84,324	88,328	4.8
Lehi	19,028	47,407	149.1
Central Utah			
Price	8,402	8,715	3.7
Ephraim	4,505	6,135	36.2
SOURCE: U.S. Census Bureau 2012b			

3.2.20.3.3 Regional Summaries

County profiles are provided for each of the counties within the study area regions to provide a brief introduction of the economic conditions, major industries in each county, and where possible, a brief history of the county. The county profiles presented in this section are based on information provided by the U.S. Department of Commerce; the National Association of Counties; and various state and county government websites.

Southwestern Wyoming and Moffat County, Colorado Region

The Southwestern Wyoming Region consists of the counties of Sweetwater and Carbon in Wyoming, and Moffat in Colorado.

Sweetwater County was incorporated in 1867 (National Association of Counties 2009). The largest county in Wyoming in land acres, Sweetwater is larger than six states and is the eighth largest county nationwide. In 2010, agriculture, forestry, and mining (including oil and gas development and extraction) were the largest of 13 major sectors. Other large industries in Sweetwater County are government retail trade, and educational services, health care, and social assistance (U.S. Census Bureau 2012c).

Carbon County was officially established in 1868 in the Dakota Territory. Economic activity has historically included ranching, mining, and railroad activity. While agriculture still accounts for a portion of the county's economy, in 2010, educational services and health care and social assistance, retail trade, and public administration comprised the three largest sectors in the county (U.S. Census Bureau 2012c).

Moffat County was created out of the western portion of Routt County, Colorado, in 1911. It is located in the northwest corner of Colorado and lies midway between Denver and Salt Lake City. The county was

named for David H. Moffat, who attempted to build a railroad route from Denver to Salt Lake City. In 1913, the reorganized Denver & Salt Lake Railroad reached as far as the town of Craig. Before settlers moved into the area in the 1800s, the Ute Tribe was the last Native American tribe inhabiting the Yampa Valley. Cattle and sheep ranchers followed. The Moffat Railroad now provides transportation for locally mined coal, which is shipped throughout the United States (Moffat County 2009a). The largest reported 2010 employment in Moffat County is in agriculture forestry and mining, followed by retail and educational services and healthcare and social assistance (U.S. Census Bureau 2012c).

Northwestern Colorado Region

The Northwestern Colorado Region consists of Routt, Rio Blanco, Garfield, and Mesa counties, Colorado.

Routt County was established in 1877 (Colorado State Archives 2009). Roughly 50 percent of the land in this county is publicly owned, with the Medicine Bow-Routt National Forest making up a large portion of the county. During the winter months, the resort town of Steamboat Springs thrives because of a world-class ski resort; while ranching, agriculture, forestry, mining, and power generation provide a year-round economy in the surrounding areas. Industries reporting the highest percentage of employment in 2010 were arts, entertainment, recreation, and accommodation and food services. Other important sectors include construction, and professional, scientific, management, administration, and waste management services (U.S. Census Bureau 2012c).

Rio Blanco County is located in rural northwestern Colorado and is home to the two communities of Meeker and Rangely. Approximately 75 percent of lands in the county are federally owned and include parts of the White River and Routt National Forests (Rio Blanco County 2009). Large industries in Rio Blanco in 2010 were agriculture, forestry, and mining; education services and healthcare and social assistance; and construction (U.S. Census Bureau 2012c).

Garfield County was established in 1883. Since then, coal mining has contributed greatly to the local economy. Today, approximately 60 percent of all Garfield County lands are federally owned, divided between the BLM (615,973 acres), USFS (515,865 acres), and the USBR (2,335 acres). Large industries in the county in 2007 were construction; educational service and health care and social assistance; and retail trade (U.S. Census Bureau 2012c).

Mesa County was created in 1883. Today, it is the eleventh most populous of the 64 counties in the state. The county contains 1 national monument (Colorado National Monument), 4 national forests and wilderness areas, and 3 state parks. It also contains the main population center of Grand Junction, which had an estimated 58,566 residents in 2010. The largest reported employment in Mesa County in 2010 was in agriculture, forestry, and mining; retail trade; and arts, entertainment, recreation, and accommodation and food services (U.S. Census Bureau 2012c).

Eastern Utah Region

The Eastern Utah Region consists of Daggett, Duchesne, Uintah, and Grand counties, Utah.

Daggett County was established in 1917. Before irrigated agriculture was introduced, the county served as a summer grazing area for sheep and cattle from Wyoming and northern Utah. There was a population increase following the construction of Flaming Gorge Dam in the late 1950s. More recently, the county had a population of 1,059 people in 2010, which is the smallest county population in the state. The Flaming Gorge Dam and Reservoir and the Ashley National Forest are important to the county's economy because of the large number of people employed in both government and tourism-related industries. In

2010, the largest reported employment in the county was education services and healthcare and social assistance, followed by agriculture, forestry, and mining; and retail sales (U.S. Census Bureau 2012c).

Duchesne County was established in 1914 from part of Wasatch County, when the Uintah and Ouray Indian Reservation opened to white homesteaders at the turn of the twentieth century under the Dawes Act. The county's economy has been based primarily on the livestock and oil and natural gas industries for most of the twentieth century. The largest share of Duchesne County's 2010 reported employment is in educational services and health care and social assistance, followed by agriculture, forestry, and mining, and retail trade (U.S. Census Bureau 2012c). The county's economy specializes in industries related to oil and gas extraction. Duchesne County is the top oil producing county in the state (UDNR 2013a).

Uintah County was established in 1880. Geologic deposits of gilsonite, oil shale, tar sands, and oil have played a significant role in the county's economic history. Oil was discovered in 1948, and oil and natural gas production continue to be important for the county's economy. Currently, Uintah County is the largest producer of natural gas in the state and the second largest producer of oil (UDNR 2013a). The location of Uintah County near the Ashley National Forest and Dinosaur National Monument has made tourism a major component of the economy. In 2010, the largest reported employing industries were in agriculture, forestry, and mining (includes oil and gas); educational services and health care and social assistance; and retail trade (U.S. Census Bureau 2012c).

Grand County was established in 1890. Small farms and orchards, livestock ranching, and potash mining have been the major economic activities during much of Grand County's history. The uranium mining boom in the 1950s brought a population expansion to the area. Arches National Monument, established in 1929 and upgraded to a National Park in 1971, has made tourism a crucial source of revenue to the local economy. Canyonlands National Park is also partially located in Grand County, Utah. Moab, the largest city, had 5,046 people in 2010 and is projected to have 5,719 people by the year 2030. The economy has shifted profoundly from specialization in resource extraction to specialization in tourism-related industries (Utah Governor's Office of Planning and Budget 2001). In 2010, the largest reported employing industries were in arts, entertainment, recreation, and accommodations and food services; educational services and healthcare and social assistance; and retail sales (U.S. Census Bureau 2012c).

Uintah and Ouray Indian Reservation

The Uintah and Ouray Indian Reservation is located in northeastern Utah approximately 150 miles east of Salt Lake City on U.S. Highway 40, south and west of Vernal, Utah. The Reservation is located within a three-county area (Grand, Uintah, and Duchesne counties) known as the Uinta Basin. It is the second largest Indian Reservation in the United States, covering more than 4.5 million acres. The Northern Ute Tribe has a tribal membership of 3,157; more than half of which lives on the Reservation (Ute Tribe 2009). Tribal members operate their own tribal government and oversee approximately 1.3 million acres of trust land. The Utes also operate several businesses, including a super market, gas stations, bowling alley, tribal feedlot, Uinta River Technologies, Ute Tribal Enterprises LLC, water systems, and Ute Energy. Important industries on the Reservation include cattle ranching, and oil and natural gas development and production.

Three bands of Utes comprise the Northern Ute Tribe: the Whiteriver Band, Uncompahgre Band, and the Uintah Band. The Uintah Band was first to call the Uinta Basin their home; later, the Whiteriver and Uncompahgre bands were removed from Colorado to the Uintah Valley Reservation, thus creating the Uintah and Ouray Reservation (Ute Tribe 2009).

Wasatch Front Region

The Wasatch Front Region consists of Utah and Wasatch counties.

Utah County, Utah, was settled by Mormon pioneers during the 1840s with an economy based largely on fruit and vegetable farming. By 1873, it held the state's first large manufacturing plant, and by the 1940s, it was a major center of steel production for the war effort. Brigham Young University, established in 1875, is a major educational institution located in this county. The county seat, Provo City, had a population of 112,488 in 2010. In 2010, the largest reported employing industries in the county were educational services and health care and social assistance; retail trade; and professional, scientific, and management, and administrative and waste management services (U.S. Census Bureau 2012c).

Wasatch County, Utah, was established in 1862. In 1899, a railroad line connecting the county to Provo made Heber City an important shipping terminal for wool and sheep. Water development and recreation have since been important sources of economic activity. Wasatch County is increasingly becoming a commuter hub for the economic centers in Salt Lake and Utah counties. In 2010, educational services and health care and social assistance; arts, entertainment, and recreation, and accommodations and food services; and professional, scientific, and management, and administrative and waste management services accounted for the largest shares of reported employment in Wasatch County (U.S. Bureau of Economic Analysis [BEA] 2012a; U.S. Census Bureau 2012c).

Central Utah Region

The Central Utah Region consists of Carbon, Sanpete, Juab, and Emery counties.

Carbon County, Utah, was established in 1894. Farming and ranching were the primary economic activities until coal was discovered in the 1880s, when coal mining became the major catalyst for development. Price is Carbon County's largest city, with a population of 8,715 in 2010. In 2010, the largest reported employing industries in the county were educational services and health care and social assistance; retail trade; and agriculture, forestry, and mining (U.S. Census Bureau 2012c). Carbon County remains the second highest natural gas-producing county in the state (UDNR 2013a).

Sanpete County, Utah, established in 1850, has had an agricultural-based economy since its settlement. Grain crops and cattle were important early on, and sheep dominated the local economy from 1880 through the 1920s. Turkey production became a cooperative, integrated industry during the Great Depression. More recently, Sanpete ranks among the top turkey-producing counties in the country. While agriculture plays an important part in the Sanpete County economy, education-related employers (e.g., Snow College, North and South Sanpete School Districts, and Sodexo Marriott Services) account for the majority of employment in the county (Utah Governor's Office of Planning and Budget 2001). In 2010, the largest reported employing industries in the county were in educational services and health care and social assistance; retail trade; and agriculture, forestry, and mining (U.S. Census Bureau 2012c).

Juab County, Utah, was founded in 1852. Whereas the earliest economy of Juab County was agricultural-based, precious metals were discovered in 1869, and mining operations constituted a major component of its economy through the 1950s. Mining operations still continue, but on a much smaller scale. In 2010, the largest reported employing industries included educational services and health care and social assistance, construction, and manufacturing (U.S. Census Bureau 2012c).

Emery County, Utah, was established in 1880. Livestock and farming have been central to the county's economy throughout most of its history, beginning in 1877 when livestock growers from Sanpete County settled there. The completion of a railroad and the development of coal mining in the Carbon County area provided for economic growth from the 1880s through the early twentieth century. Emery County's

population grew significantly during the 1970s, when Utah Power and Light Company opened large power plants in Castle Dale and Huntington. In 2010, the largest reported employing industries in the county were in educational services and health care and social assistance; agriculture, forestry, and mining; and construction (U.S. Census Bureau 2012c).

3.2.20.3.4 Transportation

Three interstate highways run through the study area: I-80, I-15, and I-70. I-80 runs east-west through western Wyoming, through Sweetwater and Carbon counties in the Southwestern Wyoming Region on its way toward Salt Lake City, where it connects with I-15. Connecting Salt Lake City with Las Vegas, I-15 travels generally in a north-south direction as it traverses the Wasatch Front and Central Utah regions. I-70 runs through the city of Grand Junction, Colorado, before heading west through Utah. Within the study area, I-70 travels east-west through Green River, Utah before connecting with I-15 south of the project areas in Millard County, Utah.

Other important roads in the study area include U.S. Highway 40, which links Routt, Moffat, Uintah, Duchesne, and Wasatch counties as it heads west from Steamboat Springs, Colorado through Vernal, Utah to Heber City, Utah, and then north to its junction with I-80. The 175-mile-long segment of U.S. Highway 40 from the Colorado state line to the junction of I-80 had an annual average daily trip count of 404,870 vehicles per day in 2008 (Utah Department of Transportation 2008). Rural portions of the study area not directly served by these roads are linked to them via numerous minor roads within each county. There are also a number of railroads that link various industries within the study area to other parts of the region and nation.

3.2.20.3.5 Demographics

This section describes demographic characteristics for each of the regions within the study area, including population estimates, age distribution of the population, race and ethnicity characteristics, and per capita income.

Population Trends

Population figures and estimates for all of the counties within the study area were obtained from the U.S. Census Bureau for years 1970 through 2010 and are summarized on Figure 3-2. All study area regions experienced population growth over the 40-year period. During the period 1970-2010, population increased by more than 300 percent in the study area, increasing from 326,209 in 1970 to 981,571 in 2010, primarily driven by growth in the Wasatch Front and Northwestern Colorado regions. The Wasatch Front region experienced the highest population growth during this period, with particularly high population growth beginning in 1990. Between 1990 and 2000, population increased by 112,469.

The Eastern Utah Region experienced the slowest growth over the 40-year period, gaining only an additional 34,072 residents. The largest losses in this region occurred between 1984 and 1989, when the population declined from 49,755 to 42,032 individuals. This trend reversed in the 1990s, and the region has since experienced steady, albeit slow, growth. The Southwestern Wyoming and Central Utah regions also showed relatively slow population growth during the entire 40-year period. Along with the Eastern Utah Region, the Southwestern Wyoming and Central Utah regions are notably less populated compared to the Northwest Colorado and Wasatch Front regions in the study area.

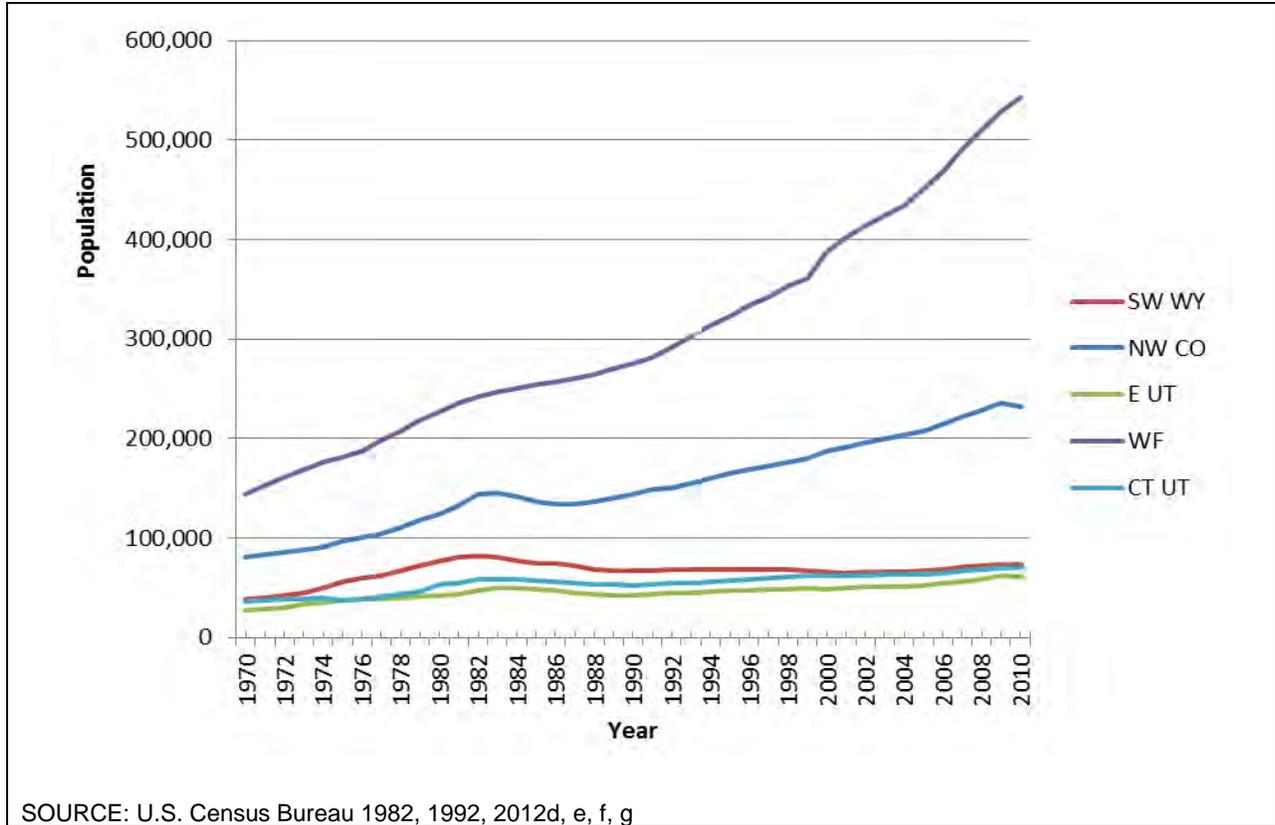


Figure 3-2 Historical Population Estimates for Five Study Area Regions, 1970 to 2010

Age Distribution

Data were obtained for 2000 and 2010 from the U.S. Census for the age distribution of the population in each of the five study area regions (Table 3-270). In the Northwestern Colorado and Wasatch Front Regions, the “Under 20 Years” age group showed very high growth, growing by 20 percent and 40 percent in each region, respectively. In the Wasatch Front Region, all age groups grew by 40 percent or more. All study area regions showed substantial growth in the population of older residents (“65 Years of Age and Older”), with the lowest change occurring in the Southwestern Wyoming Region (16 percent) and the highest occurring in the Wasatch Front Region (43 percent).

TABLE 3-270 POPULATION CHANGE BY AGE GROUP IN THE STUDY AREA								
Year	Total Population	Under 20 Years		45 to 54 Years		65 Years and Over		Median Age
		Number	Share (Percent)	Number	Share (Percent)	Number	Share (Percent)	
Southwestern Wyoming and Moffat County, Colorado								
2010	73,486	21,234	28.9	11,140	15.2	7,141	9.7	35.8
2000	66,436	20,529	30.9	10,533	15.9	6,162	9.3	35.4
10-Year Change	7,050	705	–	607	–	979	–	0.4
10-Year Percent Change	11	3	–	6	–	16	–	1
Northwestern Colorado								
2010	233,287	62,803	26.9	34,553	14.8	29,325	12.6	38.05
2000	185,722	52,544	28.3	27,887	15.0	23,143	12.5	36.25
10-Year Change	47,565	10,259	–	6,666	–	6,182	–	1.8
10-Year Percent Change	26	20	–	24	–	27	–	5

TABLE 3-270 POPULATION CHANGE BY AGE GROUP IN THE STUDY AREA								
Year	Total Population	Under 20 Years		45 to 54 Years		65 Years and Over		Median Age
		Number	Share (Percent)	Number	Share (Percent)	Number	Share (Percent)	
Eastern Utah								
2010	61,479	21,116	34.4	7,534	12.3	6,433	10.5	34.8
2000	49,001	18,165	37.1	6,033	12.3	5,041	10.3	32.95
10-Year Change	12,478	2,951	–	1,501	–	1,392	–	1.85
10-Year Percent Change	25	16	–	25	–	28	–	6
Wasatch Front								
2010	540,094	213,695	39.6	46,189	8.6	35,474	6.6	28.1
2000	383,751	152,876	39.8	31,050	8.1	24,787	6.5	26.4
10-Year Change	156,343	60,819	–	15,139	–	10,687	–	1.7
10-Year Percent Change	41	40	–	49	–	43	–	6
Central Utah								
2010	70,447	24,778	35.2	8,185	11.6	8,511	12.1	31.05
2000	62,283	23,693	38.0	7,315	11.7	7,072	11.4	31.05
10-Year Change	8,164	1,085	–	870	–	1,439	–	0
10-Year Percent Change	13	5	–	12	–	20	–	0
SOURCES: U.S. Census Bureau 2012h, i								

Racial and Ethnic Characteristics

Table 3-271 summarizes the racial and ethnicity characteristics for the population within each of the five study area regions with data collected from the 2010 Census. Only the Central Utah Region reported more than 90 percent of the population as “White” in 2010. All of the other study area regions had populations of “White” residents that comprised less than 90 but more than 85 percent of the population. “Hispanic or Latino” residents accounted for more than 15 percent of the population in the Southwestern Wyoming and Northwestern Colorado regions. “American Indian or Alaskan Native” residents accounted for more than 5 percent of the population in the Eastern Utah Region. A more detailed analysis of minority characteristics in the study area is presented in the Environmental Justice section.

TABLE 3-271 RACE AND ETHNICITY DISTRIBUTION FOR FIVE REGIONS IN THE STUDY AREA					
Race and Ethnicity	Southwestern Wyoming and Moffat County, Colorado	Northwestern Colorado	Eastern Utah	Wasatch Front	Central Utah
Total	73,486	233,287	61,479	540,094	70,447
Race					
White	88.82%	88.28%	87.91%	89.44%	92.35%
Black	0.81%	0.63%	0.32%	0.53%	0.53%
American Indian or Alaskan Native	0.96%	1.01%	6.08%	0.59%	1.03%
Asian	0.71%	0.71%	0.49%	1.34%	0.48%
Native Hawaiian or Pacific Islander	0.09%	0.10%	0.21%	0.73%	0.26%

TABLE 3-271 RACE AND ETHNICITY DISTRIBUTION FOR FIVE REGIONS IN THE STUDY AREA					
Race and Ethnicity	Southwestern Wyoming and Moffat County, Colorado	Northwestern Colorado	Eastern Utah	Wasatch Front	Central Utah
Some Other Race	6.32%	6.75%	2.57%	4.71%	3.60%
Two or More Races	2.29%	2.52%	2.43%	2.66%	1.76%
Ethnicity					
Hispanic or Latino	15.43%	16.20%	7.09%	10.92%	8.96%

SOURCE: U.S. Census Bureau 2012h
 NOTE: Percentages may not add up to 100 percent because persons comprising the group “Hispanic or Latino” may fall into one or more racial categories.

Personal Income

Per capita income for each of the five study area regions; the states of Wyoming, Colorado, and Utah; and the United States is summarized on Figure 3-3 for 2009 (in 2009 dollars). Per capita personal income in all of the study area regions was lower than the per capita personal income for the respective states. The Wasatch Front Region had the lowest per capita income of all regions (\$26,017). By contrast, the Southwestern Wyoming and Northwestern Colorado regions had the highest incomes (\$37,104 and \$40,978, respectively). The Southwestern Wyoming region’s per capita personal income for 2009 was two percent higher than the nation’s per capita personal income of \$36,200, while the Northwestern Colorado region’s per capita personal income was 13 percent higher than that of the nation.

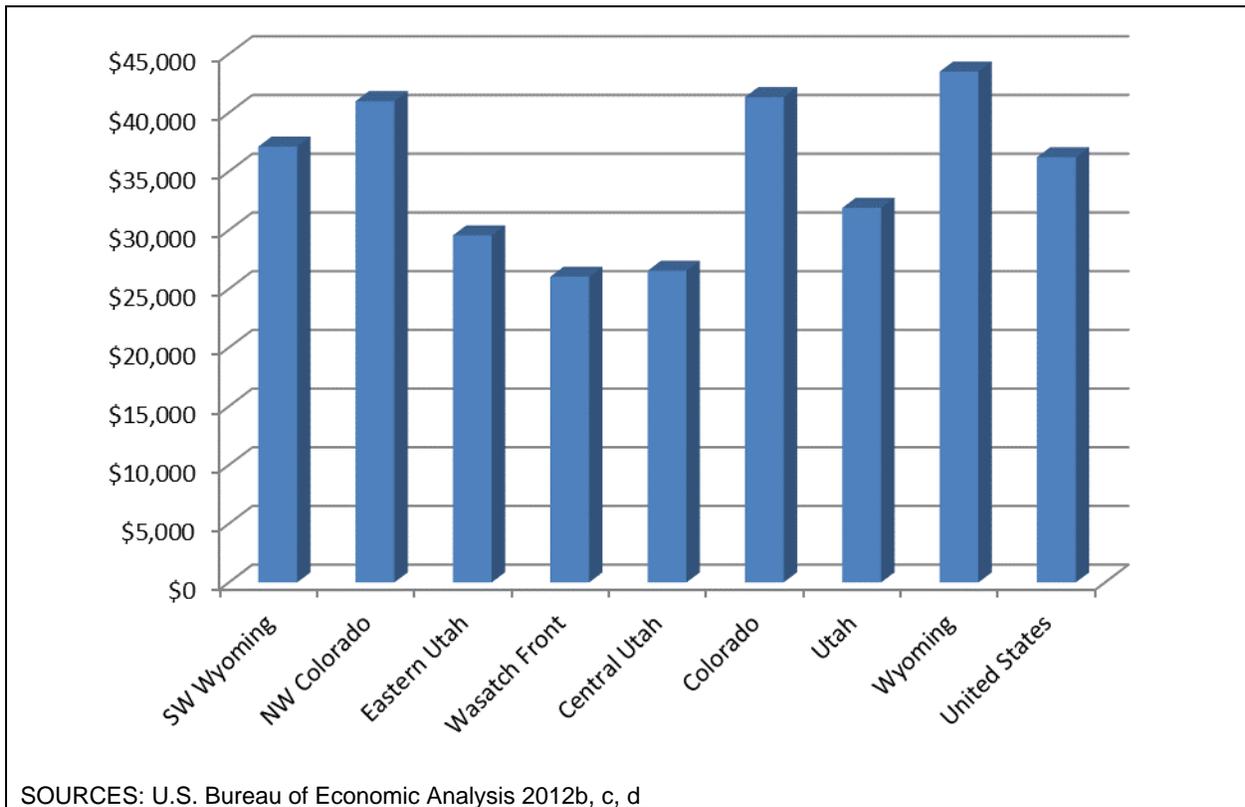


Figure 3-3 2009 Per Capita Personal Income for Study Area Regions, States, and the United States (2009 dollars)

3.2.20.3.6 Economic Characteristics

This section discusses the economic characteristics of each of the study area regions and compares them to the economic characteristics of the states of Colorado, Wyoming, and Utah, and the United States where relevant. Data in this section comes from the BEA (2012a, e, f).

Employment by Industry

Table 3-272 shows that the three-state region has experienced a loss of almost 100,000 construction jobs during the economic downturn, between 2008 and 2011. Table 3-272 provides a sample of geographies from which construction workforce could be sourced.

Geography	2001	2006	2008	2011	Jobs Lost 2008 to 2011
Wyoming	27,291	33,248	37,977	29,336	8,641
Colorado	237,667	248,267	241,759	181,999	59,760
Utah	94,420	127,546	121,405	91,299	30,106
Sweetwater County, Wyoming (Rock Springs)	1,812	2,665	2,962	2,256	706
Mesa County, Colorado (Grand Junction)	6,738	8,494	8,987	5,638	3,349
Uintah County, Utah (Vernal)	839	1,183	1,599	1,202	397
Carbon County, Utah (Price)	559	604	564	633	69
Wasatch County, Utah (Heber)	967	1,596	1,487	1,047	440
Utah County, Utah (Provo-Orem)	15,206	22,569	21,030	15,794	5,236
Salt Lake City, Utah Metropolitan Area	44,989	54,900	53,616	41,638	11,978
Denver-Aurora-Broomfield, Colorado Metropolitan Area	120,921	120,325	116,118	90,697	25,421
Cheyenne, Wyoming Metropolitan Area	3,202	4,334	4,213	3,732	481
Non-metropolitan Wyoming and Colorado counties (Carbon, Routt, Rio Blanco, Garfield)	10,144	12,126	13,803	8,223	5,580
Non-metropolitan counties in Utah (Carbon, Daggett, Duchesne, Grand, Emery, Juab, Sanpete)	3,041	4,191	4,581	3,567	1,014

SOURCE: U.S. Bureau of Economic Analysis 2013

Data were obtained from the BEA on total annual employment for all counties within each of the five study area regions from 2001 to 2009, so that employment trends and 2009 snapshots by industry could be examined.⁹ County-level data are presented in Gateway South Socioeconomic Baseline Assessment, and summarized below by region. The following section describes both the employment trends in terms of the proportion of new jobs or jobs gained over the 8-year period by industry, as well as the 2009 proportion of employment by industry in each of the counties.

⁹BEA estimates annual employment for counties nationwide. These data can be incomplete in some counties due to disclosure problems associated in areas where few firms are operating. Estimates of *total* employment, however, do include those numbers that are unreported or omitted at the specific industry level.

Total annual employment includes both part-time and full-time jobs. As such, individuals that have more than one job are counted twice in the totals. The employment estimates include those individuals who are employed by businesses and public entities, as well as those who are self-employed. Since 2001, BEA has employed the North American Industry Classification System to better capture new industries that did not exist under the old Standard Industrial Classification System.

Southwestern Wyoming and Moffat County, Colorado Region

Annual employment from 2001 to 2009 for the three counties in the Southwestern Wyoming and Moffat County, Colorado Region increased by 18.0 percent, from 41,013 jobs in 2001 to 48,377 jobs in 2009. This was largely driven by job increases in Sweetwater County, Wyoming.

Industries accounting for the greatest share of jobs in Moffat County during 2009 included government and government enterprises (16.0 percent) and retail trade (11.5 percent). Industries with growth in employment between 2001 and 2009 in Moffat County, Colorado include the mining (18.4 percent growth) and construction (19.3 percent growth) sectors.

Industries comprising the greatest percentage of jobs in Sweetwater County during 2009 included mining (20.9 percent) and government services (15.6 percent). Growth in employment between 2001 and 2009 in Sweetwater County occurred in the transportation and warehousing industry (11.6 percent growth).

The greatest percentage of jobs in Carbon County during 2009 were in government services (21.9 percent) and retail trade (10.0 percent). Job growth in Carbon County, Wyoming between 2001 and 2009 was in the mining (30.6 percent growth) and real estate (29.7 percent growth) industries.

Northwestern Colorado Region

Annual employment from 2001 to 2009 for the four counties in the Northwestern Colorado Region increased by 20.7 percent, from 124,008 to 149,680 jobs.

High employing sectors in Routt County in 2009 include construction (13.7 percent), accommodations and food services (10.1 percent), and real estate and rental and leasing (10.0 percent). Routt County saw growth in employment between 2001 and 2009 in real estate (31.3 percent growth), health care and social assistance (19.1 percent growth), professional and technical services (18.7 percent growth), and finance and insurance (17.0 percent growth). The construction industry lost 413 jobs in Routt County between 2001 and 2009, a loss of 22.6 percent.

Industries comprising the greatest percentage of jobs in Rio Blanco County during 2009 included mining (19.3 percent) and government services (23.1 percent). In Rio Blanco County, growth in employment between 2001 and 2009 occurred in the mining industry (50.7 percent growth), construction (18.8 percent growth), and accommodation, and food services sector (11.7 percent growth).

The sectors accounting for the highest proportion of employment in 2009 included construction (15.2 percent) and government services (13.7 percent). In Garfield County, industry employment grew between 2001 and 2009 in mining (23.1 percent growth) and government services (17.5 percent growth).

The largest employing sectors in Mesa County during 2009 were government services (11.5 percent), health care and social assistance (11.8 percent), and retail trade (11.7 percent). In Mesa County, job growth between 2001 and 2009 occurred in the mining (21.1 percent growth), health care and social assistance (13.7 percent growth), government services (9.6 percent growth), and real estate (9.9 percent growth) sectors.

Eastern Utah Region

From 2001 to 2009, the total annual employment for the four counties in the Eastern Utah Region increased by 31.4 percent, from 14,317 to 18,808 jobs during this time, with the largest proportion of increases in Uintah County.

In Daggett County, much of the information on employment by industry was not disclosed in the figures provide by the BEA (2012a) due to proprietary disclosure issues. Employment figures from 2001 to 2009 show an increase in jobs from 589 to only 618, a 4.92 percent change. Not enough information is disclosed to accurately assess which industries grew the most during this period (refer to county-level data in Gateway South Socioeconomic Baseline Assessment).

Sectors comprising the greatest percentage of jobs in Uintah County in 2009 included mining (16.5 percent) and government services (15.7 percent). In Uintah County, employment growth occurred in mining (25.6 percent growth), retail trade (9.7 percent growth), and the transportation and warehousing industries (10.57 percent growth).

The largest employing sectors in Grand County in 2009 were in accommodation and food services (21.8 percent), retail trade (13.8 percent), and government services (14.0 percent). Between 2001 and 2009, employment growth occurred in the real estate (19.3 percent growth) and retail trade (13.3 percent growth) sectors.

The largest employing sectors in Duchesne County in 2009 were government services (16.4 percent) and mining (14.6 percent). Employment growth in Duchesne County occurred in the mining (29.8 percent) and transportation and warehousing (29.8 percent) industries between 2001 and 2009.

Wasatch Front Region

Annual employment increased, from 2001 to 2009 for the two counties in the Wasatch Front Region, by 27.0 percent from 208,509 to 258,705 jobs. A majority of these gains were in Utah County.

Sectors comprising the greatest percentage of jobs in Wasatch County in 2009 were accommodation and food services (11.3 percent) and government services (12.7 percent). Employment growth in Wasatch County occurred in the real estate (14.8 percent growth) and finance and insurance (12.2 percent growth) industries.

The largest employing sectors in Utah County in 2009 were retail trade (11.8 percent) and government services (11.7 percent). In Utah County, employment growth occurred in the finance and insurance (14.1 percent growth) and health care and social assistance (13.0 percent growth) industries.

Central Utah Region

Between 2001 and 2009, total annual employment for the four counties in the Central Utah Region increased by 12.4 percent; from 30,711 to 34,506.

Sectors comprising the greatest percentage of jobs in Carbon County during 2009 included government services (17.6 percent) and retail trade (12.8 percent). In Carbon County, employment growth occurred in the transportation, warehousing (11.3 percent growth) and real estate (9.6 percent growth) industries.

Sectors comprising the greatest percentage of jobs in Emery County in 2009 were government services (16.6 percent) and retail trade (12.7 percent). In Emery County, employment growth occurred in the construction (65.5 percent) and retail trade (32.7 percent) industries.

The greatest percentage of jobs in Sanpete County in 2009 were in government services (23.3 percent) and retail trade (13.0 percent). Between 2001 and 2009, employment increases in Sanpete County occurred in retail trade (20.6 percent) and real estate (20.4 percent).

The largest employing sectors in 2009 were construction (13.0 percent) and government service (14.6 percent) industries. Note that data for many of the industries listed for Juab County in BEA (2012a) are

not disclosed. In Juab County, job growth between 2001 and 2009 occurred in construction (33.1 percent) and manufacturing (14.0 percent) industries.

Average Earnings

Data on average annual earnings by occupation were obtained from the Bureau of Labor Statistics for the three states and the nation. On average, annual average earnings were higher in Colorado than in Wyoming and Utah. The exception was in the construction, extraction, and production occupations, where average earnings in Wyoming are higher than those in Colorado and Utah. Average earnings by occupation are summarized in Table 3-273.

TABLE 3-273 AVERAGE EARNINGS FOR OCCUPATIONS, 2010				
Occupations	Wyoming	Colorado	Utah	U.S.
Architecture and engineering occupations	66,640	80,100	70,310	75,550
Arts, design, entertainment, sports, and media occupations	36,080	49,440	41,960	52,290
Building and grounds cleaning and maintenance occupations	25,380	25,200	23,530	25,300
Business and financial operations occupations	59,790	68,410	59,030	67,690
Community and social services occupations	41,740	43,050	36,110	43,180
Computer and mathematical occupations	56,490	81,510	65,680	77,230
Construction and extraction occupations	45,360	42,630	39,160	43,870
Education training and library occupations	47,110	49,110	41,230	50,440
Farming, fishing and forestry occupations	28,480	27,460	26,120	24,330
Food preparation and serving-related occupations	20,630	22,100	20,690	21,240
Healthcare practitioner and technical occupations	68,170	73,100	69,130	71,280
Healthcare support occupations	27,780	29,200	25,250	26,920
Installation maintenance and repair occupations	46,740	44,010	42,260	42,810
Legal occupations	63,470	92,020	87,340	96,940
Life physical and social science occupations	50,900	70,170	54,110	66,390
Management occupations	81,110	107,470	88,080	105,440
Office and administrative support occupations	31,180	35,140	29,860	33,470
Personal care and service occupations	24,380	26,230	24,100	24,590
Production occupations	45,570	34,670	33,060	33,770
Protective service occupations	43,420	43,440	35,770	42,490
Sales and related occupations	30,740	39,780	34,710	36,790
Transportation and material moving occupations	37,800	34,160	32,820	32,660
Sales and related occupations	81,110	80,100	70,310	75,550
Transportation and material moving occupations	31,180	49,440	41,960	52,290
SOURCES: U.S. Bureau of Labor Statistics 2012a,b, c				

Unemployment

Monthly estimated unemployment rates for each of the five study area regions, the three states, and the nation are shown on Figures 3-4 through 3-8. There is a strong association between unemployment rates in these regions and those reported for their respective states. All of the study area regions experienced a decline in unemployment rates between 2001 and 2008, followed by a rise in unemployment rates from 2008 to 2011. Across all regions, unemployment rates have peaked in 2009 or 2010, followed by slight decreases in 2011. The Northwestern Colorado region shows the highest unemployment rates since 2008, although these rates are similar to those in the other study area regions.

Beginning in 2010, the Northwestern Colorado region saw several periods where its unemployment rate was higher than that of the nation, while the Eastern Utah region’s unemployment rate exceeded that of the nation once during that time. The lowest unemployment rates in 2011 were in the Eastern Utah region, with approximately 4.5 percent of the population unemployed and seeking work.

In December 2011 (the most recent data available on unemployment), the Northwest Colorado Region had the highest unemployment (8.1 percent), followed by the Central Utah Region (6.5 percent), the Southwest Wyoming and Moffat County, Colorado Region (5.6 percent), the Eastern Utah Region (5.5 percent), and the Wasatch Front Region (5.4 percent). In contrast, the nation’s unemployment rate was 8.9 percent, higher than all of the study area regions. The national unemployment rate was also higher than that of Colorado (7.9 percent), Utah (7.9 percent), and Wyoming (5.7 percent).

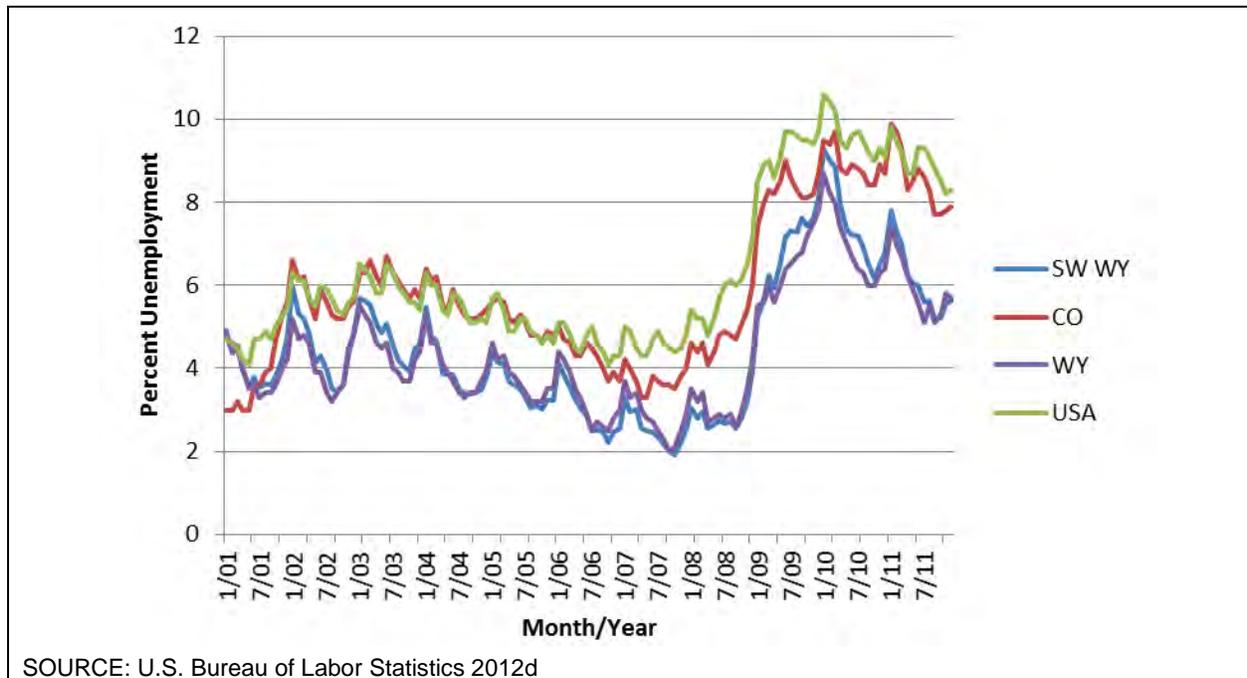


Figure 3-4 Southwestern Wyoming and Moffat County, Colorado Region (SW WY), States of Colorado and Wyoming, and the U.S. Unemployment Rates

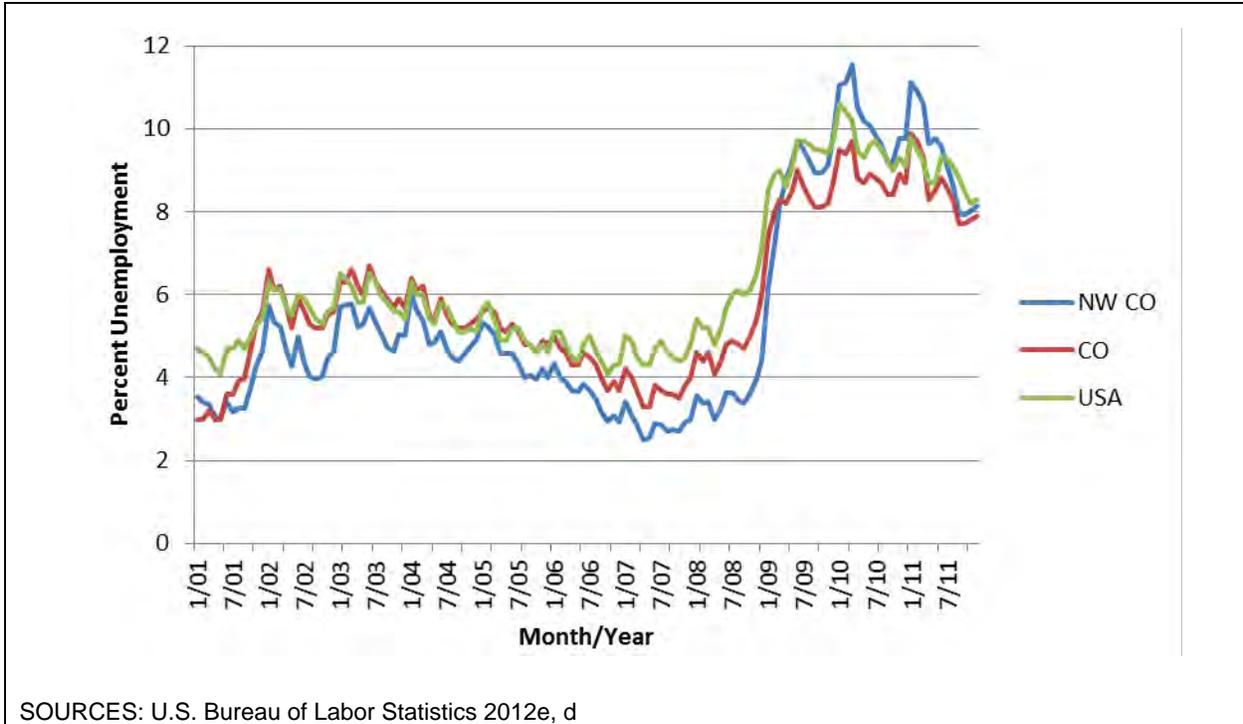


Figure 3-5 Northwestern Colorado Region (NW CO), State of Colorado, and the U.S. Unemployment Rates

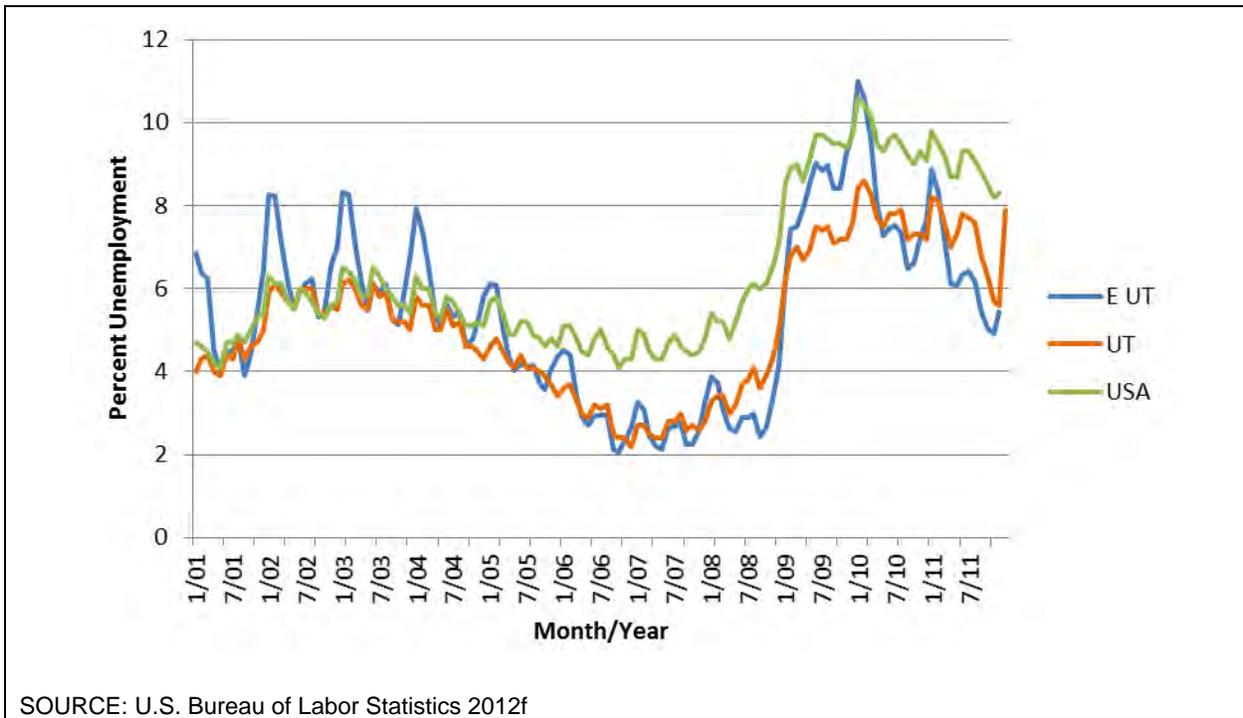
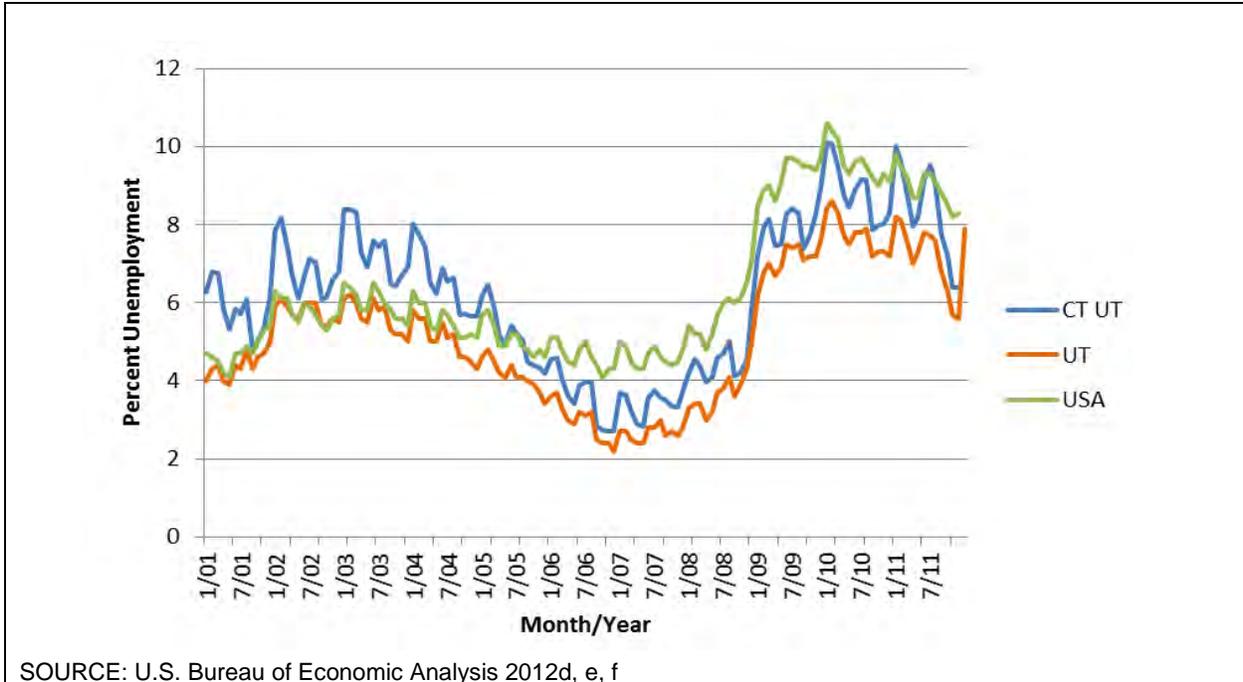
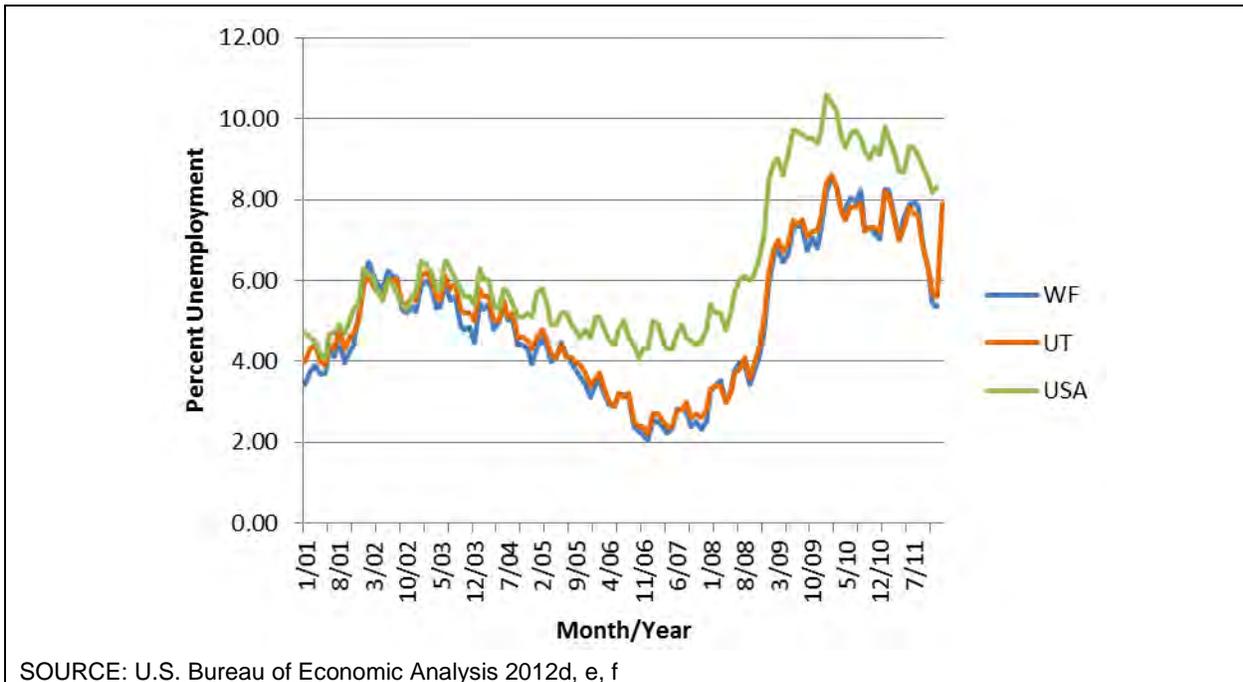


Figure 3-6 Eastern Utah Region (E UT), State of Utah, and the U.S. Unemployment Rates



SOURCE: U.S. Bureau of Economic Analysis 2012d, e, f

Figure 3-7 Central Utah Region (CT UT), State of Utah, and the U.S. Unemployment Rates



SOURCE: U.S. Bureau of Economic Analysis 2012d, e, f

Figure 3-8 Wasatch Front Region (WF), State of Utah, and the U.S. Unemployment Rates

3.2.20.3.7 Local Resources

This section describes property tax revenue, housing characteristics, construction industry gross domestic product, schools, and police and emergency services.

Property Valuation and Taxation

Local and state government entities generate a portion of their tax revenues by assessing and taxing certain categories of property. This section describes the property tax information for each of the three states in the study area. Property tax information is provided for the counties within the study area by state. Each state has different fiscal policies and annual reporting standards, so the most relevant property tax data are provided for each of the states. For example, Colorado and Wyoming report assessed valuations, while in Utah only tax revenues are provided.

Wyoming

Property, or ad valorem, taxes are assessed both locally and by the State. County assessor offices establish taxable values for most properties within their borders. Property is valued initially at fair market value, to which an assessment of taxable value is applied. Taxable value or assessment value is determined by applying an assessment rate or percent of the fair market value of property in a particular property class. For example, the current assessment rates for Wyoming are as follows (Wyoming Department of Revenue 2009):

- Gross product of minerals and mine products – 100 percent
- Property used for industrial purposes – 11.5 percent
- All other property, real and personal – 9.5 percent

The Wyoming Ad Valorem Tax Division establishes state-assessed taxable values for mineral and non-mineral properties, including airlines, electric and gas distribution, pipelines, railroads and rail car, and telecommunication companies. In 2011, the electric utility, PacifiCorp, was the highest non-mineral state-assessed company, with \$224.0 million in assessed value.

Table 3-274 summarizes the assessed values and property tax revenues in the relevant counties of Wyoming and in the state. In 2011, Carbon and Sweetwater counties comprised \$2.6 billion in state-assessed valuation, accounting for 15.5 percent of the state’s assessed valuation. Mineral (includes oil and gas) valuation comprised more than 88 percent of the state’s assessed valuation in the two-county region. Assessed valuation of major, municipal, and rural electric companies in the two-county region in 2011 was \$118 million. All state-assessed values represent approximately 69 percent of the total assessed valuation in Wyoming. In 2011, property tax revenue in the two-county region comprised 15 percent of the property tax revenue received in the state.

County	Total Assessed Value (dollars)	Total State-Assessed Value (dollars)	Percent of Total State Assessed Value	Total Property Taxes Levied (dollars)	Percent of Total State Property Tax Levied
Carbon	915,134,660	679,730,373	4.05	58,921,730	3.81
Sweetwater	2,543,220,631	1,915,225,872	11.40	170,672,670	11.04
Two-County Region	3,458,355,291	2,594,956,245	15.45	229,594,400	14.85
Wyoming	24,339,700,232	16,795,081,632	100.00	1,545,773,454	100.00

SOURCE: Wyoming Department of Revenue 2012

Colorado

Colorado is one of only 13 states that does not impose a state property tax (Colorado State Government 2009), although the state does assess certain types of properties, such as utilities, and apportions the taxes to the counties. Local governmental units assess property taxes primarily to fund public school operations

and local government services. Colorado property taxes have three main components: the actual value of property, the assessment rate, and the mill levy. The local assessor establishes the actual value of the property and the property’s classification (residential, commercial, personal, etc.). The Colorado Legislature determines the assessment rate, and local taxing entities determine the mill levy.

Real and personal property is taxable in Colorado, unless specifically exempted by law. Real property includes land, buildings, and fixtures that are physically incorporated into a building or affixed to land and also includes possessory interests, which are private property interests or the right to the occupancy and use of an otherwise tax-exempt property. Personal property includes machinery, equipment, furniture, and other articles related to the business of a commercial or industrial operation. Public utilities are assessed property taxes by the state based on an assessment rate of 29 percent. The state also assesses rail transportation companies and airlines doing business in Colorado. The company valuations are then apportioned to the counties for collection of local property tax.

Table 3-275 summarizes the total assessed value in northwestern Colorado. This five-county region accounts for 11 percent of the state’s assessed valuation, with Moffat County having the greatest valuation in this region. This region accounts for approximately 6 percent of the state’s total property taxes levied. State-assessed value comprises four percent of all assessed value in the state.

TABLE 3-275 2010 COLORADO ASSESSED VALUATION AND PROPERTY TAX REVENUE					
County	Total Assessed Value (dollars)	Total State-Assessed Value (dollars)	Percent of Total State Assessed Value	Total Property Tax Levied (dollars)	Percent of Total State Property Tax Levied
Mesa	2,316,357,860	113,688,000	2.18	132,570,225	1.95
Garfield	3,297,809,630	78,238,500	1.50	153,424,816	2.26
Rio Blanco	1,130,673,390	109,382,000	2.10	48,764,983	0.72
Moffat	473,376,830	208,030,400	3.98	30,369,315	0.45
Routt	1,468,564,329	85,833,000	1.64	61,684,451	0.91
Study Area ¹	8,686,782,039	595,171,900	11.40	426,813,790	6.28
Colorado	92,648,660,822	5,220,577,546	100.00	6,794,300,280	100.00

SOURCE: Colorado Department of Local Affairs 2010
 NOTE: ¹Includes the five Colorado counties in the study area

Utah

The state of Utah assesses and taxes utilities and natural resources located anywhere within the state’s boundary. The amount of taxes owed to either the county or the state is determined by applying an appropriate tax rate to the taxable value of a category of property. Taxable value is equal to the fair market value of the property, minus any tax exemptions.

In Utah, property classified as real property includes land and buildings, while personal property refers to property that can be geographically moved (Utah State Tax Commission 2012a). Local counties in Utah have the authority to assess and tax real and personal property located within county boundaries. Electric transmission lines are considered unitary energy properties,¹⁰ which include units that cross county lines, and are assessed centrally through the state. The state also assesses natural resources, while real and personal property are assessed through county governments.

¹⁰“Energy properties” include the operating property of natural gas pipelines, natural gas distribution companies, liquid petroleum products pipelines, and electric corporations, including electric generation, transmission, and distribution companies, and other similar entities (Utah State Tax Commission 2008).

In 2011, Utah total taxable value for both state and locally assessed property was approximately \$205.3 billion, while total property tax revenue was \$2.6 billion, an effective average tax rate of approximately 1.3 percent (Utah State Tax Commission 2012a).

Table 3-276 summarizes total property taxes levied as well as utility property taxes levied for the 2011 fiscal year for the counties in the study area in Utah. During 2011, Utah County, located south of the Salt Lake City area in the Wasatch Front Region, generated 13 percent of the Utah’s property taxes levied, of which utility property taxes levied accounted for approximately 5 percent. Utility taxes levied accounted for \$139 million or approximately 5 percent of the state’s property taxes levied. PacifiCorp was Utah’s second largest centrally assessed property in 2011. Utility taxes levied account for a considerable portion of county taxes levied in Emery, Juab, and Daggett counties.

TABLE 3-276				
2011 UTAH PROPERTY TAX REVENUE BY COUNTY				
County	Property Tax Levied (dollars)	Percent of State Property Tax Levied	Utility Property Tax Levied (dollars)	Utility Tax to Total Tax Levied in the County (Percent)
Carbon	24,299,472	0.94	2,635,260	10.84
Daggett	2,268,169	0.09	898,642	39.62
Duchesne	20,167,669	0.78	1,302,405	6.46
Emery	23,374,441	0.90	17,076,847	73.06
Grand	12,687,419	0.49	1,122,726	8.85
Juab	10,319,663	0.40	4,031,422	39.07
Sanpete	15,477,600	0.60	632,587	4.09
Uintah	49,714,554	1.92	3,576,177	7.19
Utah	337,838,824	13.07	15,745,454	4.66
Wasatch	43,146,554	1.67	603,037	1.40
State of Utah	2,584,024,228	100.00	138,905,853	5.38

SOURCE: Utah State Tax Commission 2012a

Table 3-277 summarizes total property taxes levied, as well as taxes levied by utilities, for each of the study areas in Utah. The Wasatch Front Region has the greatest property taxes levied as compared with the other three study areas, accounting for almost 14 percent of Utah’s property taxes generated in 2011. The Central Utah Region is most reliant on utility taxes, which account for 33 percent of the property taxes levied in this region.

TABLE 3-277				
2011 PROPERTY TAX REVENUE BY UTAH REGIONAL STUDY AREAS				
Study Area in Utah	Property Taxes Levied (dollars)	Percent of Utah’s Property Taxes Levied	Utility Property Taxes Levied (dollars)	Percent of Utility Property Taxes Levied to Total Property Taxes Levied in the Study Area
Central Utah	73,471,176	2.8	24,376,116	33.2
Eastern Utah	84,837,811	3.3	6,899,950	8.1
Wasatch Front	380,985,378	14.7	16,348,491	4.3

SOURCE: Utah State Tax Commission 2012a

Construction

Construction values can provide an indicator of the health of an economy. In addition, the construction industry would be an integral part of the development of the transmission line. This section includes a

discussion of the Construction Gross Domestic Product (GDP)¹¹ of the state and metropolitan areas within the study area. It also provides housing characteristics for each study area region obtained from the 2010 census.

Construction GDP was only available at the state level and for U.S. Census Bureau-designated metropolitan statistical areas. There are two metropolitan statistical areas within the study area: Grand Junction, Colorado; and Provo-Orem, Utah. In Provo-Orem, the construction GDP between 2007 and 2010 declined; while Grand Junction experienced a small decline between 2009 and 2010. Colorado and Utah have experienced decreases in construction GDP since 2006. In Wyoming, the construction industry has remained relatively stable over this 4-year period. The construction industry GDP values are summarized in Table 3-278.

Year	Region				
	Grand Junction, Colorado (metropolitan statistical area)	Provo-Orem, Utah (metropolitan statistical area)	Colorado	Wyoming	Utah
2001	322	680	13,755	1,370	4,700
2002	343	743	14,099	1,452	4,789
2003	326	696	13,271	1,437	4,656
2004	333	774	14,023	1,463	5,108
2005	378	858	15,620	1,708	6,059
2006	407	1,007	16,312	2,089	7,197
2007	396	1,030	15,273	2,317	7,328
2008	445	838	14,796	2,634	6,534
2009	770	370	13,128	2,129	6,639
2010	672	271	11,738	2,080	6,255
Percent Change	109	-60	-15	52	33

SOURCE: U.S. Bureau of Economic Analysis 2012g
 NOTE: Values were adjusted for inflation using the Consumer Price Index published by the Executive Office of the President, Office of Management and Budget (2012) and are reported in 2010 dollars.

Housing Resources

This section provides information on the availability of housing in the study area regions, including occupied and vacant housing units, vacant housing units available for rent, and the numbers of hotels, motels, and RV parks.

Southwestern Wyoming and Moffat County, Colorado Region

In the Southwestern Wyoming and Moffat County, Colorado Region, there were approximately 34,000 housing units in 2010, 85 percent of which were occupied. The majority of these housing units were in Sweetwater County, Wyoming. It should be noted that many of the vacant housing units are for seasonal, recreation, or occasional use. There were approximately 1,500 vacant rental units in 2010 in this region. Housing values and costs were higher in Moffat and Sweetwater counties, Colorado, and lower in Carbon County, Wyoming. In 2010, the median housing value in the study area region was \$159,807. Housing characteristics for the Southwestern Wyoming and Moffat County, Colorado Region are summarized in Table 3-279. Additionally, according to the Wyoming Office of Tourism (2013), there are at least 12 RV

¹¹Industry Gross Domestic Product, also known as “value added,” is defined as the gross output (or sales or revenues) minus its intermediate inputs (consumption of goods and services purchased from other industries or imported).

parcs in southwestern Wyoming, not including state and national parks and RV campgrounds, as well as 80 hotels and motels.

**TABLE 3-279
 HOUSING CHARACTERISTICS IN SOUTHWESTERN WYOMING AND MOFFAT COUNTY,
 COLORADO STUDY AREA REGION, 2010**

Housing Characteristics	Moffat County, Colorado	Carbon County, Wyoming	Sweetwater County, Wyoming	Southwestern Wyoming Region	Relevant Percentage for Southwestern Wyoming Region	Wyoming
Total Housing Units	6,196	8,576	18,735	33,507	–	2,261,868
Occupied	5,465	6,388	16,475	28,328	85	226,879
Vacant	731	2,188	2,260	5,179	15	34,989
For rent	192	365	934	1,491	29	7,304
Rented or sold, not occupied	25	77	69	171	3	1,239
For sale only	77	162	337	576	11	3,376
For seasonal, recreational or occasional use	268	1,070	295	1,633	32	14,892
All other vacants	169	514	625	1,308	25	8,178
Owner-Occupied Housing Units	3,803	4,552	11,872	20,227	60	157,077
Renter-Occupied Housing Units	1,662	1,836	4,603	8,101	24	69,802
Rental Vacancy Rate	10.3%	16.5%	16.8%	15.5%	–	9.4%
Median Gross Rent	\$735	\$702	\$801	\$765	–	\$666
Median Value of Owner Occupied Housing (2010 dollars)	\$166,300	\$129,100	\$169,500	\$159,807	–	\$174,000
Median Monthly Owner Mortgage Costs	\$1,238	\$1,054	\$1,300	\$1,233	–	\$1,249

SOURCES: U.S. Census Bureau 2012j, k

Northwestern Colorado Region

In the Northwestern Colorado Region, approximately 105,600 housing units existed in 2010, 86 percent of which were occupied. The majority of these housing units were in Mesa County, Colorado, which houses the city of Grand Junction. There were more than 3,500 vacant rental units in 2010 in the region. It should be noted that many of the vacant housing units are for seasonal, recreation, or occasional use. Housing values were highest in Routt County (where the resort town of Steamboat Springs is located), while the lowest housing values in the region were in Rio Blanco County. In 2010, the median housing value in the study area region was \$268,013. Similarly, housing and rental costs were highest in Routt County, while the lower housing and rental costs were in Rio Blanco County. Housing characteristics for the Northwestern Colorado Region are summarized in Table 3-280. Additionally, according to the Colorado Tourism website (2013), there are at least 7 RV parks in northwestern Colorado, not including state and national parks and RV campgrounds as well as 25 hotels and motels in the communities and Craig, Grand Junction, and Fruita, Colorado.

**TABLE 3-280
 HOUSING CHARACTERISTICS FOR NORTHWESTERN COLORADO REGION, 2010**

Housing Characteristics	Garfield County, Colorado	Mesa County, Colorado	Rio Blanco County, Colorado	Routt County, Colorado	Northwestern Colorado Region	Relevant Percentage for Northwestern Colorado Region	Colorado
Total Housing Units	23,309	62,644	3,309	16,303	105,565	–	2,212,898
Occupied	20,359	58,095	2,647	9,892	90,993	91	1,972,868
Vacant	2,950	4,549	662	6,411	14,572	9	240,030
For rent	1,365	1,330	190	678	3,563	24	57,644
Rented or sold, not occupied	66	217	16	81	380	3	8,476
For sale only	419	949	57	350	1,775	12	32,673
For seasonal, recreational or occasional use	722	944	279	4,936	6,881	47	101,965
All other vacants	378	1,109	120	366	1,973	14	39,272
Owner-Occupied Housing Units	13,417	41,506	1,875	6,914	63,712	71	1,293,100
Renter-Occupied Housing Units	6,942	16,589	772	2,978	27,281	29	679,768
Rental Vacancy Rate	16.4%	7.4%	19.6%	18.4%	11.5%	–	7.8%
Median Gross Rent	\$1,052	\$810	\$674	\$1,127	\$902	–	\$852
Median Value of Owner Occupied Housing (2010 dollars)	\$341,600	\$221,900	\$193,300	\$422,300	\$268,013	–	\$2,236,600
Median Monthly Owner Mortgage Costs	\$1,730	\$1,379	\$1,128	\$1,819	\$1,493	–	\$1,636

SOURCES: U.S. Census Bureau 2012j, k

Eastern Utah Region

In the Eastern Utah Region, approximately 27,000 housing units existed in 2010, 76 percent of which were occupied. The majority of these housing units were in Duchesne and Uintah counties. It should be noted that many of the vacant housing units are for seasonal, recreation, or occasional use. There were over 600 vacant rental units in this region in 2010. Housing values were highest in Grand County, while the lowest housing values in the region were in Duchesne County. In 2010, the median housing value in the study area region was \$178,769. Housing and rental costs were highest in Uintah County, while the lowest rental costs were in Daggett County. Housing characteristics for Eastern Utah Region are summarized in Table 3-281. According to Utah Travel Industry, there are 29 RV parks the Vernal, Roosevelt, and Duchesne, Utah region as well as 29 hotels and motels (Utah Travel Industry 2013).

**TABLE 3-281
 HOUSING CHARACTERISTICS FOR EASTERN UTAH REGION, 2010**

Housing Characteristics	Daggett County, Utah	Duchesne County, Utah	Uintah County, Utah	Grand County, Utah	Eastern Utah Region	Relevant Percentage for Eastern Utah Region	Utah
Total Housing Units	1,141	9,493	11,972	4,816	27,422	–	979,709
Occupied	426	6,003	10,563	3,889	20,881	76	877,692
Vacant	715	3,490	1,409	927	6,541	24	102,017
For rent	4	141	341	118	604	9	20,176
Rented or sold, not occupied	3	105	73	36	217	3	4,236
For sale only	10	107	303	40	460	7	14,580
For seasonal, recreational or occasional use	665	2,803	313	596	4377	67	47,978
All other vacants	32	334	379	137	882	13	15,047
Owner-Occupied Housing Units	310	4,648	7,885	2,613	15,456	56	618,137
Renter-Occupied Housing Units	116	1,355	2,678	1,276	5,425	20	259,555
Rental Vacancy Rate	4.1%	9.2%	11.2%	8.4%	9.9%	–	7.2%
Median Gross Rent	\$718	\$663	\$911	\$729	\$802	–	\$781
Median Value of Owner Occupied Housing (2010 dollars)	\$181,800	\$162,600	\$183,100	\$194,100	\$178,769	–	\$218,100
Median Monthly Owner Mortgage Costs	\$1,101	\$1,123	\$1,235	\$1,088	\$1,174	–	\$1,440

SOURCES: U.S. Census Bureau 2012j, k

Wasatch Front Region

In the Wasatch Front Region, almost 159,000 housing units existed in 2010, 93 percent of which were occupied. The majority of these housing units were in Utah County. It should be noted that many of the vacant housing units are for seasonal, recreation, or occasional use. There were more than 2,000 vacant rental units in 2010 in this region. Housing values were higher in Wasatch County than in Utah County. In 2010, the median housing value in the study area region was \$238,332. Housing and rental costs were also slightly higher in Wasatch County than those in Utah County. Housing characteristics for the Wasatch Front Region are summarized in Table 3-282. There are many hotels and motels located in the Wasatch Front in the proximate communities of Nephi, Provo, and Springville, Utah (Utah Travel Industry 2013).

**TABLE 3-282
 HOUSING CHARACTERISTICS FOR WASATCH FRONT REGION, 2010**

Housing Characteristics	Utah County	Wasatch County	Wasatch Front Region	Relevant Percentage for Wasatch Front Region	Utah
Total Housing Units	148,350	10,577	158,927	–	979,709
Occupied	140,602	7,287	147,889	93	877,692
Vacant	7,748	3,290	11,038	7	102,017
For rent	1,891	156	2,047	19	20,176
Rented or sold, not occupied	637	76	713	6	4,236
For sale only	2,268	345	2,613	24	14,580
For seasonal, recreational or occasional use	1,277	2,559	3,836	35	47,978
All other vacants	1,675	154	1,829	17	15,047
Owner-Occupied Housing Units	96,053	5,471	101,524	64	618,137
Renter-Occupied Housing Units	44,549	1,816	46,365	29	259,555
Rental Vacancy Rate	4.1%	7.8%	4.2%	–	7.2%
Median Gross Rent	\$773	\$888	\$778	–	\$781
Median Value of Owner Occupied Housing (2010 dollars)	\$233,800	\$317,900	\$238,332	–	\$218,100
Median Monthly Owner Mortgage Costs	\$1,500	\$1,754	\$1,514	–	\$1,440
SOURCES: U.S. Census Bureau 2012j, k					

Central Utah Region

In the Central Utah Region, almost 28,000 housing units existed in 2010, 81 percent of which were occupied. The majority of these housing units were in Carbon and Sanpete counties. It should be noted that many of the vacant housing units are for seasonal, recreation, or occasional use, although there were more than 600 vacant rental units in 2010 in this region. Housing values were highest in Juab County, while the lowest housing values in the region were in Emery County. In 2010, the median housing value in the study area region was \$129,906. Rental costs were highest in Juab County, while the lowest rental costs were in Sanpete County. Housing characteristics for Central Utah Region are summarized in Table 3-283. In central Utah, there are approximately 20 RV parks and 7 hotels and motels in the Price and Huntington, Utah area (Utah Travel Industry 2013).

**TABLE 3-283
 HOUSING CHARACTERISTICS FOR CENTRAL UTAH REGION, 2010**

Housing Characteristics	Carbon County, Utah	Emery County, Utah	Sanpete County, Utah	Juab County, Utah	Central Utah Region	Relevant Percentage for Central Utah	Utah
Total Housing Units	9,551	4,489	10,379	3,502	27,921	–	979,709
Occupied	7,978	3,732	7,952	3,093	22,755	81	877,692
Vacant	1,573	757	2,427	409	5,166	19	102,017
For rent	216	214	136	71	637	12	20,176
Rented or sold, not occupied	51	28	39	19	137	3	4,236
For sale only	125	31	112	58	326	6	14,580
For seasonal, recreational or occasional use	722	258	1,817	99	2896	56	47,978
All other vacants	459	226	323	162	1170	23	15,047
Owner-Occupied Housing Units	5,744	3,006	5,955	2,443	17,148	61	618,137
Renter-Occupied Housing Units	2,234	726	1,997	650	5,607	20	259,555
Rental Vacancy Rate	8.7%	22.6%	6.3%	9.8%	10.1%	–	7.2%
Median Gross Rent	\$542	\$594	\$524	\$699	\$561	–	\$781
Median Value of Owner Occupied Housing (2010 dollars)	\$109,200	\$105,100	\$148,700	\$163,300	\$129,906	–	\$218,100
Median Monthly Owner Mortgage Costs	\$1,008	\$911	\$1,047	\$1,159	\$1,026	–	\$1,440
SOURCES: U.S. Census Bureau 2012j, k							

Schools

In 2010, a total of 412 schools were located within the 17-county study area, attended by approximately 203,190 students (U.S. Department of Education 2010). School information is presented in detail in the Gateway South Socioeconomic Baseline Assessment, including county, school district, number of schools, and enrollment figures for the 2009/2010 school year. Aggregate school information by study area region is presented in Table 3-284.

Region	Number of Schools	Number of Students Served	Population	Number of Schools per Capita
Southwestern Wyoming and Moffat County, Colorado Region	51	12,620	73,486	0.000694
Northwestern Colorado Region	97	37,636	233,287	0.000416
Eastern Utah Region	40	13,224	61,479	0.000651
Wasatch Front Region	172	124,952	540,094	0.000318
Central Utah Region	52	14,758	70,447	0.000738
Total	412	203,190	978,793	0.000420

SOURCE: U.S. Department of Education 2010

Police Protection and Emergency Services

A total of 66 police departments and sheriff’s offices provide emergency services throughout the study area (USACOPS 2012). Utah County, Utah and Garfield County, Colorado have the largest numbers of law enforcement establishments. Fourteen police departments operate in Utah County, while Garfield County operates six. Each of the 17 counties in the study area also has its own sheriff’s department. These law enforcement services are detailed in the Gateway South Socioeconomic Baseline Assessment. Each state maintains a fully empowered law enforcement agency with statewide jurisdiction. These state police agencies operate as part of either the Department of Transportation (Wyoming Highway Patrol) or the Department of Public Safety (Utah Highway Patrol and Colorado State Patrol).

Fire-fighting services are located at 156 professional and volunteer-run fire stations throughout the study area, with a combined response force of 3,368 personnel (U.S. Fire Administration 2012a, b, c). The fire-fighting services are detailed in the Gateway South Socioeconomic Baseline Assessment and summarized in Table 3-285. Utah County maintains the highest number of such facilities in the study area, with a total of 20 individual fire and emergency response departments.

Region	Number of Fire Stations	Personnel	Regional Population	Population Per Emergency Service Personnel
Southwestern Wyoming and Moffat County, Colorado	38	630	73,486	117
Northwestern Colorado	45	823	233,287	283
Eastern Utah	14	196	61,479	314
Central Utah	23	932	70,447	76
Wasatch Front	36	787	540,094	686

SOURCES: U.S. Fire Administration 2012a, b, c

Numerous facilities for health and emergency medical care are located throughout the 17-county study area. These are presented in detail in the Gateway South Socioeconomic Baseline Assessment and summarized in Table 3-286.

Region	Number of Hospitals/ Medical Centers	Number of Patient Beds	2000 Population	Population per Available Patient Bed
Southwestern Wyoming and Moffat County, Colorado	3	159	66,436	418
Northwestern Colorado	10	755	185,722	246
Eastern Utah	3	106	49,001	462
Wasatch Front	8	1,129	383,751	340
Central Utah	4	146	70,447	483
Total	28	2,295	755,357	329

SOURCE: U.S. Department of Health and Human Services 2009a

Two counties within the study area have been designated as medically underserved areas¹² (U.S. Department of Health and Human Services 2009a); these are Daggett County in the Eastern Utah Region and Emery County in Central Utah Region (U.S. Department of Health and Human Services 2009b). Residents of eastern Emery County who are in need of medical attention must travel to the Green River Medical Center in Green River, Utah (Association for Utah Community Health 2008). Residents in Daggett County have access to a medical clinic in Manila operated by the Uintah Basin Medical Center. They also can drive approximately an hour south to the Ashley Regional Medical Center in Vernal, Utah.

3.2.20.3.8 Environmental Justice

Executive Order 12898, issued in 1994, directs federal agencies to incorporate environmental justice as part of their mission by identifying and addressing the effects of programs, policies, and activities on minority and low-income populations. The fundamental principles of Executive Order 12898 are as follows:

- Ensure full and fair participation by potentially affected communities in the decision-making process
- Prevent the denial of, reduction, or significant delay in the receipt of benefits by minority or low-income populations
- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- Encourage meaningful community representation in the NEPA process through the use of effective public participation strategies and special efforts to reach out to minority and low-income populations
- Identify mitigation measures that address the needs of the affected low-income and minority populations

An environmental justice assessment requires an analysis of whether minority and low-income populations (i.e., populations of concern) would be affected by a proposed federal action and whether they would experience adverse impacts from the Project. If there are negative impacts, the severity and proportion of these impacts on populations of concern must be assessed in comparison to the larger

¹²Medically Underserved Areas/Populations are areas or populations designated by the Health Resources and Services Administration of the U.S. Department of Health and Human Services as having: too few primary care providers, high infant mortality, high poverty, and/or high elderly population.

majority population or populations not classified as low-income or minority. At issue is whether such negative impacts fall disproportionately on minority and/or low-income members of the community and, if so, whether they meet the threshold of disproportionately high and adverse. If disproportionately high and adverse effects are evident, EPA guidance advises consideration of alternatives and mitigation actions in coordination with extensive community outreach efforts (1998b).

The EPA defines a community with potential environmental justice populations as one that has a greater percentage of minority or low-income populations than does an identified reference community. Minority populations are those populations having (1) 50 percent minority population in the affected area; or (2) a significantly greater minority population than the reference area (EPA 1994). The EPA has not specified any percentage of the population that can be characterized as “significant” to define environmental justice populations. Therefore, for the purposes of this analysis, a conservative approach is used to identify potential environmental justice populations. It is assumed that if the affected area minority and/or poverty status populations are more than 10 percentage points higher than those of the reference area, there is likely an environmental justice population of concern. For this analysis, minority includes all racial groups other than white, not Hispanic or Latino. For the year 2010, low income populations were defined as those individuals that are considered living below poverty levels. The U.S. Census Bureau defines poverty level thresholds for individuals and a family of four as income levels below \$11,139 and \$22,314, respectively (U.S. Census Bureau 2012l).

The minority environmental justice analysis is undertaken at the Census Block level, which allows a granular assessment of only the racial and ethnicity characteristics of the populations. Poverty information is only available at the Census Tract level of analysis for 2010. All Census Blocks (minority) and Census Tracts (poverty) are analyzed within 1 mile of all of the proposed transmission line routes.¹³

The reference areas with which to compare the Census Blocks and Tracts are the county and the state in which the Census Block or Tract is located. Relevant 2010 Census Bureau ethnicity and poverty data for the Census Blocks and Tracts were used to determine whether populations residing within the affected area constitute a potential environmental justice population. This was done by comparing minority and poverty statistics for the Census Blocks and Tracts with those reported for the relevant county or state.

Census Tracts with Potential Low-Income Environmental Justice Populations

Table 3-287 summarizes the county and state poverty populations in the study area. In 2010, there were no Census Tracts of environmental justice concern on the basis of Census Tracts with poverty populations of more than 10 percentage points higher than the county or state in which they are located. In addition, none of the Census Tracts within the study area contain populations having more than 20 percent of residents living below the poverty level, which is how the U.S. Census Bureau has defined a poverty area.

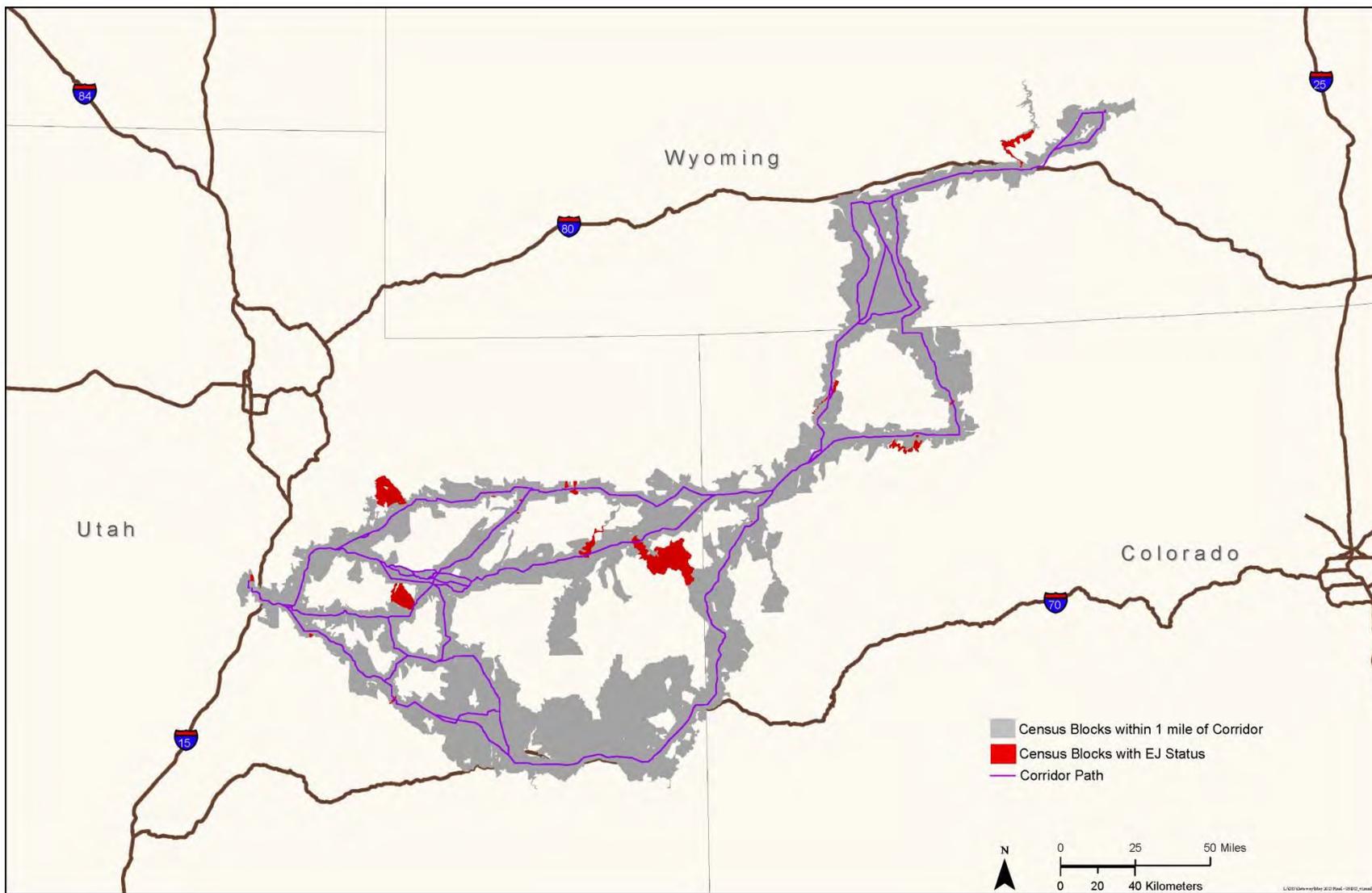
¹³Census Tracts are small statistical subdivisions of a county, with 1,200 to 8,000 residents typically. The boundaries are usually delineated by local committees, and do not cross county or state lines. Census Tracts are further subdivided into Block Groups and Block Groups are further subdivided into Census Blocks. A Block Group is a collection of one or more Census Blocks and a statistical division of a Census Tract. Census Block Groups do not cross Census Tract, county, or state boundaries. In general, a Block Group is comprised of 600 to 3,000 residents. A Census Block is a component of a Block Group and is small in area, in general, especially in cities. However, Census Blocks in rural or remote areas may cover hundreds of square miles.

TABLE 3-287 ENVIRONMENTAL JUSTICE INFORMATION FOR LOW INCOME POPULATIONS		
Geography	Total Population for Whom Poverty Status is Determined	Percent in Poverty
Wyoming	532,245	9.8
Carbon County, Wyoming	14,153	8.2
Sweetwater County, Wyoming	41,560	8.2
Colorado	4,773,303	12.2
Garfield County, Colorado	53,862	9.2
Mesa County, Colorado	139,868	12.4
Moffat County, Colorado	13,493	13.0
Rio Blanco County, Colorado	6,409	5.3
Routt County, Colorado	22,501	6.9
Utah	2,613,440	10.8
Carbon County, Utah	19,934	12.6
Daggett County, Utah	764	8.4
Duchesne County, Utah	17,089	10.8
Emery County, Utah	10,588	10.0
Grand County, Utah	8,761	12.6
Juab County, Utah	9,804	10.5
Sanpete County, Utah	24,682	17.8
Uintah County, Utah	30,757	11.7
Utah County, Utah	474,860	12.8
Wasatch County, Utah	22,112	6.1
SOURCE: U.S. Census Bureau 2012m		

Census Blocks with High Concentrations of Minority Populations

Potential environmental justice minority populations are displayed in Table 3-288. In 2010, there were a total of 3,643 Census Blocks within 1 mile of the transmission line routes. Of those, more than two-thirds of the Census Blocks (84 percent) contained no resident populations. Of the remaining 584 Census Blocks, 547 Census Blocks or 94 percent did not comprise environmental justice populations and 37 Census Blocks were identified as having minority environmental justice populations. The 37 environmental justice Census Blocks have a population of 517, with over half of the potential environmental justice populations in these Blocks located in Blocks in Uintah County and crosses the Uintah and Ouray Indian Reservation. The distribution of the Census Blocks with potential minority environmental justice populations by county is provided in Table 3-288 and depicted on Figure 3-9. State and county ethnicity percentages are provided in Table 3-289.

TABLE 3-288				
NUMBER OF CENSUS BLOCKS WITH ENVIRONMENTAL JUSTICE POPULATIONS BY COUNTY WITHIN 1 MILE OF TRANSMISSION LINE ROUTES				
Geography	Within 1-mile of Alternative Routes		Potential Minority Environmental Justice Populations	
	Number of Census Blocks	Population of Census Blocks	Number of Census Blocks	Population of Census Blocks
Wyoming				
Carbon County, Wyoming	396	858	3	83
Sweetwater County, Wyoming	39	6	0	–
Total Wyoming Blocks and Population within Study Area	435	864	3	83
Colorado				
Garfield County, Colorado	16	0	0	–
Mesa County, Colorado	14	105	0	–
Moffat County, Colorado	352	1,167	4	24
Rio Blanco County, Colorado	170	767	1	3
Routt County, Colorado	13	90	0	–
Total Colorado Blocks and Population within Study Area	565	2,129	5	27
Utah				
Carbon County, Utah	364	1,868	1	10
Duchesne County, Utah	458	2,502	7	19
Emery County, Utah	526	345	3	27
Grand County, Utah	101	51	0	–
Juab County, Utah	202	1,959	5	46
Sanpete County, Utah	329	1,249	2	5
Uintah County, Utah	343	777	10	296
Utah County, Utah	263	149	0	–
Wasatch County, Utah	65	6	1	4
Total Utah Blocks and Population within Study Area	2,651	8,906	29	407
Study Area				
Total Blocks and Population within the Study Area	3,651	11,899	37	517
SOURCE: U.S. Census Bureau 2012n				



SOURCES: Environmental Systems Research Institute 2012; U.S. Census Bureau 2012c

Figure 3-9 Environmental Justice Census Blocks, Minority Populations

Geography	Total Population	Minority Percent									
		White, Not Hispanic or Latino ¹	Minority ²	White, Hispanic or Latino ¹	Black or African American	American Indian or Alaskan Native	Asian	Native Hawaiian or Pacific Islander	Hispanic or Latino ¹	Some Other Race	Two or More Races
State of Wyoming	15,885	94.20	5.80	4.86	10.73	11.01	10.69	10.09	26.80	16.46	12.25
Carbon County	43,806	79.84	20.16	8.94	11.00	10.97	10.77	10.10	25.27	16.39	12.33
Sweetwater County	5,029,196	80.88	19.12	7.57	4.01	1.11	2.76	0.13	7.24	20.65	3.43
State of Colorado	5,029,196	70.01	29.99	11.30	4.01	1.11	2.76	0.13	7.24	20.65	3.43
Garfield County	56,389	68.78	31.22	13.45	10.68	11.13	10.66	10.08	38.34	22.63	12.59
Mesa County	14,6723	83.11	16.89	6.30	10.64	11.06	10.76	10.11	23.33	15.37	12.65
Moffat County	13,795	82.73	17.27	7.32	10.30	10.88	10.56	10.05	24.39	15.94	12.22
Rio Blanco County	6,666	86.35	13.65	5.51	10.75	10.89	10.33	10.17	19.98	13.74	12.28
Routt County	23,509	90.65	9.35	4.12	10.42	10.46	10.64	10.07	16.81	12.08	11.56
State of Utah	2,763,885	80.38	19.62	5.71	1.06	1.19	2.00	0.89	6.03	12.97	2.73
Carbon County	21,403	84.13	15.87	8.18	10.43	11.18	10.58	10.11	22.42	13.03	12.36
Daggett County	1,059	94.43	5.57	1.51	10.38	10.76	10.38	10.09	13.12	11.42	11.04
Duchesne County	18,607	87.12	12.88	2.03	10.24	14.53	10.28	10.27	16.00	12.64	12.89
Emery County	10,976	92.09	7.91	1.83	10.24	10.71	10.35	10.08	15.96	13.84	10.87
Grand County	10,246	84.11	15.89	4.86	10.24	10.88	10.21	10.15	13.70	11.10	11.46
Juab County	27,822	94.00	6.00	1.95	10.82	11.10	10.54	10.50	19.41	14.86	11.76
Sanpete County	32,588	86.65	13.35	3.77	10.37	17.70	10.51	10.23	17.15	12.23	12.33
Uintah County	516,564	82.85	17.15	3.78	10.54	10.60	11.36	10.76	20.80	14.64	12.72
Utah County	23,530	84.15	15.85	5.24	10.34	10.54	10.77	10.12	23.53	16.43	11.39
Wasatch County	563,626	84.22	15.78	6.19	0.84	2.37	0.79	0.08	3.02	8.91	2.19

SOURCE: U.S. Census Bureau 2012c

NOTES:

¹People of Hispanic origin may be of any race, and therefore, these Hispanic percentages are not a mutually exclusive category. Hispanics can choose one or more race categories, including White, Black or African American, American Indian and Alaska Native, Asian, and Native Hawaiian, Other Pacific Islander, some other race or two or more races.

²Minority populations include all races and ethnicities except for those that are identified as white, not Hispanic populations.

3.2.20.4 Study Methodology

The environmental consequences analysis evaluates how the social and economic effects of the construction and operations phases of the Project, both positive and negative, are distributed among the communities and counties in the study area. The dimensions of the Project-related impacts are described, as consistent with the BLM Land Use Planning Handbook (2005b), as follows:

- Space – impacts across multiple scales
- Time – impacts among multiple time scales
- Social identity – who would be affected and in what ways
- Magnitude – the magnitude and significance of projected impacts
- Probability – the likelihood of a project impact occurring
- Causation – the direct, indirect, and cumulative projected impacts
- Acceptability – the anticipated desirability or acceptability of projected impacts

As such, a set of criteria were developed specifically for this analysis on which the alternative routes were evaluated. The criteria are summarized as follows:

- Displace or require relocation of a substantial number of existing residents
- Generate demand for temporary housing of construction workers that exceeds the supply of local housing or hotel/motel facilities
- Have a substantial impact on property values
- Require public service expenditures substantially greater than available approved revenue
- Disproportionately adversely affect minority and/or low-income populations

Socioeconomic impacts are described and quantified where possible. However, where quantification of impacts was not possible, the analysis included a qualitative discussion of possible effects. The analysis includes separate but integrated approaches to addressing economic, demographic, fiscal, and social impacts using the methods and approaches discussed.

A standard regional economic impact method was used to evaluate any economic impacts (employment, income, and economic output) due to the construction and operation of the Project. Estimates of construction and operation workforce were used to describe the impacts on regional employment and population. With estimates associated with employment and population, other local impacts, such as housing, emergency services, schools, and other public and community services can be evaluated. For example, with an increase in employment, increases in population, housing, and demand for public services may also occur.

Anticipated changes in property tax revenues associated with development and operations of the Project were estimated through methods consistent with those described and applied at the state level, although the taxes are assumed to primarily accrue to the counties. For example, in Utah utilities are taxed based on applying an average tax rate to the construction cost of each segment of the line. The average tax rate for utilities can be estimated by dividing total taxes charged against utilities in Utah by the total assessed value of utilities in 2010 (Utah State Tax Commission 2012a). It is anticipated that tax revenues would fall after the first year of service as assessed values would consider cost of operation. A capitalization rate was applied to cost of construction to estimate the decreasing assessed valuation, to which the annual tax rate was applied. Property tax revenue estimates for Wyoming and Colorado are estimated as consistent with the property tax approaches used in their respective states.

An environmental justice analysis is conducted to determine if any environmental justice populations are present within the study area. The environmental justice analysis is conducted in compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and

Low-Income Populations, and follows guidance published by the EPA (1994). The environmental justice analysis involves two basic steps:

- Determine if environmental justice populations exist in the relevant study area
- If environmental justice populations exist, determine if they would be disproportionately affected by development and operation of the Project

To identify the presence of potential environmental justice populations residing in proximity to the alternative routes, it is necessary to create an affected area for a smaller geographic area than that of the defined socioeconomic study area. Populations are analyzed at the Census Block and Census Tract level located within 1 mile of all alternative routes. The populations located in these Census Blocks and Census Tracts are compared with those of the reference communities in terms of percentages of minority and low-income populations. Reference communities for the analysis are defined as the county and/or the state in which the Tract or Block was located; if the percentages of low income and/or minority populations within proximity to the alternative routes significantly exceed those of the reference communities, further environmental justice assessment is undertaken. If no environmental justice populations are identified, no further analysis is needed.

Once the locations of the environmental justice populations are identified, all adverse effects are considered to determine if the Project has the potential to have a “disproportionately high and adverse” impact (human health or environmental effect) to these populations. Impacts of the Proposed Action include cumulative and multiple impacts, and are evaluated to determine which, if any, disproportionately and adversely affect these populations.

3.2.20.5 Results

3.2.20.5.1 No Action Alternative

If no action were taken, the Project would not be granted a right-of-way and the transmission lines and substations would not be constructed. The human environment would remain as is and management direction from the current management plans would continue. Under the No Action, none of the social and economic impacts described under the alternative routes would be realized. However, without the Project, the existing system would not be upgraded, and as a result, the Applicant would not be able to ensure sufficient capacity and reliability to meet the electric demands of its current and future customers in the states of California, Idaho, Oregon, Utah, Washington, and Wyoming. The Gateway South Transmission Project is one part of the proposed upgrade to the power transmission system. Without its development, there would be fewer high-voltage transmission lines to provide power from existing and new renewable (e.g., wind, solar) and thermal (e.g., gas, coal) generation sources to meet growing customer needs; ease transmission congestion; and improve the flow of electricity throughout the West (refer to Chapter 1).

3.2.20.5.2 Impacts Common to All Alternatives

Impacts on Employment and Economic Conditions

The construction, operation, and maintenance of the proposed transmission line and related facilities are expected to have beneficial impacts on local employment and economic conditions. The largest potential impact from the Project on employment would occur during the construction phase. Construction of the Project is expected to start in 2018 and conclude by June 2020. Construction is expected to take place year-round as weather and conditions allow. While construction during the summer season may be preferred, there are issues that may require winter construction. Weather conditions typically prohibit construction at higher elevations during winter months. Project schedule, financing, design, and/or

material delivery may not fit within the summer season. Environmental issues and soil conditions also may dictate construction of portions of the line during certain times of the year, for example, to avoid or reduce impacts on wildlife.

The construction of the transmission line for the entire Project is expected to employ at maximum 610 workers (Table 3-290) based on an analysis of the Applicant’s Preferred Alternative. However, at any point in time, the actual personnel would be fewer as the construction would occur across three regions. Construction is expected to occur over 32 months, with three regions or “spreads” in which construction would occur in a ramp up and down approach, as depicted in Figure 3-10.

Months	Spread 1 Wyoming and Colorado	Spread 2 Eastern Utah	Spread 3 Central Utah, East of Clover	Total Manpower
1	29	0	0	29
2	30	0	0	30
3	49	0	0	49
4	49	29	0	78
5	75	49	0	124
6	175	58	0	233
7	175	68	0	243
8	175	94	29	298
9	204	94	39	337
10	204	178	59	441
11	254	178	59	491
12	254	205	46	505
13	254	205	65	524
14	254	205	65	524
15	263	251	65	579
16	263	251	65	579
17	263	254	65	582
18	263	243	104	610
19	263	203	97	563
20	263	103	197	563
21	263	73	185	521
22	263	73	185	521
23	242	20	230	492
24	242	20	230	492
25	204	0	244	448
26	204	0	207	411
27	74	0	205	279
28	20	0	102	122
29	0	0	73	73
30	0	0	73	73
31	0	0	20	20
32	0	0	19	19

SOURCE: POWER Engineers 2013

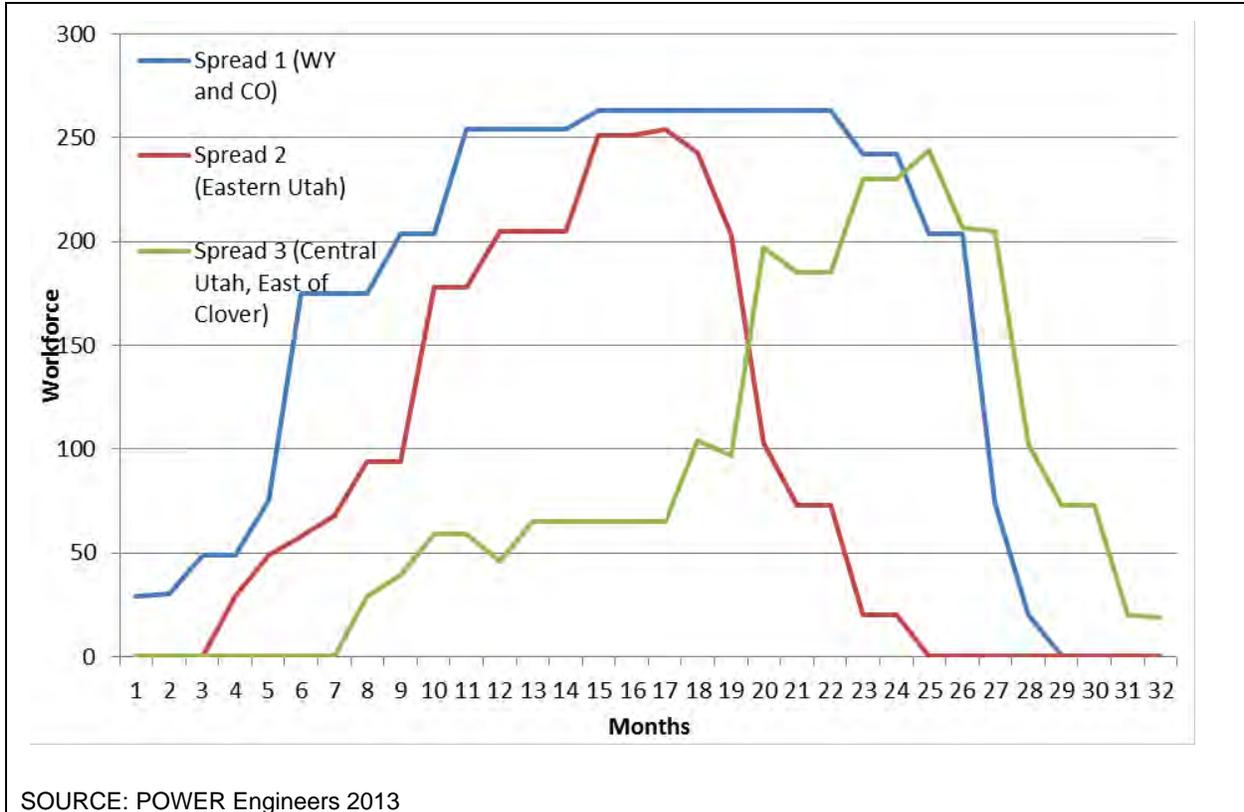


Figure 3-10 Construction Workforce Requirements by Spread (Location)

The first spread is in Wyoming and Colorado and construction would occur during months 1 through 28. The second spread is in Eastern Utah with construction beginning in month 4 for 20 months. The third spread closest to Clover, Utah would be the final stretch to be constructed, starting in month 8 for 24 months. The first spread in Wyoming and Colorado is expected to have the largest peak number of workers of 263 for 8 months. During the construction periods for spreads 1, 2, and 3, there would be average annual employment of 188, 136, and 109 construction workers, respectively, or approximately 433 average annual construction jobs across the three spreads. Since the COUT BAX alternative routes are longer than the Applicant’s Preferred Alternative, it is possible that workforce estimates would be slightly higher for these routes.

Additionally, construction workforce would also be required for the two substations during this period. Each substation would be constructed over approximately 22 months, with a peak of 35 construction workers occurring during the initial part of the construction for site development, with an average annual workforce of 21 construction workers for each substation. For construction of the two substations and the transmission line, approximately 475 average annual construction jobs would be required during the 22-month substation construction, and 433 average annual construction jobs during the remainder of the 32-month transmission line construction.

Operation and maintenance of the transmission line and substations would require three employees. It is expected that work would be performed by current Rocky Mountain Power employees or current contract employees.

The construction of the proposed line and facilities would require a number of tasks and associated specialized skill sets. An estimate of the number of individuals and types of construction workforce positions are shown in Table 3-291.

Tasks	Number of Maximum Workforce Positions			
	Total	Spread 1	Spread 2	Spread 3
Construction management and supervision	45	15	15	15
Inspection	33	12	12	9
Contractor mobilize equipment and prepare yards	27	9	9	9
Project yard layout and make ready for construction	12	4	4	4
Receipts and storage and project materials	24	8	8	8
Survey and stake access roads and work areas	18	6	6	6
Construct access roads and structure pads	36	9	9	18
Tree cleaning	36	0	18	18
Install foundations	105	35	35	35
Haul and assemble structures	294	98	98	98
Erect structures	78	26	26	26
Install overhead optical ground wire and conductors	138	46	46	46
Cleanup and restoration	36	12	12	12
SOURCE: POWER Engineers 2013				

It is possible that some construction workers may commute from their residences. This would be the case in spread 3, which is the closest spread to Clover and the urban Wasatch Front. Spread 3 would likely be supported by workforce located in the urban areas of Provo, Orem, and Lehi, Utah and other proximate communities, such as Price, Utah. It is possible that construction workforce for spread 1 in Wyoming and Colorado and spread 2 in eastern Utah would be partially supported by workforce located in Rawlins, Wyoming, Grand Junction and Craig, Colorado, and Vernal, Roosevelt, and Price, Utah. However, due to the relatively more remote nature of these regions, it is also likely that construction workforce from the Denver, Cheyenne, and Salt Lake City regions would also support the Project.

The majority of the workers would live temporarily at locations and communities near the transmission routes. These workers would be expected to live in RV parks, rental houses and apartments, and in local motels and hotels. Although the exact number and location of these crews is not known, it is anticipated that across Wyoming, Colorado, and Utah workers would operate in multiple crews and would be moved to many communities more than 450 miles away, depending on the location of the current transmission line work.

Earnings of 475 construction workers would be approximately \$26.2 million annually, based on average earnings for construction jobs in Utah (BEA 2013).¹⁴ These earnings represent 0.01 percent of the earnings within Wyoming, Colorado and Utah, which was \$241.4 billion in 2011 (BEA 2013).

Construction earnings will support economies in the regions where construction workers live as well as economies in communities with proximity to the Project. As construction workers spend their money in the local communities where they are housed, revenues would increase for some local businesses, such as hotels, restaurants, gas stations, and grocery stores, supporting jobs and incomes for these businesses and their employees. Because some of the construction workers are not anticipated to be permanent residents of the study area, induced spending would be less than locally residing employees as construction workers will send a portion of their earnings to their home area. However, all construction workers would be assumed to reside in Wyoming, Colorado, or Utah, and therefore, an additional \$28 million in induced sales and 95 average annual jobs are assumed to be supported in Wyoming, Colorado, and Utah by

¹⁴Average earnings for construction workers of \$55,127 in 2011 were based on BEA average earnings for the construction industry for Utah, which includes both full-time and part-time employment. Utah construction average earnings fell between Wyoming with \$59,550 and Colorado, \$54,339.

construction workers spending their money in proximate communities and in their permanent home locations.¹⁵ This employment would occur in retail sales, food and beverage establishments, lodging, medical facilities, and others. Overall, the employment and spending would be short-term and is likely to have low socioeconomic impacts on the overall region since it would be dispersed across 17 counties and a number of metropolitan areas. However, if workers temporarily reside in smaller communities for a period of time, the earnings and employment could be more significant for these relatively smaller economies.

Construction expenditures for the transmission line, as shown in Table 3-292, will support construction jobs in the region, positively impacting this industry in the study area. In addition to construction labor expenditures, these costs include materials, development engineering, and equipment. Typically, the largest portion of the cost of transmission lines is for the conductors and their installation. Approximately 50 percent of these expenditures, including the cost of labor, are likely to be sourced from within the three-state region (Keyser and Lantz 2013). These expenditures would support downstream jobs and income within the region.

TABLE 3-292 ESTIMATED CONSTRUCTION COSTS	
Alternative Route	Total Construction Cost¹
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)	
WYCO-B (Applicant Preferred Alternative) and Route Variations WYCO-B-1, WYCO-B-2 [Agency Preferred Alternative], and WYCO-B-3	\$357,643,048
WYCO-C and Route Variations WYCO-C-1, WYCO-C-2, and WYCO-C-3	\$364,018,920
WYCO-D and Route Variation WYCO-D-1	\$428,698,767
WYCO-F and Route Variations WYCO-F-1, WYCO-F-2, and WYCO-F-3	\$364,868,402
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)	
COUT BAX-B	\$471,591,394
COUT BAX-C	\$489,294,368
COUT BAX-E	\$505,027,125
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)	
COUT-A and Route Variation COUT-A-1	\$386,623,601
COUT-B and Route Variations COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, and COUT-B-5	\$406,953,347
COUT-C and Route Variations COUT-C-1, COUT-C-2, COUT-C-3 (Agency Preferred Alternative), COUT-C-4, and COUT-C-5	\$368,591,851
COUT-H (Applicant Preferred Alternative)	\$350,723,549
COUT-I	\$408,678,586
Series Compensation Stations (2)	\$161,064,000
SOURCE: POWER Engineers 2013	
NOTE: ¹ The estimated total construction costs for route variations would not vary substantively from the total construction costs of the alternative route.	

¹⁵This multiplier of 1.2 (for induced employment effects) is based on analysis by Keyser and Lantz (2013), who estimated the economic impacts of new generation and transmission in Wyoming and Colorado.

The estimated other project development costs (not including labor costs) that are assumed to be sourced from the three-state region are estimated to be between \$390 million and \$490 million depending on the alternative route during the life of the Project.¹⁶ This non-labor construction spending would support additional \$498 million to \$622 million in sales for supply chain industries and worker induced spending during the life of the construction activity. On an average annual basis over three years, these additional development costs (non-labor) would support 1,325 to 2,785 jobs in engineering, management, planning, manufacturing, and materials suppliers and sectors (Keyser and Lantz 2013). These directly affected sectors would support downstream economic activity, generating supply chain and induced spending employment of between 583 and 1,230.¹⁷ These jobs and sales are more than likely to accrue to companies and employees in the metropolitan areas of the three-state region, including Denver, Cheyenne, and Salt Lake City. Average annual employment, including construction labor, materials, supplies, engineering services, and downstream employment, would range from 2,478 to 4,585, depending on the alternative route. Again, the bulk of these workers would reside in the metropolitan areas. These figures are summarized in Table 3-293.

	Total Spending or Gross Sales (\$millions) ¹		Average Annual Employment	
	Low	High	Low	High
Total project costs	870	1,095	–	–
Construction labor (approximate)	87	110	475	475
Non-labor project development costs	783	986	–	–
Non-labor project development Costs sourced from within Wyoming, Colorado, and Utah	391	492	1,325	2,785
Supply chain (indirect effects) and worker spending (induced effects) within Wyoming, Colorado, and Utah ²	526	650	678	1,325
Total sales or spending within Wyoming, Colorado, and Utah generated by the project	924	1,142	2,478	4,585

SOURCE: Keyser and Lantz 2013; POWER Engineers 2013
 NOTE: ¹The spending or sales is for the total duration of the Project. ² Supply chain and worker spending estimates include those associated with construction labor expenditures and non-labor Project expenditures.

Impacts on Population

The proposed Project and alternative routes are expected to create a short-term demand for workers due to construction of the Project. However, the expected employment would be sourced from the 17-county study area as well as proximate metropolitan areas, such as Denver, Cheyenne, and Salt Lake City.

¹⁶To estimate non-labor Project costs, the minimum and maximum costs for the WYCO and COUT alternative routes were included along with the substation costs, for a total Project cost ranging from \$870 million to \$1.095 million. Since labor earnings account for approximately 10 percent of the installed cost, the Project costs were reduced by 10 percent. These Project costs were then further reduced by 50 percent to account for materials, services, and equipment sourced from within the three-state region (Keyser and Lantz 2013).

¹⁷To estimate the direct and downstream economic impacts, the analysis used ratios and multipliers from the Keyser and Lantz (2013) analysis of transmission line development in Wyoming and Colorado. These ratios and multipliers were as follows: \$65,714 economic output per job for construction spending; 2.27 multiplier for sales; and 1.44 multiplier for employment.

However, all of the employment would occur within the 17-county region as the construction workforce supports the Project construction over almost three years. A portion of the construction workforce, primarily supporting construction of spread 1 and 2 in Wyoming, Colorado, and eastern Utah, would be temporarily residing in proximate communities during the three-year period.

Approximately 188 and 136 average annual jobs would be required for the construction of spreads 1 and 2, respectively, in addition to 42 jobs for the construction of two substations (spreads 3 and 4), or a total of 366 average annual workers. Since this includes two spreads and 2 substations, there would be at least 4 crews of 188, 136, and 21, and 21 construction workers for each of the spreads and substations. Although some of these workers would be sourced from local communities, it is likely that the majority would be housed temporarily in proximate communities during construction. The temporary residents, spread over southwestern Wyoming, northwestern Colorado, and eastern Utah, are expected to have temporary and minimal impacts on the region's population.

The slight increase in employment is not expected to cause any measurable impacts on population trends. Population growth has varied across the study area with the Wasatch Front experiencing high levels of population growth, which is expected to continue in the future. Northwestern Colorado is also experiencing some population growth although not at a rate as high as growth in the Wasatch Front. Other regions in Wyoming and Utah have been experiencing stagnant population growth. Any changes in population due to the Project would be small, temporary, and would not affect these projected trends.

Impacts on Housing

Although some of the workforce may commute from their residences, it is anticipated that the majority of construction workers would live temporarily at locations in proximity to the transmission routes. These workers would be expected to live in RV parks, rental houses and apartments, and in local motels and hotels. Spread 1 in Wyoming and Colorado would require peak workers of 263, with an annual average workforce of 188. Spread 2 in eastern Utah would require a peak of 254 workers with an annual average workforce of 136, while spread 3 in central Utah would require a peak workforce of 244 with annual average workforce of 109. In addition, the substation construction in Wyoming and eastern Utah would require an additional 42 construction laborers.

As described in the existing environment, there were 1,491; 3,573; 604; 2,047; and 637 vacant rental housing units in 2010 in Southwestern Wyoming (including Moffat County, Colorado), Northwestern Colorado, Eastern Utah, Wasatch Front, and Central Utah regions, respectively, which could provide housing for temporary residents. Additionally, hotels and motels as well as RV parks, as described in the Regional Setting, in proximate communities could also provide temporary rooms and housing for these workers.

Permanent and temporary housing and lodging are adequate in the broader region to house temporary residents in the area. However, housing availability in proximity to the alternative routes is not known. In these remote areas, it may be necessary for workers to commute a fair distance within the region to their worksites along the alternative routes. On a more local level, many of the towns in southwestern Wyoming, northwestern Colorado, and eastern and central Utah are small and remote with limited housing resources. Housing resources are expected to be more prevalent in the relatively larger communities of Rawlins, Wyoming, Craig, Fruita, and Grand Junction, Colorado, and Vernal, Roosevelt, and Price, Utah as well as in the Wasatch Front. Any small, short-term changes in population due to the Project are expected to have moderate impacts on available housing across the region.

Impacts on Government-Provided Services

The Project and all of its alternative routes are expected to have temporary and minimal impacts on government-provided services across the region. This is due to the fact that changes in employment and population are predicted to be small and mostly temporary with the construction, operation, and maintenance of the Project. Due to the linear nature of the Project, its remote location and remarkable length (400 to 550 miles), workers are expected to stay in multiple locations along the alternative routes and move along the route depending on the location of the work. At a more local level, crews may need to be relatively smaller and housed in a number of communities to find adequate housing resources in the remote and small communities, further mitigating the effects on public services and infrastructure. Workers are not expected to bring their families, and therefore impacts on school enrollment are not expected to occur. Emergency services, law enforcement, and medical facilities would be adequate to address the multiple dispersed crews expected to live in temporary or permanent housing along the alternative routes. Therefore, it is not anticipated that there would be a measurable change in supply or demand of relevant government services throughout the study area.

Impacts on Rates and Ratepayers

Capital expenditures for improvements to electric-utility infrastructure are investments made to serve customers. The expenditures are passed on to the customers served in the form of increased rates. However, as a regulated utility, the Applicant can increase rates only on approval by state utility commissions. Such rate-increase requests are subjected to rigorous analysis by regulators and others, and to public process. At this time, not all costs for development of the Project are known; therefore, the Applicant cannot project what the rate increase may be as a result of this Project.

Impacts on Land Use and Recreational Values

Impacts on agriculture anticipated to occur are associated with rangeland disturbance on private lands and BLM and USFS grazing allotments. However, the impacts are expected to be low in the long-term due to the minimal extent of permanent disturbance anticipated on rangelands. Grazing leases on USFS- or BLM-administered lands may be affected by the right-of-way, perhaps requiring slight modifications to the lease stipulations and locations. However, there are negligible economic effects anticipated from these primarily temporary impacts on rangelands.

The impacts on recreational resources have been described in Parks, Preservation, and Recreation Resources. Short- and long-term impacts associated with the development and operation of the transmission line would diminish the natural appearance and the undeveloped character of many areas along the routes, affecting vistas and scenery. Also, depending on reclamation and implementation of mitigation measures, vehicle and ATV use could increase over the longer term as a result of new access roads. In total, an influx or outflow of visitors to the study area is not anticipated to occur; therefore, negligible impacts on the study area economies associated with visitor spending would occur due to these changes in recreation resources. However, there may be some adverse impacts on recreational and other non-market values associated with changes to scenery and vistas surrounding non-motorized and motorized trails, semi-primitive non-motorized and motorized areas, and other areas as more access is likely through the construction of roads to build the transmission line and through the possibility of future development. For more information on these effects, refer to the Parks, Preservation, and Recreation Resources section.

Impacts on Property Taxes

The construction, operation, and maintenance of the transmission line would generate property taxes to counties where the line and substations would be located. The magnitude of these tax revenues for each

alternative was estimated and summarized in Table 3-294. The property taxes for the first years the transmission line would be constructed and in service were estimated for each state with the methods described below. These first years’ taxes would occur during the construction period and initial operation, and as such, are likely to occur over the three-year period of construction. The first year’s property tax receipts range from \$4.6 million (WYCO-B) to \$7.8 million (COUT BAX-B) depending on the alternative route. It is anticipated that tax revenues would fall after the first year of service as assessed values would consider cost of operation. The annual taxes for the remaining years would range from \$463,000 to \$788,000 and are also included in Table 3-299. The two substation properties would contribute taxes to two counties, depending on where each is located. Each substation would contribute between \$630,000 and \$1.8 million in first year’s taxes, and \$52,000 and \$209,000 in property taxes for the remaining years that the transmission line is in service, depending on where the substations are located (Table 3-300).

TABLE 3-294			
PROPERTY TAX ESTIMATES OF ALTERNATIVE ROUTES			
Alternative Route	First years’ Property Taxes	Estimated Annual Cash Flows	Annual Property Taxes for Remaining Years in Service
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)			
Alternative WYCO-B and Route Variations			
WYCO-B (Applicant Preferred Alternative)	\$4,610,528	\$33,338,163	\$463,027
WYCO-B-1	\$4,626,732	\$33,417,774	\$464,858
WYCO-B-2 (Agency Preferred Alternative)	\$4,606,477	\$33,318,260	\$462,569
WYCO-B-3	\$4,610,528	\$33,338,163	\$463,027
Alternative WYCO-C and Route Variations			
WYCO-C	\$4,639,011	\$33,814,899	\$464,419
WYCO-C-1	\$4,656,251	\$33,899,602	\$466,367
WYCO-C-2	\$4,635,657	\$33,798,421	\$464,040
WYCO-C-3	\$4,639,984	\$33,819,679	\$464,529
Alternative WYCO-D and Route Variations			
WYCO-D	\$6,377,741	\$41,567,946	\$665,177
WYCO-D-1	\$6,377,741	\$41,567,946	\$665,177
Alternative WYCO-F and Route Variations			
WYCO-F	\$7,301,800	\$53,795,084	\$727,900
WYCO-F-1	\$7,326,403	\$53,915,959	\$730,681
WYCO-F-2	\$7,295,650	\$53,764,865	\$727,205
WYCO-F-3	\$7,301,800	\$53,795,084	\$727,900
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)			
COUT BAX-B	\$7,401,794	\$45,761,176	\$746,378
COUT BAX-C	\$7,611,313	\$47,287,998	\$765,287
COUT BAX-E	\$7,843,590	\$48,772,796	\$788,242
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)			
Alternative COUT-A and Route Variation			
COUT-A	\$7,354,281	\$49,080,219	\$706,971
COUT-A-1	\$5,165,912	\$35,017,298	\$491,413

TABLE 3-294 PROPERTY TAX ESTIMATES OF ALTERNATIVE ROUTES			
Alternative Route	First years' Property Taxes	Estimated Annual Cash Flows	Annual Property Taxes for Remaining Years in Service
Alternative COUT-B and Route Variations			
COUT-B	\$5,223,622	\$35,514,350	\$495,889
COUT-B-1	\$5,148,416	\$34,970,603	\$489,060
COUT-B-2	\$5,181,595	\$35,210,491	\$492,072
COUT-B-3	\$5,174,959	\$35,162,513	\$491,470
COUT-B-4	\$5,179,383	\$35,194,498	\$491,872
COUT-B-5	\$5,177,171	\$35,178,506	\$491,671
Alternative COUT-C and Route Variations			
COUT-C	\$5,007,589	\$33,918,061	\$476,602
COUT-C-1	\$4,922,832	\$33,305,264	\$468,906
COUT-C-2	\$4,964,124	\$33,603,806	\$472,655
COUT-C-3 (Agency Preferred Alternative)	\$4,959,777	\$33,572,381	\$472,261
COUT-C-4	\$4,966,297	\$33,619,519	\$472,853
COUT-C-5	\$4,959,777	\$33,572,381	\$472,261
Alternatives COUT-H and COUT-I			
COUT-H (Applicant Preferred Alternative)	\$4,795,597	\$32,389,022	\$457,318
COUT-I	\$5,506,716	\$37,591,100	\$521,306
SOURCES: Myer 2013; Patterson 2009; POWER Engineers 2013; Uhrich 2013; Utah State Tax Commission 2012b; Wyoming Department of Revenue 2013 (Analysis by the Louis Berger Group)			

For Utah, the property taxes for the first years of the transmission line were estimated by applying an average tax rate of 1.27 percent to the construction cost of each segment of the line for Utah counties (Patterson 2009). The average tax rate for utilities was estimated by dividing total taxes charged against utilities in Utah by the total assessed value of utilities in 2010 (Utah State Tax Commission 2012c). To estimate an average cash flow for the Utah segments of the line, a capitalization rate of 9.08 percent (Utah State Tax Commission 2012b) was applied to cost of construction to estimate the annual cash flows. The annual tax revenue for the remaining years was then estimated by applying the 1.27 percent average tax rate to the annual cash flow.

For Colorado, the property taxes for the first years of the transmission line were estimated by applying an effective tax rate of 2.03 percent to the construction cost of each segment of the line (Myer 2013), which includes the average mill levy and the state assessment ratio for commercial properties of 29 percent. The effective tax rate was applied to the cost of the routes per mile for the routes in Colorado counties. To estimate an average cash flow for the Colorado segments of the line, a capitalization rate of 11.3 percent (Myer 2013) for independent power producers was applied to cost of construction to estimate the annual cash flows or income. The annual tax revenue for the remaining years was then estimated by applying the effective tax rate of 2.3 percent to the annual cash flow. It should be noted that these annual tax estimates for the remaining years in services are a rough estimate of these property tax receipts, since Colorado Department of Local Affairs Property Tax Division would balance the cost based approach with the income approach during operation of the transmission line (Uhrich 2013).

For Wyoming, the property taxes for the first years of the transmission line were estimated by applying Wyoming's industrial tax rate of 11.5 percent and the average mill levy of 68.088 mills to the construction cost of each segment of the line to which was also applied (Uhrich 2013). To estimate the annual income or cash flow for Wyoming segments of the line, a capitalization rate of 8.25 percent (Wyoming Department of Revenue 2012) was applied to the cost of construction. The annual tax revenue

for the remaining years was then estimated by applying the industrial tax rate of 11.5 percent and the average mill levy of 68.088 to the annual cash flow. It should be noted that these annual tax estimates for the remaining years in services are a rough estimate of these property tax receipts, since Wyoming Department of Revenue state assessors would reconcile the cost based approach with the income approach during operation of the transmission line (Uhrich 2013).

Table 3-295 presents an estimate of tax revenue by county in the Project area for Wyoming, Tables 3-296 and 3-297 present tax revenue by county for Colorado, and Tables 3-298 and 3-299 present tax revenue by county for Utah. The estimate of tax revenue based on the assumption that the amount of capital applied to each county would correspond with the length of the transmission line that is constructed in each county.

TABLE 3-295				
ESTIMATED PROPERTY TAX REVENUES FOR WYOMING				
Alternative Route	First Year's		Annual Receipts for Remaining Years	
	Carbon County	Sweetwater County	Carbon County	Sweetwater County
Alternative WYCO-B and Route Variations				
WYCO-B (Applicant Preferred Alternative)	\$1,550,126	\$348,916	\$127,885	\$28,786
WYCO-B-1	\$1,550,126	\$348,916	\$127,885	\$28,786
WYCO-B-2 (Agency Preferred Alternative)	\$1,550,126	\$348,916	\$127,885	\$28,786
WYCO-B-3	\$1,550,126	\$348,916	\$127,885	\$28,786
Alternative WYCO-C and Route Variations				
WYCO-C	\$1,126,290	\$834,027	\$92,919	\$68,807
WYCO-C-1	\$1,126,290	\$834,027	\$92,919	\$68,807
WYCO-C-2	\$1,126,290	\$834,027	\$92,919	\$68,807
WYCO-C-3	\$1,126,290	\$834,027	\$92,919	\$68,807
Alternative WYCO-D and Route Variation				
WYCO-D	\$1,698,603	\$121,329	\$140,135	\$10,010
WYCO-D-1	\$1,698,603	\$121,329	\$140,135	\$10,010
Alternative WYCO-F and Route Variations				
WYCO-F	\$2,776,570	\$408,319	\$229,067	\$33,686
WYCO-F-1	\$2,776,570	\$408,319	\$229,067	\$33,686
WYCO-F-2	\$2,776,570	\$408,319	\$229,067	\$33,686
WYCO-F-3	\$2,776,570	\$408,319	\$229,067	\$33,686
SOURCES: POWER Engineers 2013; Uhrich 2013; Wyoming Department of Revenue 2012 (Analysis by the Louis Berger Group)				

TABLE 3-296					
FIRST YEAR'S PROPERTY TAX REVENUES FOR COLORADO					
Alternative Route	Counties				
	Garfield	Mesa	Moffat	Rio Blanco	Routt
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)					
Alternative WYCO-B and Route Variations					
WYCO-B (Applicant Preferred Alternative)	\$0	\$0	\$2,710,106	\$0	\$0
WYCO-B-1	\$0	\$0	\$2,726,310	\$0	\$0
WYCO-B-2 (Agency Preferred Alternative)	\$0	\$0	\$2,706,055	\$0	\$0
WYCO-B-3	\$0	\$0	\$2,710,106	\$0	\$0

TABLE 3-296					
FIRST YEAR'S PROPERTY TAX REVENUES FOR COLORADO					
Alternative Route	Counties				
	Garfield	Mesa	Moffat	Rio Blanco	Roitt
Alternative WYCO-C and Route Variations					
WYCO-C	\$0	\$0	\$2,661,409	\$0	\$0
WYCO-C-1	\$0	\$0	\$2,678,539	\$0	\$0
WYCO-C-2	\$0	\$0	\$2,658,077	\$0	\$0
WYCO-C-3	\$0	\$0	\$2,662,376	\$0	\$0
Alternative WYCO-D and Route Variation					
WYCO-D	\$0	\$0	\$4,371,695	\$0	\$186,114
WYCO-D-1	\$0	\$0	\$4,371,695	\$0	\$186,114
Alternative WYCO-F and Route Variations					
WYCO-F	\$0	\$0	\$4,114,818	\$0	\$0
WYCO-F-1	\$0	\$0	\$4,139,420	\$0	\$0
WYCO-F-2	\$0	\$0	\$4,108,667	\$0	\$0
WYCO-F-3	\$0	\$0	\$4,114,818	\$0	\$0
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)					
COUT BAX-B	\$941,840	\$463,200	\$77,200	\$1,868,240	\$0
COUT BAX-C	\$940,384	\$462,484	\$77,081	\$1,865,351	\$0
COUT BAX-E	\$964,018	\$474,107	\$79,018	\$1,912,232	\$0
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)					
Alternative COUT-A and Route Variation					
COUT-A	\$0	\$0	\$1,765,885	\$0	\$0
COUT-A-1	\$0	\$0	\$1,006,680	\$0	\$0
Alternative COUT-B and Route Variations					
COUT-B	\$0	\$0	\$972,235	\$0	\$0
COUT-B-1	\$0	\$0	\$972,235	\$0	\$0
COUT-B-2	\$0	\$0	\$972,235	\$0	\$0
COUT-B-3	\$0	\$0	\$972,235	\$0	\$0
COUT-B-4	\$0	\$0	\$972,235	\$0	\$0
COUT-B-5	\$0	\$0	\$972,235	\$0	\$0
Alternative COUT-C and Route Variations					
COUT-C	\$0	\$0	\$847,761	\$139,303	\$0
COUT-C-1	\$0	\$0	\$847,761	\$139,303	\$0
COUT-C-2	\$0	\$0	\$847,761	\$139,303	\$0
COUT-C-3 (Agency Preferred Alternative)	\$0	\$0	\$847,761	\$139,303	\$0
COUT-C-4	\$0	\$0	\$847,761	\$139,303	\$0
COUT-C-5	\$0	\$0	\$847,761	\$139,303	\$0
Alternatives COUT-H and COUT-I					
COUT-H (Applicant Preferred Alternative)	\$0	\$0	\$846,401	\$139,080	\$0
COUT-I	\$0	\$0	\$823,916	\$135,385	\$0

SOURCES: POWER Engineers 2013; Myer 2013 (Analysis by the Louis Berger Group)

TABLE 3-297					
ANNUAL PROPERTY TAX REVENUES FOR REMAINING YEARS IN SERVICE FOR COLORADO					
Alternative Route	Counties				
	Garfield	Mesa	Moffat	Rio Blanco	Routt
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)					
Alternative WYCO-B and Route Variations					
WYCO-B (Applicant Preferred Alternative)	\$0	\$0	\$306,242	\$0	\$0
WYCO-B-1	\$0	\$0	\$308,073	\$0	\$0
WYCO-B-2 (Agency Preferred Alternative)	\$0	\$0	\$305,784	\$0	\$0
WYCO-B-3	\$0	\$0	\$306,242	\$0	\$0
Alternative WYCO-C and Route Variations					
WYCO-C	\$0	\$0	\$302,692	\$0	\$0
WYCO-C-1	\$0	\$0	\$304,641	\$0	\$0
WYCO-C-2	\$0	\$0	\$302,313	\$0	\$0
WYCO-C-3	\$0	\$0	\$302,802	\$0	\$0
Alternative WYCO-D and Route Variation					
WYCO-D	\$0	\$0	\$494,002	\$0	\$21,031
WYCO-D-1	\$0	\$0	\$494,002	\$0	\$21,031
Alternative WYCO-F and Route Variations					
WYCO-F	\$0	\$0	\$464,974	\$0	\$0
WYCO-F-1	\$0	\$0	\$467,755	\$0	\$0
WYCO-F-2	\$0	\$0	\$464,279	\$0	\$0
WYCO-F-3	\$0	\$0	\$464,974	\$0	\$0
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)					
COUT BAX-B	\$106,428	\$52,342	\$8,724	\$211,111	\$0
COUT BAX-C	\$106,263	\$52,261	\$8,710	\$210,785	\$0
COUT BAX-E	\$108,934	\$53,574	\$8,929	\$216,082	\$0
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)					
Alternative COUT-A and Route Variation					
COUT-A	\$0	\$0	\$199,545	\$0	\$0
COUT-A-1	\$0	\$0	\$113,755	\$0	\$0
Alternative COUT-B and Route Variations					
COUT-B	\$0	\$0	\$109,863	\$0	\$0
COUT-B-1	\$0	\$0	\$109,863	\$0	\$0
COUT-B-2	\$0	\$0	\$109,863	\$0	\$0
COUT-B-3	\$0	\$0	\$109,863	\$0	\$0
COUT-B-4	\$0	\$0	\$109,863	\$0	\$0
COUT-B-5	\$0	\$0	\$109,863	\$0	\$0
Alternative COUT-C and Route Variations					
COUT-C	\$0	\$0	\$95,797	\$15,741	\$0
COUT-C-1	\$0	\$0	\$95,797	\$15,741	\$0
COUT-C-2	\$0	\$0	\$95,797	\$15,741	\$0
COUT-C-3 (Agency Preferred Alternative)	\$0	\$0	\$95,797	\$15,741	\$0
COUT-C-4	\$0	\$0	\$95,797	\$15,741	\$0
COUT-C-5	\$0	\$0	\$95,797	\$15,741	\$0
Alternatives COUT-H and COUT-I					
COUT-H (Applicant Preferred Alternative)	\$0	\$0	\$95,643	\$15,716	\$0
COUT-I	\$0	\$0	\$93,103	\$15,299	\$0

SOURCES: Myer 2013; POWER Engineers 2013 (Analysis by the Louis Berger Group)

TABLE 3-298 FIRST YEARS' PROPERTY TAX REVENUES FOR UTAH									
Alternative Route	Counties								
	Carbon	Duchesne	Emery	Grand	Juab	Sanpete	Uintah	Utah	Wasatch
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)									
COUT BAX-B	\$0	\$0	\$151,379	\$130,902	\$28,898	\$57,030	\$0	\$0	\$0
COUT BAX-C	\$0	\$0	\$171,209	\$130,700	\$28,853	\$56,942	\$0	\$0	\$0
COUT BAX-E	\$71,693	\$0	\$116,355	\$133,984	\$29,578	\$49,363	\$0	\$0	\$0
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)									
Alternative COUT-A and Route Variation									
COUT-A	\$0	\$138,294	\$0	\$0	\$64,676	\$36,393	\$127,480	\$84,640	\$55,734
COUT-A-1	\$0	\$109,596	\$0	\$0	\$43,672	\$9,150	\$111,675	\$62,388	\$41,176
Alternative COUT-B and Route Variations									
COUT-B	\$201	\$123,319	\$0	\$0	\$42,178	\$8,837	\$107,854	\$100,423	\$3,214
COUT-B-1	\$0	\$120,106	\$0	\$0	\$42,178	\$8,837	\$107,854	\$84,154	\$15,867
COUT-B-2	\$0	\$121,311	\$0	\$0	\$42,178	\$8,837	\$107,854	\$86,163	\$15,867
COUT-B-3	\$0	\$121,311	\$0	\$0	\$42,178	\$8,837	\$107,854	\$95,000	\$6,628
COUT-B-4	\$0	\$121,311	\$0	\$0	\$42,178	\$8,837	\$107,854	\$86,163	\$15,867
COUT-B-5	\$0	\$121,311	\$0	\$0	\$42,178	\$8,837	\$107,854	\$95,000	\$6,628
Alternative COUT-C and Route Variations									
COUT-C	\$0	\$76,367	\$0	\$0	\$41,440	\$8,683	\$108,335	\$98,666	\$3,157
COUT-C-1	\$0	\$101,231	\$0	\$0	\$41,440	\$8,683	\$108,335	\$82,682	\$15,589
COUT-C-2	\$0	\$102,415	\$0	\$0	\$41,440	\$8,683	\$108,335	\$84,655	\$15,589
COUT-C-3 (Agency Preferred Alternative)	\$0	\$102,415	\$0	\$0	\$41,440	\$8,683	\$108,335	\$93,338	\$6,512
COUT-C-4	\$6,315	\$96,298	\$0	\$0	\$41,440	\$8,683	\$108,335	\$84,655	\$15,589
COUT-C-5	\$6,315	\$96,298	\$0	\$0	\$41,440	\$8,683	\$108,335	\$93,338	\$6,512
Alternatives COUT-H and COUT-I									
COUT-H (Applicant Preferred Alternative)	\$89,248	\$65,409	\$3,546	\$0	\$29,749	\$49,648	\$108,161	\$0	\$0
COUT-I	\$89,178	\$63,671	\$68,658	\$0	\$28,959	\$56,000	\$105,288	\$0	\$0
SOURCES: Patterson 2009; POWER Engineers 2013; Utah State Tax Commission 2012c (Analysis by the Louis Berger Group)									

TABLE 3-299 ANNUAL PROPERTY TAX REVENUES FOR REMAINING YEARS IN SERVICE FOR UTAH									
Alternative Route	Counties								
	Carbon	Duchesne	Emery	Grand	Juab	Sanpete	Uintah	Utah	Wasatch
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)									
COUT BAX-B	\$0	\$0	\$1,667,174	\$1,441,652	\$318,259	\$628,088	\$0	\$0	\$0
COUT BAX-C	\$0	\$0	\$1,885,560	\$1,439,423	\$317,767	\$627,117	\$0	\$0	\$0
COUT BAX-E	\$789,575	\$0	\$1,281,441	\$1,475,599	\$325,754	\$543,642	\$0	\$0	\$0
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)									
Alternative COUT-A and Route Variation									
COUT-A	\$0	\$1,523,067	\$0	\$0	\$712,291	\$400,807	\$1,403,970	\$932,163	\$613,807
COUT-A-1	\$0	\$1,207,002	\$0	\$0	\$480,968	\$100,774	\$1,229,905	\$687,098	\$453,485
Alternative COUT-B and Route Variations									
COUT-B	\$2,212	\$1,358,143	\$0	\$0	\$464,512	\$97,326	\$1,187,822	\$1,105,980	\$35,391
COUT-B-1	\$0	\$1,322,752	\$0	\$0	\$464,512	\$97,326	\$1,187,822	\$926,811	\$174,745
COUT-B-2	\$0	\$1,336,024	\$0	\$0	\$464,512	\$97,326	\$1,187,822	\$948,931	\$174,745
COUT-B-3	\$0	\$1,336,024	\$0	\$0	\$464,512	\$97,326	\$1,187,822	\$1,046,257	\$72,995
COUT-B-4	\$0	\$1,336,024	\$0	\$0	\$464,512	\$97,326	\$1,187,822	\$948,931	\$174,745
COUT-B-5	\$0	\$1,336,024	\$0	\$0	\$464,512	\$97,326	\$1,187,822	\$1,046,257	\$72,995
Alternative COUT-C and Route Variations									
COUT-C	\$0	\$841,050	\$0	\$0	\$456,384	\$95,623	\$1,193,118	\$1,086,628	\$34,772
COUT-C-1	\$0	\$1,114,881	\$0	\$0	\$456,384	\$95,623	\$1,193,118	\$910,594	\$171,687
COUT-C-2	\$0	\$1,127,920	\$0	\$0	\$456,384	\$95,623	\$1,193,118	\$932,327	\$171,687
COUT-C-3 (Agency Preferred Alternative)	\$0	\$1,127,920	\$0	\$0	\$456,384	\$95,623	\$1,193,118	\$1,027,950	\$71,717
COUT-C-4	\$69,544	\$1,060,549	\$0	\$0	\$456,384	\$95,623	\$1,193,118	\$932,327	\$171,687
COUT-C-5	\$69,544	\$1,060,549	\$0	\$0	\$456,384	\$95,623	\$1,193,118	\$1,027,950	\$71,717
Alternatives COUT-H and I									
COUT-H (Applicant Preferred Alternative)	\$982,906	\$720,364	\$39,056	\$0	\$327,635	\$546,782	\$1,191,204	\$0	\$0
COUT-I	\$982,140	\$701,227	\$756,142	\$0	\$318,932	\$616,742	\$1,159,559	\$0	\$0

SOURCES: Patterson 2009; POWER Engineers 2013; Utah State Tax Commission 2012c (Analysis by the Louis Berger Group)

Additionally, there would be property tax revenue associated with the construction of the two series compensation stations that would accrue to the counties in which they are constructed. Depending on the alternative route, the north series compensation station would be located in either Carbon County, Wyoming or in Moffat County, Colorado. The south series compensation station would be located in either Emery or Uintah counties, in Utah. Estimated property tax receipts associated with the substation properties are summarized in Table 3-300.

Alternative Route	First years' Property Taxes	Estimated Annual Cash Flows	Annual Property Taxes for Remaining Years in Service
Middle North Series Compensation Station – Carbon County, Wyoming	\$630,575	\$6,643,890	\$52,022
Middle North Series Compensation Station – Moffat County, Colorado	\$1,849,936	\$9,088,816	\$209,043
Middle South Series Compensation Station – Emery or Uintah counties, Utah	\$1,011,378	\$7,312,306	\$91,866

SOURCES: Myer 2013; Patterson 2009; POWER Engineers 2013; Uhrich 2013; Utah State Tax Commission 2012c; Wyoming Department of Revenue 2012 (Analysis by the Louis Berger Group)

Impacts on Sales Tax Revenues

The Project is expected to generate additional sales tax revenues for county and state governments. Locally purchased materials, such as concrete, lumber, and other supplies, would contribute sales taxes to local jurisdictions. Additionally, workers residing temporarily in local communities would generate sales and use taxes as well as lodging fees through their spending on retail, food and beverage, accommodations, and other items.

Impacts on Property Values

Whenever land uses change, the concern is often raised about the effect the change may have on property values nearby. The question of whether nearby transmission lines can affect residential property values has been studied extensively in the United States and Canada over the last 20 years or so, with mixed results. In general, the impacts are difficult to measure, vary among individual properties, and are influenced by a number of interplaying factors, including the following:

- Proximity of residential properties to transmission line structures
- Type and size of high-voltage transmission line structures
- Appearance of easement landscaping
- Surrounding topography (Pitts and Jackson 2007)

(Jackson and Pitts 2010) and (Pitts and Jackson 2007) summarize the following on the impacts of high-voltage transmission lines.

- When negative impacts are present, studies report an average decline of prices from 2 to 9 percent.
- Value diminution is attributable to the visual unattractiveness of the lines, potential health hazards, disturbing sounds, and safety concerns.
- Impacts diminish as the distance between the high-voltage transmission lines and the affected properties increase, and disappear completely at a distance of 200 feet from the lines (0.04 miles).

- Where views of transmission lines and towers are completely unobstructed, negative impacts can extend up to 0.25 mile.
- If high-voltage transmission-line structures are at least partially screened from view by trees, landscaping, or topography, any negative effects are reduced considerably.
- Value diminution attributed to high-voltage transmission-line proximity is temporary and usually decreases over time, disappearing completely in 4 to 10 years.

Another recent study by Chalmers has analyzed nearly 600 miles of a 500kV line that stretches across Montana running from Colstrip in the southeast corner of the state west to the state border near Taft (Chalmers 2012a, b, c). Chalmers' research reports on sales dynamics involving properties within 500 feet (almost 0.1 of a mile) of the centerline of the Colstrip-Bonneville Power Administration (BPA) line that sold between 2000 and 2010. He found that circumstances can affect vulnerability to transmission line impacts in rural settings, including:

- When a property's sole use is residential, its vulnerability to price impacts from a transmission line increases.
- As property size increases, vulnerability to negative market impacts from a transmission line decreases.
- If substitutes are available (additional house in an area), vulnerability to price impacts and marketing delays can increase.

Although extents vary, price impacts and market delays associated with the 500kV line on small rural residential parcels have been noted in the Chalmers study. The same report did not find evidence of transmission line impact on sales involving producing agricultural properties, and based on a small number of case studies, found no impact on the sales of recreationally influenced agricultural lands from the presence of the Colstrip-BPA line.

Studies of impacts during periods of physical change, such as new transmission line construction or structural rebuilds, generally reveal greater short-term impacts than long-term effects. However, most studies have concluded that other factors (e.g., general location, size of property or structure, improvements, irrigation potential, condition, amenities, and supply and demand factors in a specific market area) are far more important criteria than the presence or absence of transmission lines in determining the value of residential real estate.

Some impacts on property values (and salability) might occur on an individual basis as a result of the new transmission line. There would be adverse effects expected to property values associated with the transmission line; however, these impacts would be highly variable, individualized, and unpredictable, and most of these losses are likely to be temporary in nature. It is likely that the siting of transmission lines would moderately adversely affect property values for these residences in the short-term. Landscaping and other natural features that create visual obstructions would mitigate these temporary losses. The general location of the residences within 0.1 and 0.25 mile of the transmission routes are described below.

The residences likely to be most affected are those located within 0.1 mile. Alternatives WYCO-B, WYCO-C, and WYCO-F have from 3 to 5 residences within 0.25 mile of the routes, and 2 residences within 0.1 of a mile of these routes. There are 10 and 50 residences located within 0.1 and 0.25 mile of WYCO-D alternative routes, respectively. For Alternatives WYCO-B, WYCO-C, and WYCO-F, there would be minimal adverse impacts, while Alternative WYCO-D would have moderate adverse effects as more residences are located in proximity to this route compared to the other WYCO alternative routes. The bulk of the 50 residences within 0.25 mile of Alternative WYCO-D are located southwest, south, east, and north of Craig, Colorado.

For the Colorado-Utah alternative routes, Alternatives COUT BAX-B, COUT-BAX-C, COUT-BAX-E, COUT-C, COUT-H, and COUT-I have fewer proximate residences than Alternatives COUT-A and COUT-B. Alternative Routes COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-C, COUT-H, and COUT-I have the fewest proximate residences, with from 10 to 18 residences within 0.1 of a mile, and 98 to 147 residences within a 0.25 mile. In contrast, Alternatives COUT-A and COUT-B have from 40 to 45 residences within 0.1 of a mile and 196 to 214 residences within a 0.25 mile. All of the Colorado-Utah routes would have adverse impacts on these residences, with more adverse impacts associated with Alternatives COUT-A and COUT-B than the other Colorado-Utah routes due to the relatively larger number of proximate residences. However, it is anticipated that the remaining Colorado-Utah routes, including Alternatives COUT BAX-B, COUT BAX-C, COUT-BAX-E, COUT-C, COUT-H, and COUT-I would still have moderate adverse effects due to the proximity of residences to the alternative routes (from 10 to 18 residences within 0.1 of a mile, and 106 to 147 within 0.25 of a mile). These adverse effects are likely to dissipate with time and could be mitigated with changes in landscaping or topography. The locations of these proximate residences are described below.

All Colorado-Utah routes pass through just east of the community of Nephi, Utah just south of Mona, Utah. A neighborhood on the northeastern part of Nephi is located in proximity of the routes, with 77 residences within 0.25 mile of the alternative routes.

There are 10 residences within 0.25 mile of Alternatives COUT BAX-B and COUT BAX-C that are located north and east of Mount Pleasant, Utah and north of Castle Dale, Utah. There are 10 residences north of Fairview, Utah within 0.25 mile of Alternative COUT BAX-E as well as Alternative COUT-H. There are 4 residences west of Mack, Colorado located within 0.25 mile of Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E.

There are a number of proximate residences (38) to Alternatives COUT-A and COUT-B south and southwest of Roosevelt, Utah in Duchesne County. In addition, Alternative COUT-A also has the following residences within 0.25 mile:

- 8 residences southeast of Strawberry Reservoir in Wasatch County, Utah
- 30 residences in western Duchesne County, Utah near the community of Fruitland
- 12 residences northwest of Duchesne, Utah in Duchesne County
- 8 residences north of Duchesne, Utah in Duchesne County
- 16 residences near Upalco west of Roosevelt in Duchesne County

There are a number of proximate residences to Alternative COUT-B:

- 6 residences near Ioka, Utah in Duchesne County
- 38 residences in the southwestern part of Duchesne County, Utah

Additionally, there are 28 residences in the far southwestern part of Duchesne County, Utah in proximity to Alternatives COUT-B and route variations, COUT-C and route variations, COUT-H, and COUT-I. Additionally, there are 6 residences west of Martin, Utah and 42 residences west of Helper, Utah within 0.25 mile from Alternative COUT-H.

The number of structures and their proximity to each alternative route are summarized in Table 3-301.

TABLE 3-301 RESIDENTIAL PROXIMITY TO TRANSMISSION LINE				
Alternative Route	Residences within 0.1 mile	Residences within 0.25 mile	Residences within 0.5 mile	Residences within 1.0 mile
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)				
Alternative WYCO-B and Route Variations				
WYCO-B (Applicant Preferred Alternative)	2	4	13	26
WYCO-B-1	2	3	12	26
WYCO-B-2 (Agency Preferred Alternative)	2	5	14	28
WYCO-B-3	2	4	13	26
Alternative WYCO-C and Route Variations				
WYCO-C	2	4	13	26
WYCO-C-1	2	3	12	26
WYCO-C-2	2	5	14	28
WYCO-C-3	2	4	13	26
Alternative WYCO-D and Route Variation				
WYCO-D	10	50	205	522
WYCO-D-1	10	50	205	522
Alternative WYCO-F and Route Variations				
WYCO-F	2	4	13	26
WYCO-F-1	2	3	12	26
WYCO-F-2	2	5	14	28
WYCO-F-3	2	4	13	26
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)				
COUT BAX-B	10	106	239	737
COUT BAX-C	10	106	239	737
COUT BAX-E	17	106	269	773
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)				
Alternative COUT-A and Route Variation				
COUT-A	45	214	589	1,341
COUT-A-1	45	214	589	1,341
Alternative COUT-B and Route Variations				
COUT-B	41	199	459	1,024
COUT-B-1	44	206	476	1,033
COUT-B-2	40	197	462	1,039
COUT-B-3	44	206	468	1,032
COUT-B-4	44	207	470	1,032
COUT-B-5	40	196	460	1,039
Alternative COUT-C and Route Variations				
COUT-C	11	98	192	535
COUT-C-1	16	114	221	586
COUT-C-2	12	105	207	591
COUT-C-3 (Agency Preferred Alternative)	12	104	205	591
COUT-C-4	14	107	208	560
COUT-C-5	14	106	206	560
Alternatives COUT-H and COUT-I				
COUT-H (Applicant Preferred Alternative)	18	147	461	1,150
COUT-I	10	99	224	643

Environmental Justice

Because potential environmental justice populations exist in the study area, it is necessary to determine if impacts are likely to fall disproportionately on these populations. The following analysis examines the spatial distribution of residences located within potential environmental justice Census Blocks within the study area. As described in Section 3.2.20.3.8, potential minority populations reside within the Census Blocks through which several of the transmission line alternative routes pass. The number of residential structures and their proximity to each alternative route are summarized in Table 3-302.

TABLE 3-302 PROXIMITY OF ALTERNATIVE ROUTES TO ENVIRONMENTAL JUSTICE CENSUS BLOCKS AND STRUCTURES					
Alternative Route	Number of Environmental Justice Census Blocks within 0.25 Mile	Number of Residential Structures within 0.25 Mile (Environmental Justice)	Number of Residential Structures within 0.25 Mile (Total)	Number of Residential Structures within 1 Mile (Environmental Justice)	Number of Residential Structures within 1 Mile (Total)
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)					
Alternative WYCO-B and Route Variations					
WYCO-B (Applicant Preferred Alternative)	1	0	4	1	26
WYCO-B-1	1	0	3	1	26
WYCO-B-2 (Agency Preferred Alternative)	1	0	5	1	28
WYCO-B-3	1	0	4	1	26
Alternative WYCO-C and Route Variations					
WYCO-C	1	0	4	1	26
WYCO-C-1	1	0	3	1	26
WYCO-C-2	1	0	5	1	28
WYCO-C-3	1	0	4	1	26
Alternative WYCO-D and Route Variation					
WYCO-D	1	0	50	39	522
WYCO-D-1	1	0	50	39	522
Alternative WYCO-F and Route Variations					
WYCO-F	1	0	4	1	26
WYCO-F-1	1	0	3	1	26
WYCO-F-2	1	0	5	1	28
WYCO-F-3	1	0	4	1	26
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)					
COUT BAX-B	4	3	106	22	737
COUT BAX-C	4	3	106	22	737
COUT BAX-E	2	1	106	13	773
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)					
Alternative COUT-A and Route Variation					
COUT-A	5	4	214	56	1,341
COUT-A-1	5	4	214	56	1,341

TABLE 3-302 PROXIMITY OF ALTERNATIVE ROUTES TO ENVIRONMENTAL JUSTICE CENSUS BLOCKS AND STRUCTURES					
Alternative Route	Number of Environmental Justice Census Blocks within 0.25 Mile	Number of Residential Structures within 0.25 Mile (Environmental Justice)	Number of Residential Structures within 0.25 Mile (Total)	Number of Residential Structures within 1 Mile (Environmental Justice)	Number of Residential Structures within 1 Mile (Total)
Alternative COUT-B and Route Variations					
COUT-B	6	4	199	51	1,024
COUT-B-1	6	4	206	51	1,033
COUT-B-2	6	4	197	51	1,039
COUT-B-3	6	4	206	51	1,032
COUT-B-4	6	4	207	51	1,032
COUT-B-5	6	4	196	51	1,039
Alternative COUT-C and Route Variations					
COUT-C	4	1	98	13	535
COUT-C-1	4	1	114	13	586
COUT-C-2	4	1	105	13	591
COUT-C-3 (Agency Preferred Alternative)	4	1	104	13	591
COUT-C-4	4	1	107	13	560
COUT-C-5	4	1	106	13	560
Alternatives COUT-H and COUT-I					
COUT-H (Applicant Preferred Alternative)	5	3	147	17	1,150
COUT-I	5	1	99	13	643
SOURCES: Myer 2013; POWER Engineers 2013 (Analysis by the Louis Berger Group)					

Figure 3-11 depicts the geographic distribution of environmental justice and non-environmental justice residences throughout the study area.

There are an estimated 3,111 residences located within 1 mile of all alternative routes, of which 112 are located in Census Blocks that have been identified as a potential minority environmental justice population. There are an estimated 450 residences located within 0.25 mile of the alternative routes, of which nine have been identified as located within a Census Block with environmental justice populations.

There are a number of residences located in environmental justice Census Blocks within 1 mile of the alternative routes in western Uintah County, Utah near the Alternatives COUT-A and COUT-B roughly 2 to 4 miles to the south and southwest of the Town of Fort Duchesne. At this location, there are a total of five environmental justice Census Blocks which contain a combined total of 35 residences located on the Uintah and Ouray Indian Reservation. Another cluster is located in the Town of Nephi in Juab County, Utah. It comprises a total of 13 residences contained within four environmental justice Census Blocks adjacent to the proposed Alternative COUT-A. A third cluster consists of nine residences contained within three environmental justice Census Blocks located 5 miles southwest of the Town of Huntington in Emery County, Utah. Alternative COUT BAX-B would potentially affect this population. Another cluster is dispersed within a 12-mile distance of the Town of Duchesne and includes six residences contained within six environmental justice Census Blocks. Alternatives COUT-A and COUT-B would potentially affect these populations.

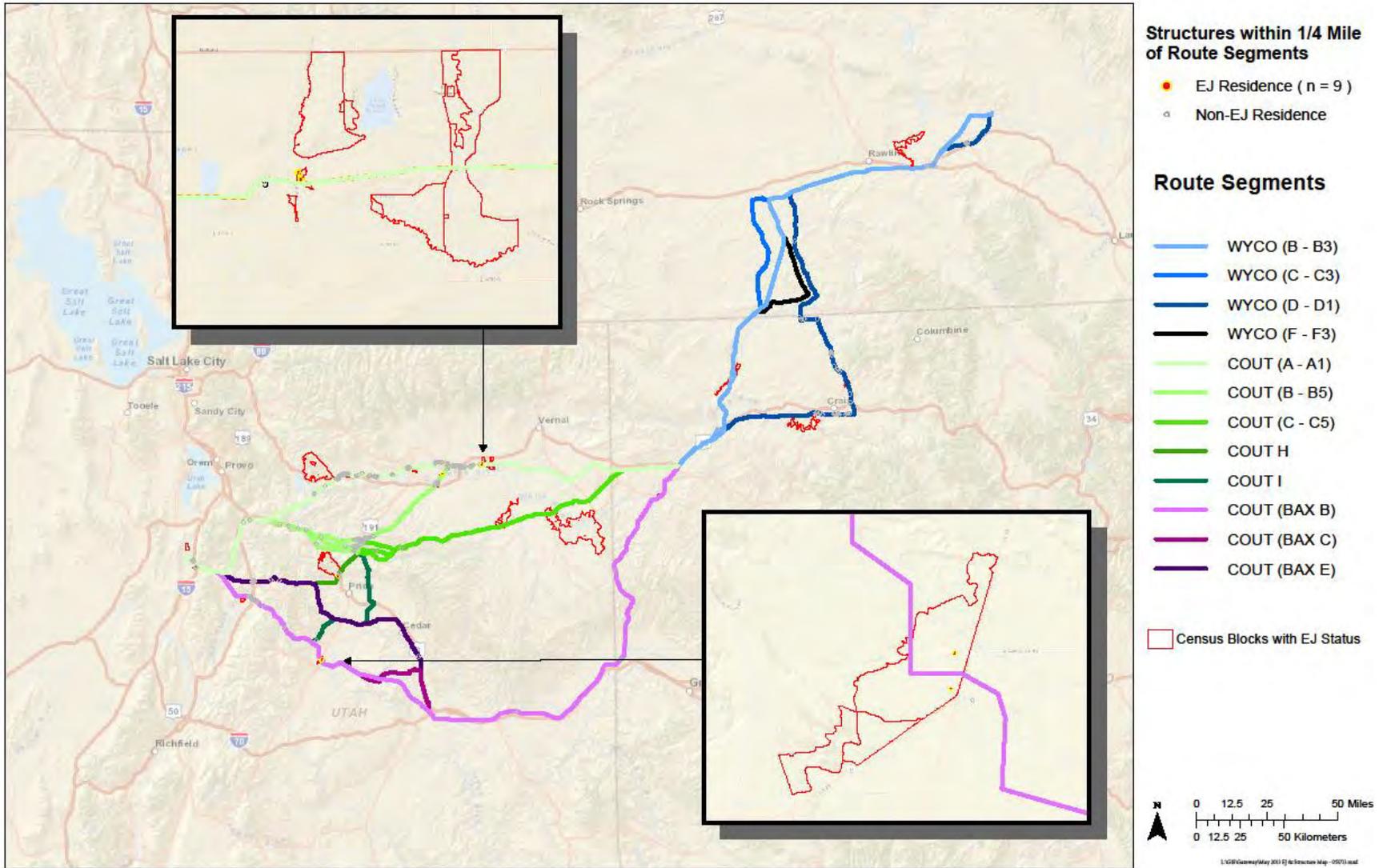


Figure 3-11 Geographic Distribution of Residences and Minority Environmental Justice Census Blocks throughout the Study Area

The Project is expected to contribute positively to potential environmental justice communities through additional job and income opportunities and fiscal receipts to counties. However, these populations also could be affected adversely by the Project's impacts on additional resource areas (e.g., traffic, air quality, visual resources, and ranching land uses). Air-quality and traffic impacts are expected to be short-term with air emission dispersion limited to the vicinity of the construction activity, and impacts would not result in violations. Adverse effects associated with visual resources could also occur in the potential environmental justice communities.

3.2.21 Public Health and Safety

The Public Health and Safety section responds to issues raised by the public and agencies during Project scoping and preparation of the EIS related to potentially significant effects on public health and safety including potential effects of EMFs on humans (e.g., pacemaker use) and animals, as well as concerns with spark-gap transmissions.

3.2.21.1 Electromagnetic Fields and Corona Effects

As proposed, the Project includes a new single-circuit 500kV AC transmission line beginning at the Aeolus Substation near Medicine Bow, Wyoming, connecting to two separate proposed series compensation substations, and terminating at the existing Clover Substation near Mona, Utah.

The existing and proposed circuits along the route from Aeolus to Clover are sources of 60 Hertz (Hz) EMF, audible noise, and radio noise. To characterize the potential effect of the proposed Project on the existing levels of EMF, audible noise, and radio noise, the levels of these parameters under existing and proposed conditions were modeled for representative configurations (identified as cross sections 1 to 4) accounting for existing and proposed circuits. Conditions where alternative routes parallel existing transmission lines, but are separated by 500 feet or more, were not modeled because there would be no significant effect on levels of EMF, audible noise, or radio noise on the Project right-of-way. Appendix J includes profiles and tables for cross sections 1 to 4.

3.2.21.1.1 Magnetic Fields

The current flowing in the conductors of a transmission line generates a magnetic field near the transmission line. The strength of Project-related magnetic fields is expressed as magnetic flux density in units of milligauss (mG), where 1 Gauss = 1,000 mG¹⁸. It is important to consider that load current, expressed in units of amperes, generates magnetic fields around transmission-line conductors. Measurements of the magnetic field present a snapshot of the load conditions at a point in time. On a given day, throughout a week, or over the course of months and years, the magnetic field level can change depending on the patterns of power demand within the surrounding region.

3.2.21.1.2 Electric Fields

The voltage on the conductors of transmission lines generates an electric field in the space between the conductors and the ground. The strength of Project-related electric fields is expressed in units of kilovolts per meter (kV/m), which is equal to 1,000 volts per meter.¹⁹ Most objects, including fences, shrubbery,

¹⁸Scientists more commonly refer to magnetic flux density at these levels in units of microtesla. Magnetic flux density in mG units can be converted to microtesla by dividing by 10 (i.e., 1 mG = 0.1 microtesla).

¹⁹The strength of an electric field increases with voltage of the source and decreases with distance from the source. Typical electric field levels in the home and at work are less than 0.1 kV/m. Electric fields within 1 foot of small appliances are in the range of 0.02 to 0.2 kV/m, while the electric field immediately adjacent to the heating wires of some electric blankets can be considerably higher.

and buildings, block electric fields. Around transmission lines, measurable electric fields at ground level typically are highest in outdoor areas on the right-of-way cleared of vegetation.

3.2.21.1.3 Audible Noise

If the Project were implemented, some level of noise would result from construction, maintenance, and operation of the transmission line. During construction, noise would be generated by the equipment used for grading (access roads, tower sites, and series compensation stations), assembly and erection of towers (including helicopter-assisted construction), wire-pulling and splicing, equipment installation (series compensation stations), and reclamation activities. During maintenance activities, noise could be generated from a vehicle driving along the access roads for tower and line inspection, a helicopter flying along the right-of-way for tower and line inspection, or equipment, and crew conducting maintenance and/or repairs. Calculation of noise from these activities is complicated by the fact that noise levels continuously rise and fall (e.g., the quantity, distribution, and usage of equipment vary with the type of activity).

Also, at the surface of high-voltage transmission line conductors, the electric field may become concentrated on surface irregularities to cause an electrical breakdown of the insulating properties of the air, resulting in power loss at the site of breakdown (a phenomenon called corona). Corona can result in audible noise, particularly when the surrounding air contains numerous water droplets or snowflakes. If there is sufficient corona activity, audible noise can be noticeable within a few hundred feet of the transmission line. The intensity is most pronounced directly underneath the line conductors and decreases with distance from the transmission line.

Corona activity depends on a number of factors: altitude, line voltage, conductor size, conductor geometry, and weather conditions. Corona activity is most likely to occur near transmission lines at higher altitudes and is most pronounced during foul weather. The breakdown strength of air is 30 kilovolts per centimeter at sea level and decreases with increasing altitude. A transmission line is designed so that at a particular altitude, conductor size, and line voltage, the electric field at the conductor surface does not exceed the breakdown potential. Nevertheless, any irregularities on the conductor surface (e.g., nicks, water droplets, or debris) will create points where the electric field is intensified sufficiently to produce corona. In foul weather, raindrops or snowflakes accumulating on the conductor surface also will act as points for corona inception.

When corona occurs on 345kV transmission line conductors, it is accompanied by an audible snapping sound. If there is enough corona activity on the line, many small snaps from corona sources along a conductor may be sufficient, in combination, to produce discernible audible noise (sizzling or crackle) at the edge of the right-of-way.

Sound level is measured in decibels referenced to 20 micropascals, which is approximately the pressure threshold of human hearing at 1 kilohertz (kHz). The range of audible frequencies for the human ear is from approximately 20 Hz to 20 kHz, with peak sensitivity near 1 kHz. The change in sensitivity of the human ear with frequency is reflected in measurements by weighting the contribution of sound at different frequencies. Sound at 20 Hz or 20 kHz, where the ear is less sensitive, is given less weight than at frequencies near 1 kHz, where the ear is most sensitive. The weighting of sound over the frequency spectrum to account for the sensitivity of the human ear is called the A-weighted sound level.

When the A-weighted scale is applied to a sound-pressure measurement, the level is often reported as decibels on an A-weighted scale (dBA), referenced to the audible pressure threshold. The sound level of typical human speech is approximately 60 dBA, and background levels of noise in rural and urban environments are about 30 to 40 dBA. Specific identifiable noises such as birdcalls, neighborhood

activity, and traffic can produce audible noise levels of 50 to 60 dBA. Table 3-303 lists the sound intensities of common acoustic sources.

Source	A-weighted sound level (decibel)
Auto horn	110
Inside subway	95
Traffic	75
Conversation	65
Office	55
Living Room	45
Library	35
Bedroom	24

Corona-generated audible noise varies in time. To account for fluctuating sound levels, statistical descriptors are used to describe environmental noise. Exceedance levels (L levels) refer to the A-weighted sound level that is exceeded for a specified percentage of time. Thus, the L₅ level refers to the noise level that is exceeded only 5 percent of the time. Median sound level (L₅₀) refers to the sound level exceeded 50 percent of the time. Sound-level measurements are expressed in the L₅₀ level in fair and foul (steady rain) conditions.

3.2.21.1.4 Radio Noise

Overhead transmission lines can generate radio noise in the bands used for the reception of radio signals. Two potential mechanisms for interference are gap discharges and corona. Corona activity, described previously as a source of audible noise, also induces impulsive currents along a transmission line. These induced currents, in turn, cause wide-band radio frequency noise fields that can affect radio and television reception. Radio noise can produce interference to an amplitude-modulated signal such as a commercial radio audio signal (520 to 1,720 kHz). Frequency-modulated radio stations are generally not affected by electromagnetic noise from a transmission line.

Gap discharges are an intermittent phenomenon that is more common in distribution lines and low-voltage transmission lines. Electrical discharges on these lines can occur where small gaps develop between metallic line hardware (e.g., insulators, clamps, or brackets). Discharge across these gaps can cause incidental interference to radio-communication services; in this event, the sources of gap-type interference can be located and repaired. Gap discharges occur less frequently on high-voltage transmission lines, and the proposed line will be constructed with modern hardware that eliminates gap-type interference.

Radio noise levels are expressed as decibels above 1 microvolt per meter (dB μ V/m) to describe the electric field intensity incident on a reference antenna at 500 kHz, as recommended by the IEEE 1971). Weather has a large influence on corona-generated radio noise, as it does for audible noise. As with audible noise, corona-generated radio noise also varies in time. To account for fluctuating noise levels, statistical descriptors are used to describe radio noise. As with audible noise, radio noise levels are expressed as L₅₀ values during fair or foul (steady rain) conditions. Radio noise, like audible noise, is more pronounced at higher altitudes.

3.2.21.2 Regulatory Framework

Applicable guidelines or regulations at the federal, state, or local level that may apply to EMF, audible noise, or radio noise of the proposed transmission lines are discussed in this section.

3.2.21.2.1 Electric and Magnetic Fields

Research on the potential influence of EMF on organisms and human health has been conducted over many decades to understand basic interactions of EMF with biological organisms and cells and to investigate potential therapeutic applications. In the 1970s questions arose about potential adverse health effects because of some epidemiology studies that had suggested statistical associations between exposure to EMF and health conditions including cancer. Over the past 40 years considerable additional research has been conducted to address uncertainties in those studies and to determine if there was any consistent pattern of results from human, animal, and cell studies that would support such an association. The quantity and complexity of the research has led scientific and government health agencies to assemble multidisciplinary panels of scientists to conduct weight-of-evidence reviews and arrive at conclusions about the possible effects associated with EMF. The listing of these agencies (in ascending, chronological order of their most recent publication) is provided below:

- The National Institute for Environmental Health Sciences assembled a 30-person Working Group to review the cumulative body of epidemiologic and experimental data and provide conclusions and recommendations to the U.S. government (National Institute for Environmental Health Sciences 1998, 1999).
- The International Agency for Research on Cancer completed a full carcinogenic evaluation of EMF in 2002.
- The National Radiological Protection Board of the United Kingdom issued full evaluations of the research in 1992, 2001, and 2004, with supplemental updates and topic-specific reports published in the interim and subsequent to their last full evaluation in 2004 (National Radiological Protection Board 1992, 1994a, 1994b, 2001a, 2001b, 2004; Health Protection Agency 2006).
- The World Health Organization released a review in June 2007 as part of its International EMF Program to assess the scientific evidence of possible health effects of EMF in the frequency range from 0 to 300 gigahertz.
- The Health Council of the Netherlands, using other major scientific reviews as a starting point, evaluated recent studies in several periodic reports (Health Council of the Netherlands 2001, 2004, 2005, 2007, 2009).
- The Scientific Committee on Emerging and Newly Identified Health Risks issued a report to the Health Directorate of the European Commission in March 2007 and March 2009 updating previous conclusions (Scientific Steering Committee of the European Commission 1998; Scientific Committee on Toxicity, Ecotoxicity and the Environment 2001; Scientific Committee on Emerging and Newly Identified Health Risks 2007, 2009).
- The European Commission has also funded the European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN), a network of scientists convened to perform health risk assessments and provide scientifically based recommendations to the Commission. EFHRAN consulted other major reviews and evaluated epidemiologic and experimental research published after August 2008 to provide an updated health assessment (EFHRAN 2010, 2012).
- The International Commission on Non-Ionizing Radiation Protection (ICNIRP), the formally recognized organization for providing guidance on standards for non-ionizing radiation exposure for the World Health Organization, published a review of the cumulative body of epidemiologic and experimental data on EMF in 2003. The ICNIRP released exposure guidelines in 2010 that

updated their 1998 exposure guidelines. For both guidelines, they relied heavily on previous reviews of the literature related to long-term exposure, but provided some relevant conclusions as part of their update process (ICNIRP 1998, 2010).

- The Swedish Radiation Protection Authority (SSI), which became the Swedish Radiation Safety Authority (SSM) in 2009, evaluated current studies in several reports, using other major scientific reviews as a starting point (SSI 2007, 2008; SSM 2009, 2010, 2013).

Overall, the published conclusions of these scientific review panels have been consistent. None of the panels concluded that either electric fields or magnetic fields are a known or likely cause of any adverse health effect at the long-term, low exposure levels found in the environment. As a result, no standards or guidelines have been recommended to prevent this type of exposure; however, from all the research that has been conducted, it was confirmed that short-term exposure to higher intensities of EMF (even above exposure levels of electrical and industrial workers) could produce adverse stimulation of nerves and muscles. Hence, several scientific agencies have recommended health-based guidelines to limit high intensity EMF exposure. These guidelines include exposure limits for the general public recommended by the International Committee on Electromagnetic Safety (ICES) and ICNIRP to address health and safety issues (ICES 2002; ICNIRP 2010). These guidelines are explained below.

The federal government, the State of Wyoming, the State of Colorado, and the State of Utah have not enacted standards for EMF from transmission lines or other 60-Hz sources. Several other states have statutes or guidelines that apply to fields produced by new transmission lines, but these guidelines are not health-based. The basis for limiting magnetic fields from transmission lines in Florida and New York was to maintain the status quo so fields from new transmission lines would be no higher than those produced by existing transmission lines. Florida and New York, for example, have enacted standards to limit magnetic fields at the edge of the right-of-way from transmission lines (Florida Department of Environmental Regulation 1989; Florida Department of Environmental Protection 1996; New York Public Service Commission 1978, 1990). For 345kV transmission lines, these limits are 200 mG at the edges of new rights-of-way.

Recommended Exposure Limits

The only confirmed relationship between electric fields or magnetic fields and an adverse biological or health effect is when electric currents, at very high levels of exposure, are experienced in the body as a shock-like effect. The levels at which these short-term effects occur are typically much higher than levels found under transmission lines, and higher than levels found in most homes or commercial establishments. As mentioned, ICES and ICNIRP have recommended exposure limits to protect against the occurrence of these acute adverse effects from short-term exposures. Table 3-304 shows the recommended exposure limits.

TABLE 3-304 REFERENCE LEVELS FOR WHOLE BODY EXPOSURE TO 60 HERTZ FIELDS GENERAL PUBLIC		
Organization Recommending Limit	Magnetic Fields¹	Electric Fields¹
International Commission on Non-ionizing Radiation Protection	2,000 milligauss	4.2 kilovolts per meter (kV/m)
International Committee on Electromagnetic Safety	9,000 milligauss	5 kv/m 10 kV/m ²
NOTES: ¹ Both organizations judged that evidence for effects from long-term exposure was insufficient for setting exposure standards. ² Exception within transmission line right-of-way		

Research also has been conducted on the possible effect of EMF on wild and domestic animals in response to concerns about the effects of high-voltage and ultra-high-voltage transmission lines in the vicinity of farms and the natural habitat of wild animals. National agencies and universities have conducted research on an assortment of fauna using a variety of study designs including observational studies of animals in their natural habitats and highly controlled experimental studies. The research to date does not suggest that AC magnetic or electric fields (or any other aspect of high-voltage transmission lines, such as audible noise) result in adverse effects on the health, behavior, or productivity of fauna, including livestock (e.g., dairy cows, sheep, and pigs) and a variety of other species (e.g., small mammals, deer, elk, birds,²⁰ and bees).

The well-established exception was reported by Greenberg et al. (1981) who studied the effect of a 765kV transmission line on honeybee hives placed at varying distances from the transmission line's centerline, with some hives exposed to EMF from the line and some shielded. Differences between the shielded and unshielded hives were reported at exposures above 4.1 kV/m, including decreases in hive weight, abnormal amounts of propolis at hive entrances, increased mortality and irritability, loss of the queen in some hives, and a decrease in the hive's overwinter survival. These adverse effects were reported only in the unshielded group. Since the shielding only prevented exposure to electric fields, not magnetic fields, the results indicate that these adverse effects are attributable to electric field exposure. These results have been replicated by other investigators (Rogers et al. 1980, 1981, 1982). Further studies indicated that the effects were indirect, i.e., the electric fields did not affect the bees directly, and that electric field levels greater than 200 kV/m were required to affect the behavior of free-flying bees. Thus, heating of the hive by induced currents caused some of the adverse effects and the rest were attributed to shocks within the hive (Bindokas et al. 1988a, 1988b, 1989). Prevention is easily accomplished by placing a grounded metal cover on top of the hive. Since the nests of wild bees in the ground or in trees contain no metal or highly conductive materials, there appears to be little relevance of such effects on wild bees. At these locations, wild bees also are naturally shielded from electric fields. Laboratory studies indicate that bees are unable to discriminate 60-Hz magnetic fields reliably at intensities less than 4,300 mG, although they can detect fluctuations in the earth's static geomagnetic field as weak as 0.26 mG (Kirschvink et al. 1997). The difference in the sensitivity of honey bees is an illustration that a sensory mechanism has developed to detect static magnetic fields that effectively rejects extraneous signals, in this case AC (60-Hz) magnetic fields.

3.2.21.2.2 Audible Noise

In determining the impact of noise, the important factor is the proximity of the activity to wildlife and persons detecting the sounds. The alternative routes considered the Project traverse areas that are predominantly rural open space and remote, with background noise typical of such settings. In most cases, the closest humans would be construction workers. Where construction would occur near more populated areas, the noise from construction (and subsequent maintenance) might be audible; however, such noise would be temporary and possibly considered only as a nuisance. Wildlife likely would avoid the temporary construction areas (refer to Sections 3.2.7 and 3.2.8).

There are no federal regulatory requirements for the audible noise level from transmission lines. The U.S. EPA has audible noise guidelines developed for the protection of public health and welfare that are widely accepted by state and local governments for the long-term exposure to environmental noise (EPA 1974). The EPA employs the equivalent sound level (L_{eq}) and day-night sound level (L_{dn}) metrics in its guidelines. L_{eq} is the energy-averaged sound level over a specified time, whereas the L_{dn} is a 24-hour

²⁰Sage-grouse is a species of interest with respect to the proposed EGS transmission line. No studies have focused specifically on sage grouse, but are based on research on other avian species. No adverse effects of EMF on grouse would be expected. The effect of transmission line construction on grouse habitat is an issue that is addressed in Section 3.2.8.5 of the EIS.

average sound level that includes a 10 dBA penalty to sound levels during nighttime hours (10:00 pm to 7:00 am). The EPA’s guideline lists an L_{dn} of 55 dBA to protect the public from interference to activity or annoyance outdoors in residential areas. Outdoor noise generally does not contribute to indoor levels, which are dominated by activities within a building or residence (EPA 1974).

The predictions of audible noise in Appendix J are presented as median levels (L_{50} exceedance levels) during foul weather. To convert these levels to L_{dn} levels requires information or assumptions regarding ambient noise, percentage of foul weather, and the statistical distribution of foul-weather audible noise. The correction factors used to obtain L_{dn} levels from foul-weather L_{50} levels are shown in Table 3-305 for various frequencies of foul weather and ambient noise level.

Frequency	L_{eq} to L_{50} Foul		L_{dn} to L_{50} Foul	
	40 dBA ambient	No ambient	40 dBA ambient	No ambient
0	-14.0	-24.0	-7.6	-17.6
1	-13.0	-18.4	-6.6	-12.0
5	-10.4	-12.4	-4.0	-6.0
10	-8.4	-9.6	-2.0	-2.9
100	+0.3	+0.3	+6.7	+6.7

SOURCE: Dietrich 1982
 NOTES:
 dBA = Decibel (A-weighted)
 L_{50} = Median sound level
 L_{dn} = Day-night sound level
 L_{eq} = Equivalent sound level

The appropriate correction factor from Table 3-305 can be applied to the calculated L_{50} level to yield an L_{dn} level. A correction factor of -2.9 dBA, corresponding to 10 percent occurrence of foul weather, was used in this report.²¹

3.2.21.2.3 Radio Noise

Wyoming, Colorado, and Utah have no limits for radio interference. Electromagnetic interference from power transmission systems in the United States is governed by the Federal Communication Commission’s (FCC) *Rules and Regulations* (FCC 2013). A power transmission line is categorized by the FCC as an “incidental radiation device,” which is “a device that radiates radio frequency energy during the course of its operation although the device is not intentionally designed to generate radio frequency energy.” Such a device “shall be operated so that the radio frequency energy that is emitted does not cause harmful interference. In the event that harmful interference is caused, the operator of the device shall promptly take steps to eliminate the harmful interference.” In this case, “harmful interference” is defined as “any emission, radiation or induction which endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radio communication service operating in accordance with this chapter” (FCC 2013).

Historically, transmission-line operators have not had difficulty operating under the present FCC rules since most sources of harmful interference are due to gap-type discharges that can be identified and repaired (Loftness 1980). Residences very near transmission lines, however, may be affected by corona-type radio noise in foul weather. For this reason, the *Radio Noise Design Guide* (IEEE 1971) identifies an

²¹Refer to NowData - National Oceanic and Atmospheric Administration (NOAA) Online Weather Data. NOAA. Retrieved February 14, 2012. NOAA reports 103 average precipitation days (≥ 0.01 in) per year for Provo, Utah.

acceptable limit of average fair-weather radio noise of 40 dB μ V/m at 100 feet (30 meters) from the outside conductor.

3.2.21.2.4 Pacemakers

Implanted cardiac pacemakers are designed to detect abnormal electrical signals from the beating heart and administer therapy in the form of electrical pulses through implanted electrodes to maintain or restore normal heart function. Many sources of EMF at a variety of frequencies have been reported to affect pacemaker function, including iPods and other personal MP3 players, cell phones, wireless phones, electric pencil sharpeners, power tools, anti-theft and security devices in stores, libraries, and airports, video games, ordinary magnets (i.e., on refrigerators or kitchen cabinets), escalators, electric vehicle ignitions and motors, among other sources. If pacemaker wearers, however, avoid proximity to these devices, then their pacemakers will not be subject to potential interference from EMF.

Literature suggests pacemakers also can be affected by EMF from utility power sources and may be somewhat more sensitive to 60-Hz electric fields than 60-Hz magnetic fields. Buildings, walls, shrubbery, and vehicles—among other conductive objects—can effectively shield electric fields under most circumstances, thereby lessening this potential for effect on pacemakers. The manufacturers of pacemakers also have designed their devices in various ways to minimize potential interference from endogenous sources (e.g., muscle potentials) and interference by conducted currents from exogenous sources (e.g., touching electrical appliances). These measures also serve to minimize potential interference by electric fields. To protect the patient, most pacemakers (particularly new ones) are designed to filter out external electrical signals and go into an automatic pacing mode when interference is detected.

The expected electric field level at the edge of the proposed right-of-way for the Project is less than 1.8 kV/m, without taking into account any shielding provided by objects in the environment, and the magnetic field level is 262 mG (Appendix J, Tables J-2 and J-3). While there is no universal guidance as to acceptable levels of EMF for pacemakers, the American Conference of Governmental Industrial Hygienists has recommended guidelines for various occupational exposures, including EMF. These guidelines are designed to identify levels to which nearly all workers may be repeatedly exposed without adverse effect and, for EMF, suggest patients with pacemakers or similar devices limit their exposure to electric fields to 1 kV/m and magnetic fields to 1,000 mG (American Conference of Governmental Industrial Hygienists 2009). As shown in Appendix J, the field levels diminish quickly with distance from the conductors (Figures J-1 to J-8). Therefore, the expected levels of EMF just outside the right-of-way would be below the American Conference of Governmental Industrial Hygienists' guideline levels.

3.2.21.2.5 Induction and Field Perception

Short-term effects from transmission-line electric fields are associated with perception of induced currents and voltages or perception of the field. Under certain conditions, the electric field can be perceived through hair movement on an upraised hand or arm of a person standing on the ground under high-voltage transmission lines. This perception is most likely to occur at midspan under a high-voltage transmission line and less likely to occur in locations where the electric field is less than 2 kV/m. Therefore, it is unlikely the field would be perceived beyond the edge of the right-of-way. The presence of vegetation may shield the electric field and prevent perception. Persons in the cabs of trucks or other vehicles are shielded by the conductive metal of the vehicle from the electric field and from induced effects such as shocks.

Induced current or spark discharge shocks can be experienced under certain conditions when a person contacts objects in an electric field. Such effects occur in the fields associated with transmission lines that have voltages of 230kV or higher. Shocks of a magnitude that could be harmful from induced currents

would not occur under the existing or proposed lines because clearances aboveground required by the NESC preclude such shocks from large vehicles, and grounding practices eliminate large stationary objects as sources of such shocks.

Minor shocks that produce no harm can be annoying or unexpected and can occur under higher voltage transmission lines when making contact with ungrounded conducting objects (e.g., vehicles or equipment). These shocks would be uncommon and mostly perceived as a nuisance when they occur. Shocks from electric field induction on large metal objects next to the right-of-way, or magnetic induction on fences, irrigation pipes, pipelines, electrical distribution lines, or telephone lines that form a conducting loop for long distances parallel to a transmission line, can be prevented by utility policies for routinely grounding such installations located on or near the right-of-way.

Limiting the possibility of induced currents flowing from farm machinery and large vehicles under transmission lines to persons is accomplished by maintaining sufficient conductor clearance above vehicles in the final design. This is so the induced short-circuit current in the largest anticipated vehicle under the line is limited to 5 milliamperes or less per the NESC.

Vehicles should not be refueled under the proposed transmission line unless specific precautions are taken to ground the vehicle and the fueling source.

3.2.21.3 Environmental Setting

3.2.21.3.1 Modeled Cross Sections

The modeled cross sections are longitudinally uniform and located between tangent structures on the Project route. Dead-end or strain structures at points where the proposed 500kV transmission line terminates or changes direction abruptly were not modeled. As with line crossings, regions with abrupt turns alter EMF, audible noise, and radio noise levels in the span of a few hundred feet and are not representative of the EMF and noise levels encountered along the majority of the proposed 400-mile route. Schematic depictions of cross sections 1 to 4 are included in Appendix J.

Existing transmission lines in the vicinity of the Agency and Applicant Preferred Alternatives, modeled in cross sections 1 to 4, include the following:

- Mona to Bonanza 345kV transmission line (cross section 2)
- Spanish Fork to Carbon No. 1 and No. 2 138kV transmission lines (cross section 3)
- Hayden to Artesia 138kV transmission line and Milford to Cove Fort 46kV sub-transmission line (cross section 2)

Cross Section 1

Cross section 1 (refer to Appendix Figure J-1) depicts the Project at locations where adjacent lines are located at distances greater than 500 feet from the reference centerline of the 500kV circuit. Cross section 1 is representative of the majority of the Project, including the Agency and Applicant Preferred Alternatives in Wyoming; Links C31, C61, C71, C91 in Colorado; and the Agency and Applicant Preferred Alternatives in Uintah, Carbon, Duchesne, and Wasatch counties in Utah.

In cross section 1, the proposed 500kV transmission line is modeled in the center of a proposed 250 foot right-of-way. Phase conductors of the proposed 500kV circuit were modeled in a delta configuration with triple-bundled 1949.6 kcmil “Athabaska” trapezoidal wire and 18-inch subconductor spacing. A 27.75-foot horizontal phase spacing and 47-foot midspan conductor height (60 degrees Fahrenheit conductor temperature at average load) were modeled for the proposed circuit. At peak load and

maximum sag (239 degrees Fahrenheit conductor temperature), a midspan conductor height of 34.6 feet was included in EMF calculations.

The phasing of the 500kV transmission line proposed as part of the Project has not been designed in cross sections 1 to 4. The profiles in Appendix J were calculated with north-south ABC phasing for the proposed 500kV circuit. In addition, Appendix J summarizes calculated EMF values for all permutations of the existing and proposed transmission-line phases.

Cross Section 2

Cross section 2 (refer to Appendix Figure J-2) depicts the proposed Project approximately 250 feet from the existing Mona to Bonanza transmission line near Fruitland, Utah, and at portions of the Project route in Links U460, U621, U625, U637, U638, and U639. In cross section 2, the Mona to Bonanza 345kV transmission line is modeled to the north of the Project on an existing 150-foot right-of-way. Phase conductors of the existing 345kV circuit were modeled in a delta configuration with double-bundled 1,590 kcmil “Falcon” conductors and 18-inch subconductor spacing. A 17-foot horizontal phase spacing and 38-foot midspan conductor height were modeled for the 345kV circuit.

The cross section 2 profiles in Appendix J were calculated with north-south ABC phasing for the existing 345kV circuit. In addition, Appendix J summarizes calculated EMF levels for all permutations of the existing and proposed transmission-line phases.

Cross Section 3

Cross section 3 (refer to Appendix Figure J-3) depicts the proposed Project approximately 250 feet from the existing Spanish Fork to Carbon transmission lines #1 and #2 near Colton, Utah. In cross section 3, the Spanish Fork to Carbon 138kV transmission lines are modeled to the north of the Project with a centerline separation of 100 feet. Each of the existing 138kV lines is permitted for a 100-foot right-of-way, for a total of 200 feet of existing right-of-way in cross section 3. Phase conductors of the existing 138kV circuits were modeled in a horizontal configuration with 4/0 cable on Spanish Fork to Carbon #1 (north in cross section 3) and 795 kcmil “Drake” conductors on Spanish Fork to Carbon #2 (south in cross section 3). A 13.5-foot horizontal phase spacing and 32-foot midspan conductor height were modeled for both 138kV circuits.

The cross section 3 profiles in Appendix J were calculated with north-south ABC phasing for the existing 138kV circuits. In addition, Appendix J summarizes calculated EMF values for all permutations of the existing and proposed transmission-line phases.

Cross Section 4

Cross section 4 (refer to Appendix Figure J-4) depicts the proposed Project approximately 250 feet from the existing Hayden to Artesia transmission near Craig, Colorado, and in portions of Links C101, C105, C106, C170, C171, C172, C173, C174, and C186. In cross section 4, the Hayden-Artesia 138kV transmission line is modeled to the south of the Project on an existing 80-foot right-of-way. Phase conductors of the existing 138kV circuit were modeled in a horizontal configuration with 556 kcmil “Parakeet” conductors. A 14-foot horizontal phase spacing and 32-foot midspan conductor height were modeled for the 138kV circuit.

The cross section 4 profiles in Appendix J were calculated with north-south ABC phasing for the existing 138kV circuit. In addition, Appendix J summarizes calculated EMF values for all permutations of the existing and proposed transmission-line phases.

3.2.21.4 Study Methodology

3.2.21.4.1 Calculations

Pre- and post-construction EMF, audible noise, and radio noise levels were calculated using computer algorithms developed by the BPA (BPA 1991). The inputs to the program include data regarding voltage, current flow, circuit phasing, and conductor configurations. The resultant fields and noise levels associated with transmission lines were estimated along transects perpendicular to the transmission centerline at midspan. These midspan profiles model the transmission lines at the point of greatest conductor sag with a uniform cross section.²² Existing and proposed lines were modeled with balanced currents on the phase conductors.

3.2.21.4.2 Electric and Magnetic Fields

EMF levels were calculated at a height of 1 meter (3.28 feet) aboveground in accordance with the standard method for measuring EMF near transmission lines (IEEE Standard 1308-1994). EMF levels are expressed as the resultant (root mean square) of magnetic field components measured in the x, y, and z axes.²³ The electric field calculations assumed an overvoltage condition of 5 percent for 345kV transmission lines, and an overvoltage of 10 percent for 500kV transmission lines.

Magnetic fields around the existing and proposed transmission lines depend on current, which increases with increasing loading. Loading on existing and proposed lines were provided by POWER Engineers and are summarized in Table 3-306 as average and peak amperes per phase. Since magnetic field exposures at peak loading would be expected to occur only for a limited number of hours on a limited number of days each year, the calculated magnetic field levels at annual average loading provide a better estimate of typical potential exposures. Magnetic fields calculated at annual average loading are depicted in the graphical profiles in Appendix J.

The profiles in Appendix J were calculated with north-south ABC phasing for the existing and proposed circuits. Since the phasing of the proposed 500kV transmission line has not been designed in cross sections 1 to 4, Appendix J also summarizes calculated EMF values for permutations of the existing and proposed transmission-line phases.

3.2.21.4.3 Audible Noise

Audible noise levels across the right-of-way, L₅₀ fair and L₅₀ rain, are reported for the existing and proposed 345kV transmission lines at a height of 5 feet aboveground at 7,500 feet mean sea level. The 5-foot height estimates the sound-pressure level that would be perceived by a standing listener. When computed according to the BPA methods used in this EIS, the median audible noise levels during average fair weather are 25 dBA lower than foul weather (stable rain values).

3.2.21.4.4 Radio Noise

Radio noise levels are expressed as median values for fair or foul weather (steady rain) conditions for a 1-meter high antenna and a signal at 1 megahertz. When computed according to the BPA methods used in

²²A “uniform cross-section” means the BPA algorithms model the transmission conductors at a uniform height above flat terrain for the entire distance between adjacent structures.

²³Root-mean-square refers to a common method of reporting the effective magnitude of voltage, current, or EMF levels of an AC system. The x, y, and z axes refer to the vertical, transverse, and longitudinal directions relative to the transmission centerline. The BPA algorithms assume a uniform right-of-way cross-section with no longitudinal component of the magnetic field.

this EIS, median radio noise levels during average fair weather values are 17 dB μ V/m lower than median radio noise levels calculated during foul weather (stable rain values).

3.2.21.4.5 Loads

The Applicant and POWER Engineers identified existing transmission facilities aligned with the Agency and Applicant Preferred Alternatives of the 500kV portions of the Project. Existing transmission lines in cross sections 2 to 4 were modeled using average and peak loading derived from 2012 operational data, also provided by POWER Engineers. The peak load of the proposed 500kV transmission line was based on the design capacity of the Project (1,500 megawatts). The average load for the 500kV circuit was modeled as 943 megavolt-amperes (MVA), based on the historical relationship between peak and average flows on the Mona to Bonanza transmission line, recorded in 2012.

Modeled loading for average and peak conditions are summarized in Table 3-306. A 10 percent power factor was modeled for all transmission lines except the Hayden to Artesia transmission line, for which monitored real and reactive load flows were provided by POWER Engineers.

3.2.21.5 Results

3.2.21.5.1 Magnetic Fields

Figures J-1 to J-4 in Appendix J, depict calculated magnetic field profiles for average load in cross sections 1 to 4. Calculated magnetic field levels are tabulated at the end of Appendix J for the average-load case (Table J-1) and peak-load case (Table J-2). Figures J-1 to J-4 and Tables J-1 to J-2 summarize calculated magnetic field levels with horizontal ABC phasing on all circuits, with the A phase located on the north side of the right-of-way.

In cross section 1 (Figure J-1), the calculated magnetic field level at the edge of the right-of-way is 24.6 mG under average-load conditions. Under peak-load conditions, with the Project operating at 1,500 MVA design capacity, the highest calculated magnetic field at the right-of-way edge is 42.0 mG (Table J-2).

Transmission Line	Voltage (kV)	Average load		Peak load	
		MVA	Current (amperes)	MVA	Current (amperes)
Aeolus ¹ to Clover	500	943	1089	1500	1732
Mona to Bonanza ¹	345	396	661	628	1051
Spanish Fork to Carbon ¹ #1	138	38.6	157	80.2	335
Spanish Fork to Carbon ¹ #2	138	122	511	188	789
Hayden ¹ to Artesia	138	24.1 ²	101	27.5 ²	115

NOTES:
¹Currents measured from indicated terminal
²Average load 23.7 MW, -4.3 MVAR; peak load 27.1 MW, -4.5 MVAR
 kV = Kilovolt
 MVA = megavolt-amperes
 MVAR = megavolt-amperes reactive
 MW = megawatt

In cross section 2 (Figure J-2), the magnetic field levels on the proposed right-of-way are dominated by current on the 500kV circuit. Compared to cross section 1, the calculated magnetic fields at the edge of the right-of-way are 1 mG higher on the southern (negative) edge and 2.7 mG higher on the northern (positive) edge (refer to Table J-1). Under modeled loading conditions, little cancellation of fields is

realized by phasing selection (refer to Table J-3). For any given phasing of the existing Mona to Bonanza transmission line—and any selected phasing of the proposed 500kV transmission line—the maximum calculated magnetic field on the proposed right-of-way varies between 129 and 133 mG for average-load conditions. On the south side of the proposed right-of-way, furthest from the existing Mona to Bonanza line, phasing selection impacts the calculated magnetic fields by approximately ± 1 mG (23.6-25.6 mG at the southern right-of-way edge in cross section 2, versus 24.6 mG in cross section 1). Greater cancellation of fields occurs on the north edge of the proposed right-of-way. At this location, the calculated magnetic fields under average-load conditions vary with phasing between 16.7 and 33.0 mG.

In cross section 3 (Figure J-3), the magnetic field levels on the proposed right-of-way are again dominated by current on the 500kV circuit. Compared to cross section 1, the calculated magnetic fields at the edge of the right-of-way are 0.5 mG higher on the southern (negative) edge and 2.1 mG higher on the northern (positive) edge (refer to Table J-1). As with cross section 2, little cancellation of fields is realized by phasing selection (refer to Table J-3). At the southern edge of the proposed right-of-way, calculated magnetic fields vary by approximately ± 0.5 mG compared to cross section 1. The greatest cancellation of fields occurs on the north edge of the proposed right-of-way, closest to the existing Spanish Fork to Carbon transmission lines. At this location, the calculated magnetic fields under average-load conditions vary with phasing between 21.5 and 28.4 mG.

In cross section 4 (Figure J-4), the calculated magnetic fields at the edge of the right-of-way are elevated by only 0.1-0.4 mG in proximity to the existing Hayden to Artesia transmission line (refer to Table J-1). In this cross section, the greatest cancellation of fields occurs on the southern edge of the proposed right-of-way, closest to the existing 138kV circuits. At this location, the calculated magnetic fields under average-load conditions vary with phasing only slightly, between 24.0 and 25.3 mG.

In any modeled condition, the calculated magnetic field levels associated with the operation of the Project are below limits for the general public recommended by ICNIRP and ICES. A portion of the Project study area is in Colorado and Section 4 CCR 723-3102(c), (d) and 723-3206(e) of the Colorado Public Utilities Commission's rules require that calculated levels of magnetic fields from transmission lines not exceed 150 mG at the edge of the right-of-way at the continuous MVA circuit rating. This limit would be met by the proposed transmission line. If the proposed line were to cross over an existing transmission line, the increase in the EMF would be confined mostly to the right-of-way under and around the crossing and mitigated by the increased height of the proposed transmission line aboveground.

3.2.21.5.2 Electric Fields

Figures J-5 to J-8 in Appendix J depict calculated electric field profiles for average line heights in cross sections 1 to 4. Calculated electric field levels are tabulated at the end of Appendix J for average and minimum conductor heights (Tables J-5 and J-6). At peak-load conditions and a minimum ground clearance of 34.6 feet, the highest calculated electric field beneath the conductors of the proposed 500kV transmission line is 9.93 kV/m. This electric field level will be encountered for a few hours each year during periods of peak load, and only at the point of lowest conductor sag within some spans. The highest calculated electric field level (0.76 kV/m) at the edge of the right-of-way associated with the operation of the Project is below limits recommended by the ICNIRP and the ICES for the general public.

As for the calculated magnetic fields, the calculated electric fields vary only slightly with phasing selection. Tables J-7 and J-8 summarize the ranges of calculated electric field levels in cross sections 1 to 4 over all permutations of the phasing of existing and proposed transmission lines. Under any modeled condition, the maximum calculated electric field on the proposed right-of-way is 9.95 kV/m. Likewise, at the edges of the proposed right-of-way; the maximum calculated electric field is 0.80 kV/m, below limits recommended by the ICNIRP and the ICES for the general public.

3.2.21.5.3 Audible Noise

Figures J-9 to J-12 in Appendix J depict calculated audible noise profiles for average line heights in cross sections 1 to 4. Calculated audible noise levels are provided in Table J-9 for average conductor heights. The levels of audible noise from AC transmission lines are higher in foul weather than in fair weather. In fair and foul weather, the existing lines are not significant sources of audible noise. In fair weather, the audible noise from the proposed line would be hard to detect. Assuming 10 percent occurrence of foul weather and no ambient noise, the L_{dn} is 2.9 dBA higher than the L_{50} foul weather values provided in Table J-9. With this addition, the calculated levels of foul-weather audible noise outside the right-of-way are lower than the EPA's L_{dn} guideline of 55 dBA (EPA, 1974). A portion of the Project study area is in Colorado and Section 4 CCR 723-3102(c) of the Colorado Public Utilities Commission's rules requires that calculated levels of audible noise from transmission lines in residential areas not exceed 55 dBA during the day and 50 dBA at night. These limits would be met 25 feet outside the right-of-way of the proposed transmission line in accordance with this rule. If the proposed line were to cross over an existing transmission line, the increase in the increase in the audible noise level would be confined mostly to the right-of-way under and around the crossing and mitigated by the increased height of the proposed transmission line aboveground.

Public concern about audible noise from wind turbines has stimulated concern about other potential noise sources. One aspect of this concern has focused on low frequency audible noise and infrasound (less than 20 Hz, the accepted threshold for human hearing). While larger wind turbines produce measureable infrasound (Mollera and Pedersen 2011), there are no data supporting a similar claim for high voltage transmission lines (Leventhall 2003). As for low frequency noise, transmission lines produce little noise below 120 Hz as confirmed by measurements down to 31 Hz around a 765kV transmission line during rain when corona-generated audible noise is greatest (IEEE 1985).

3.2.21.5.4 Radio Noise

Figures J-13 to J-16 in Appendix J depict calculated radio noise profiles for average line heights in cross sections 1 to 4. Calculated radio noise levels are tabulated at the end of Appendix J for average conductor heights (Table J-10). At 100 feet (30 meters) from the outermost conductors in cross sections 1 to 4, the calculated L_{50} fair weather radio noise levels are below 40 dB μ V/m and meet the criterion for fair-weather radio noise recommended in the IEEE Radio Noise Design Guide (IEEE 1971).