Summary

SUMMARY

Introduction

This document, the Environmental Impact Statement (EIS) and Land-use Plan Amendments (LUPAs), is being prepared in response to an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299), submitted by PacifiCorp (doing business as Rocky Mountain Power[1], the Applicant) to the Bureau of Land Management (BLM) (Case Files: WYW 174597, COC-72907, UTU-87237) and U.S. Forest Service (USFS) for the Energy Gateway South Transmission Project (Project). The original application was submitted and received on November 28, 2007; revised by the Applicant on December 17, 2008, and October 11, 2010 to reflect changes in the Project description, including reducing the geographic extent of the Project; and on January 15, 2013, to inform the BLM of the Applicant's preferred route; and April 8, 2015, to reflect additional changes in the Project description and inform the BLM of the Applicant's preferred route. The BLM, as lead federal agency and in coordination with several cooperating agencies (including the USFS), are preparing this EIS to evaluate and disclose the potential Project-related environmental impacts that could result from implementation of the action proposed by the Applicant (Proposed Action) and alternatives of the Proposed Action. Approximately 1,450 miles of alternative routes, through 16 counties in Wyoming, Colorado, and Utah, are being evaluated for the transmission line. Portions of the alternative routes cross land administered by 10 BLM field offices (Rawlins, Little Snake, White River, Grand Junction, Vernal, Moab, Price, Salt Lake, Richfield, and Fillmore) and three national forests (Ashley, Uinta-Wasatch-Cache[2], and Manti-La Sal). Also, depending on the route selected for construction of the transmission line, land in the boundaries of the Uintah and Ouray Indian Reservation; land administered by the National Park Service (NPS); land administered by the Bureau of Reclamation (USBR); and land administered by the Utah Reclamation Mitigation and Conservation Commission (URMCC) may be crossed. Because federal land would be crossed, the Applicant submitted an application to locate the proposed transmission facilities on federal land.

After reviewing the scope of the Project, the BLM determined the Proposed Action is a major federal action and would require preparation of an EIS in compliance with requirements of the National Environmental Policy Act of 1969 (NEPA), as amended (United States Code [U.S.C.]: Title 42, Chapter 55, §4321 et seq.), and the Council on Environmental Quality regulations for implementing NEPA (Code of Federal Regulations [CFR]: Title 40, Parts 1500-1508).

The BLM, serving as the lead federal agency for preparing the EIS and LUPAs, published a Notice of Intent (NOI) to prepare the EIS and potential LUPAs in the *Federal Register* on April 1, 2011. Twenty-eight agencies are participating as cooperating agencies in preparation of the EIS.

Agencies' Purpose and Need for the Federal Action

The purpose of this federal action is to respond to the Applicant's right-of-way application for construction, operation, and maintenance of the proposed transmission line and associated facilities on federal land.

[1]Rocky Mountain Power is the trade name under which PacifiCorp delivers electricity to more than 955,000 industrial, commercial, and residential customers in parts of Wyoming, Utah, and Idaho.

[2]In March 2008, the Uinta National Forest and Wasatch-Cache National Forest were combined into one administrative unit. Each of these national forests is still operating under individual Forest Plans approved in 2003. When the term Uinta is used in context with the USFS, it refers to the Uinta Planning Area of the Uinta-Wasatch-Cache National Forest.

The purpose and need of both the BLM and the USFS stem from the overarching policy and direction in the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, and its mission, which is multiple-use, sustained-yield management of the National System of Public Lands and National Forest System lands. The FLPMA also provides the BLM and USFS with discretionary authority to grant use (i.e., right-of-way and special-use authorization, respectively) of land they administer, taking into consideration impacts on natural and cultural resources (including historical resources). In doing so, the BLM and USFS must endeavor "to minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment" through avoidance or mitigation (FLPMA Title V).

The agencies' purpose and need is further guided by the President's Climate Action Plan (President of the United States 2013), which is a broad-based plan to cut carbon pollution. Part of the plan focuses on expanding and modernizing the electric grid to promote clean energy sources. To this end, the agencies are charged with analyzing applications for utility and transportation systems on land they administer. When analyzing applications, the agencies also must consider the recommendations in the 2011 Western Electricity Coordinating Council 10-Year Regional Transmission Plan (Western Electricity Coordinating Council 2011) regarding future transmission needs.

Summary of Changes from the Draft Environmental Impact Statement

Substantive changes made between the Draft and Final EIS are demarcated on the left margin of the summary by a vertical black line.

Revisions were made to the alignment of the Agency Preferred Alternative route. Also, a series of route variations to compare local routing options for segments of the Agency Preferred Alternative route were developed. These include the following:

- Colocation of the reference centerline for the transmission line closer to existing and/or proposed transmission lines
- Route variation in the area of the Deerlodge Road entrance to Dinosaur National Monument
- Route variation in the Colorado-Utah border area
- Route variation in the Uinta Basin
- Route variation in the Argyle Canyon area (including Camp Timberlane, Argyle Canyon, and Argyle Ridge
- Route variation in Spanish Fork Canyon

These revisions and variations, described in Section 2.1.1 and shown in Maps 2-1a and 2-1b and in Appendix F maps, were analyzed and are documented in the Final EIS.

Decisions to be Made

The decision to be made by the BLM and USFS is whether or not to grant the Applicant a right-of-way (BLM) or special-use authorization (USFS) to construct, operate, and maintain the proposed facilities on land they administer and under what terms and conditions. In so doing, the BLM, as lead agency, in coordination with cooperating agencies, analyzes, through the EIS, the Applicant's plan for and the potential environmental impacts of constructing, operating, and maintaining the Project. Based on the analysis presented in this EIS, the BLM will issue a Record of Decision (ROD) on whether or not to grant a right-of-way on land administered by the BLM, and the USFS will issue a ROD on whether or not to grant a special-use authorization for land administered by the USFS. A draft ROD for the USFS is published with this Final EIS and Proposed LUPAs. Depending on the route selected, other federal

agencies and the Ute Indian Tribe also may have decisions to make if the Proposed Action affects land administered by them. If the selected route crosses land of the Uintah and Ouray Indian Reservation and/or individual Indian-owned land, on obtaining consent from the tribe and/or Indian landowner(s), the Bureau of Indian Affairs (BIA) may issue encroachment permits and grants of easement for the Proposed Action. If the selected route crosses the Deerlodge Road entrance to Dinosaur National Monument, land owned in fee by the NPS, the NPS may grant a right-of-way across the road for the Proposed Action. If the selected route crosses land administered by the USBR, the USBR may issue a license for the Proposed Action. If the selected route crosses land administered by the URMCC, the URMCC may issue a license agreement for the Proposed Action. If applicable, these agencies may each issue a ROD.

In accordance with 43 CFR Part 1610.0-5(b), actions that occur on federal lands administered by the BLM and USFS, including a decision to grant a right-of-way (BLM) or special-use authorization (USFS) under Title V of the FLPMA, are guided by decisions in approved BLM resource management plans (RMPs) and USFS land and resource management plans (LRMPs). The authorizations and actions proposed for approval in this EIS have been evaluated to determine whether they conform to the decisions in the referenced land-use plans. The BLM and USFS have determined that, depending on the route selected, the Proposed Action would not conform to certain aspects of the relevant land-use plans. That is, in some cases, the authorizations and actions proposed in this document for approval would result in a change in the scope of resource uses, terms and conditions, and other decisions of agency land-use plans, which may require amendment of those plans. In addition to the decision whether to grant the Applicant right-of-way (BLM) or special-use authorization (USFS) to construct, operate, and maintain the proposed facilities on land they administer and under what terms and conditions, the BLM and USFS must decide whether one or more RMPs and/or LRMPs should be amended to allow for a right-of-way for the proposed transmission line and associated facilities. The BLM and USFS are integrating the land-use planning process for amending agency land-use plans as described in 43 CFR 1610 and 36 CFR 219.10, respectively, with NEPA compliance for the proposed rights-of-way (BLM) or special-use authorization (USFS) for the Project on BLM- and USFS-administered land.

Applicant's Proposal

The Applicant proposes to construct, operate, and maintain a 500-kilovolt (kV), overhead, single-circuit, alternating-current, transmission line beginning near Medicine Bow, Carbon County, Wyoming, at the Aeolus Substation, planned as part of the Applicant's Gateway West Transmission Project, and would extend south and west to the Clover Substation (constructed as part of the Applicant's Gateway Central transmission projects) near Mona, Juab County, Utah, an approximate distance of between 400 and 540 miles, depending on the route selected. The Project includes two series compensation stations at points between the Aeolus and Clover substations to improve transport capacity and efficiency of the transmission line. Equipment to accommodate the 500kV transmission line would be installed at the Aeolus and Clover substations. The Project is designed to provide up to 1,500 megawatts (MW) of capacity [3] to meet current and forecasted [4] needs of the Applicant's customers, as identified in the Applicant's 2013 Integrated Resource Plan (IRP).

Also, equipment is being installed at the Clover Substation to transform (step down) the power from 500kV to 345kV to interconnect the Project with the Applicant's 345kV system. Additionally, two

[3]Capacity refers to the amount of power a transmission line can deliver reliably. The maximum hourly flow that could be scheduled on the proposed transmission line would be 1,500 MW.

[4]Electric load and demand forecasting involves the projection of demand levels and overall energy consumption patterns to support an electric utility's future system and business operations. Forecasts referred to here are based on the Applicant's IRP (PacifiCorp 2013b), required to fulfill regulatory requirements and guidelines established by the public utility commissions of the states served by the Applicant. The IRP addresses the obligations of the Applicant pursuant to its Open Access Transmission Tariff (OATT) to plan for and expand its transmission system in a nondiscriminatory manner based on the needs of its native load and network customers.

existing 345kV transmission lines (Segments 4a and 4b) between the Clover and Mona substations, which are approximately 3 miles apart, would be rebuilt in the existing right-of-way to increase capacity as part of the Project. As part of the Project, the existing Mona to Huntington 345kV transmission line (Segment 4c), which passes in a north-south direction to the east of the Clover Substation, would be rerouted through the Clover Substation. The three 345kV transmission line segments would total 6.6 miles of constructed transmission line. Finally, depending on the route selected, the Project may include relocating an approximate 2-mile section of an existing transmission line (the Bears Ears to Bonanza 345kV transmission line) to eliminate multiple line crossings in a short distance.

Applicant's Interest and Objectives

The Applicant's interests in and objectives for the Project are tied to PacifiCorp's obligations as a regulated utility to provide increased capacity (as required to serve growing loads); provide safe, reliable electricity to its customers at a reasonable cost; address constraints in PacifiCorp's existing transmission system; and provide electricity to the wholesale market when excess electricity exists or when required for other system-balancing alternatives. Through planning studies and analysis, the Applicant determined its existing system, last upgraded more than 25 years ago, is fully used and needs to be upgraded. In 2007, Rocky Mountain Power committed to expanding its transmission network to ensure sufficient capacity would be available to meet the needs of its existing and new customers. The Project is planned to provide additional power transmission to meet forecasted customer load and growth.

The 2011 IRP indicated that while economic conditions have slowed, the Applicant's overall service territory has continued to grow in all segments and forecasted an increase in energy usage across its system at an average of 2.3 percent per year over the next five years and by 2 percent each year over the next 10 years. In the Applicant's 2013 IRP update (PacifiCorp 2013b; published in March 2014), the Applicant forecasts an increase in overall energy usage across its system at an average of 1.37 percent average annual growth over the next 10 years. Currently, the Applicant has approximately 10,085 MW of existing resources, and the 10-year plan forecast a need of approximately 12,110 MW by the year 2023.

The Applicant needs to make improvements to its bulk transmission network to reliably transport electricity from generation resources (owned generation and market purchases) to various load centers. Additional transmission infrastructure is needed to:

- Maintain compliance with mandated national reliability standards that require the Applicant to have a plan to "operate to supply projected customer demands and projected Firm Transmission Services, at all demand levels over the range of forecast system demands…"[5]
- Meet obligations and requirements specifically required under the Applicant's Federal Energy Regulatory Commission approved Open Access Transmission Tariff
- Ensure customers have an adequate supply of reliable and low-cost energy
- Reliably deliver power to continuously changing customer energy-supply demands under a wide variety of system operating conditions
- Supply all electrical demand and energy requirements of customers, taking into account planned and unplanned system outages
- Allow the Applicant to access energy available from existing markets and to sell excess generation to those existing markets when it is cost-effective for customers
- Support options for generation resource development, including economically feasible renewable generation as specified in the Applicant's current and future IRPs

[5]North American Electric Reliability Council Transmission Planning Standard TPL-002-1

- Meet the current and reasonably anticipated 20-year energy-supply requirements, policies, rules, and laws at the federal level and in the states the Applicant serves

In particular, the Project is needed to fulfill the following key responsibilities of the Applicant:

- **Serve Native Load.** The Applicant is responsible for providing electric service to 1.8 million retail customers in the states of California, Idaho, Oregon, Utah, Washington, and Wyoming. The Applicant has a legal obligation to ensure sufficient firm point-to-point and network transmission capacity is available to meet the electric demands of all its customers now and into the future.
- **Serve Third-party Network Customers.** In addition to providing service to its native-load customers, the Applicant also is required to provide transmission service to its third-party network customers, which in turn directly serve customers in these same states. The Applicant has a legal responsibility to provide reliable transmission service to third parties if transmission capacity is available.
- **Ensure Reliability.** The Project is needed to improve the Applicant's ability to provide reliable electrical service to all its customers in a nondiscriminatory manner. The Project also is needed to provide redundancy during transmission and generation contingencies for other planned and existing transmission segments (Gateway West and Gateway Central, respectively), thereby providing operational flexibility for the bulk electric system, ensuring reliability, and supporting capacity ratings for each segment.
- **Access to Energy Resources.** The Applicant has a legal obligation to transport identified third-party network generation to serve network loads. The Project is needed to provide the Applicant with access to rich and diverse generation resources throughout its service territory needed to meet the growing electrical demands of its customers. In general, expansion of the transmission system is needed to accommodate a variety of future resource scenarios and plans.
- **Maximize Infrastructure Benefits.** When interconnected to the wider electric system in the west, including the components of the Energy Gateway program, the Project would function as a fully-interconnected electric system element in the west-wide electric grid and would be expected to carry its fully-rated capacity (1,500 MW of electrical power flow) across the system.

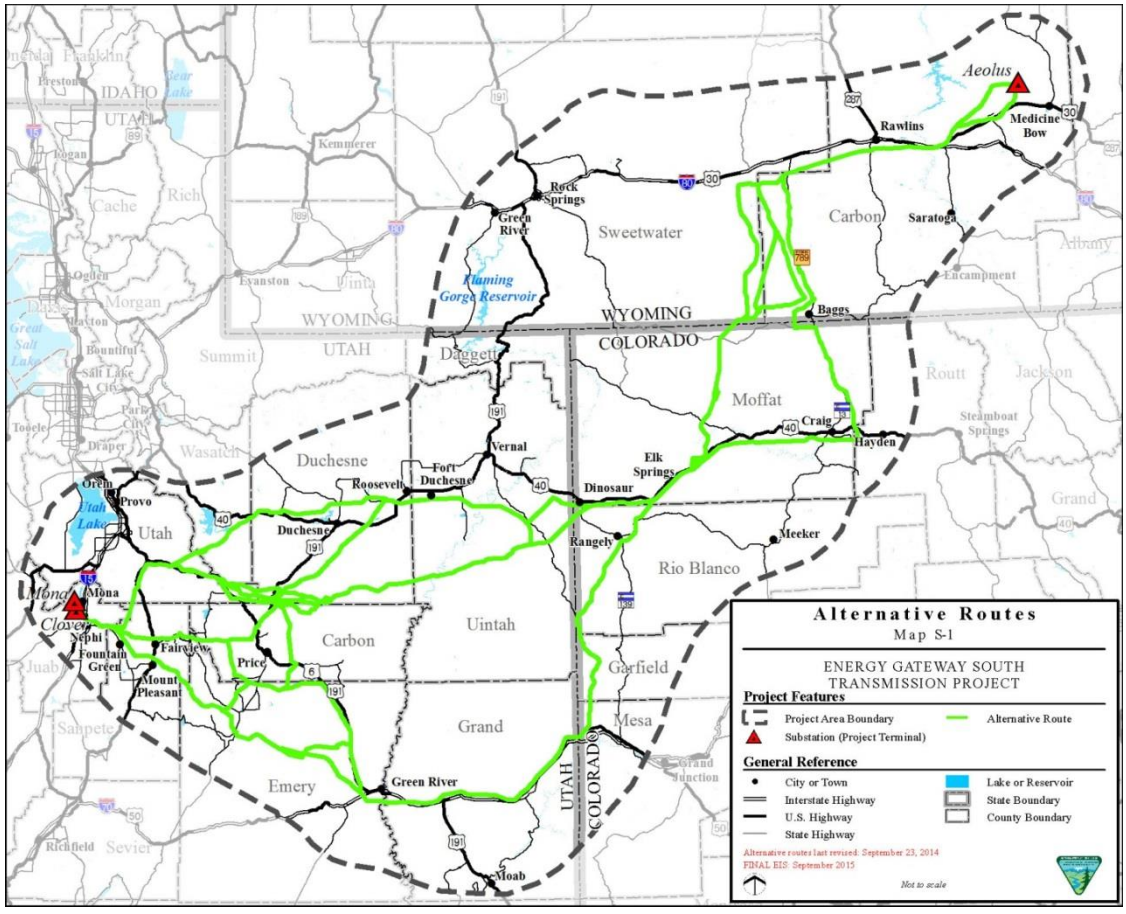
Transmission Line Alternative Routes

Included with PacifiCorp's application to cross federal land was a map depicting a network of potential transmission line routes between the Aeolus and Clover substations to serve as preliminary alternative routes to study and evaluate for the EIS. These initial routes were identified by the Applicant through a series of environmental feasibility studies beginning in 2006 that analyzed opportunities for and constraints to siting extra-high-voltage transmission lines in southern Wyoming, western Colorado, and northern Utah. Since the application was submitted in 2008, the alternative routes have been adjusted based on comments from agencies and the public and the results of the environmental analyses for the EIS. The chronological development of the network of reasonable and feasible alternative routes for the Project, beginning in 2006 and continuing through agency and public scoping (2011) and into initial environmental analysis (2012) phases of the NEPA process is documented in the *Energy Gateway South Transmission Project Siting Study Report* (Environmental Planning Group 2012), which is available for review on the BLM Project website (http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html). The alternative routes studied and evaluated in this EIS are shown in Map S-1.

The 500kV transmission line alternative routes are organized in three primary groupings, one grouping in the northern portion of the Project area and two in the southern portion of the Project area. Each of the

groupings has multiple alternative routes. Some of the alternative routes have route variations (refer to Appendix F). An entire route from Aeolus to Clover would be one alternative route in the north and one alternative route in the south. Table S-1 is a list of the groupings, the alternative routes in each grouping. The Agency Preferred Alternative and Applicant Preferred Alternative are indicated.

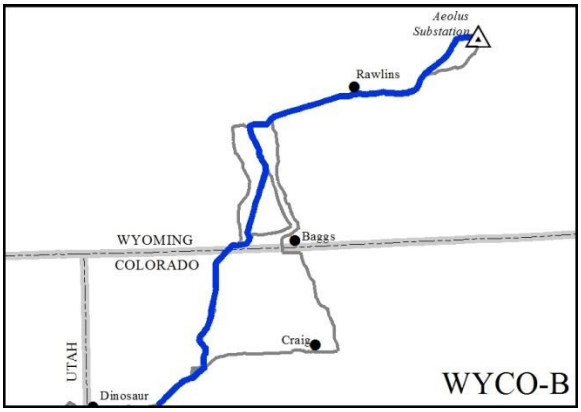
TABLE S-1 500-KILOVOLT TRANSMISSION LINE ALTERNATIVE ROUTES
Northern
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)
WYCO-B (Agency and Applicant Preferred Alternative)
WYCO-C
WYCO-D
WYCO-F
Southern
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)
COUT BAX-B
COUT BAX-C
COUT BAX-E
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)
COUT-A
COUT-B
COUT-C (Agency and Applicant Preferred Alternative)
COUT-H
COUT-I



A description of each alternative route follows. Each description is accompanied by a schematic drawing; the solid colored line is the alternative route and the dashed black line is a route variation.

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

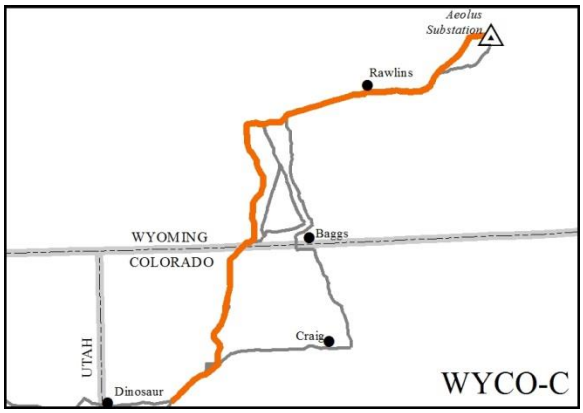
Alternative WYCO-B (Agency and Applicant Preferred Alternative)



Alternative WYCO-B exits the planned Aeolus Substation in the utility corridor designated by Wyoming Executive Order 2011-5 for the protection of sage-grouse, continuing to the southwest where it crosses Interstate 80 (I-80) approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 57 miles at which point it parallels Wamsutter Road (on the east side of the road) south for approximately 15 miles. At that point, the alternative route continues southwest crossing Flat Top Mountain, continuing toward the Wyoming and Colorado border, approximately 22 miles west of Baggs, Wyoming.

The alternative route continues south/southwest into Colorado through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge, and then U.S. Highway 40 at a point approximately 12 miles southwest of Maybell. The alternative route continues southwest for approximately 22 miles paralleling the existing Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines to a point south of U.S. Highway 40, approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.



Additional local route variations along the route of Alternative WYCO-B are presented in Appendix F.

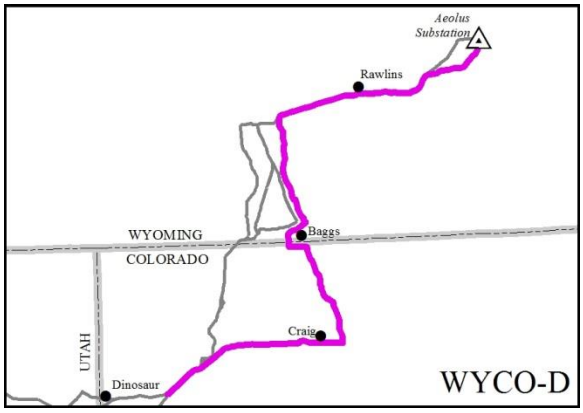
Alternative WYCO-C

Alternative WYCO-C exits the planned Aeolus Substation to the southwest and crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 63 miles before veering to the south to parallel an underground pipeline corridor south for approximately 46 miles toward the Wyoming and Colorado border. The underground pipeline corridor that this alternative route parallels is approximately 10 miles east of the Adobe Town Wilderness Study Area (WSA).

The alternative route continues south/southwest through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge, and then U.S. Highway 40 at a point approximately 12 miles southwest of Maybell. The alternative route continues southwest paralleling the Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines for approximately 22 miles south of U.S. Highway 40 to approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

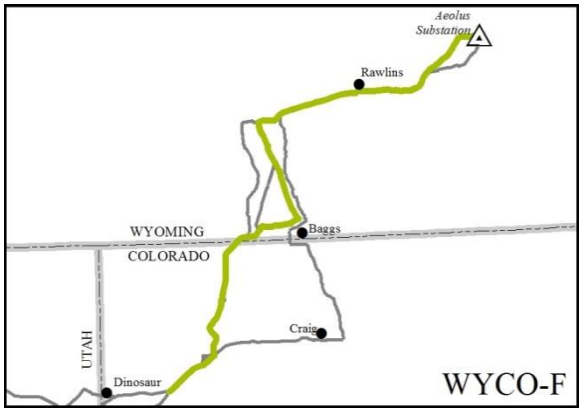
Alternative WYCO-D



Alternative WYCO-D exits the planned Aeolus Substation to the south/southwest paralleling the Difficulty to Miners 230kV transmission line, crossing U.S. Highway 30 twice near Hanna, Wyoming, continuing toward I-80. It crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route then continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 48 miles, at which point it parallels Wyoming Highway 789 (on the east side of the highway) south toward Baggs, Wyoming, for approximately 40 miles. It crosses the Wyoming and Colorado border approximately 7 miles southwest of Baggs.

The alternative route turns east toward Colorado State Highway 13 where it continues south toward Craig, Colorado, paralleling the east side of the highway for approximately 27 miles. The alternative route turns west where it parallels the Hayden to Artesia 138kV transmission line toward the Craig Power Plant. From the plant, it continues west paralleling the Hayden to Artesia 138kV and the Bears Ears to Bonanza 345kV transmission lines along U.S. Highway 40 for approximately 60 miles to a point approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

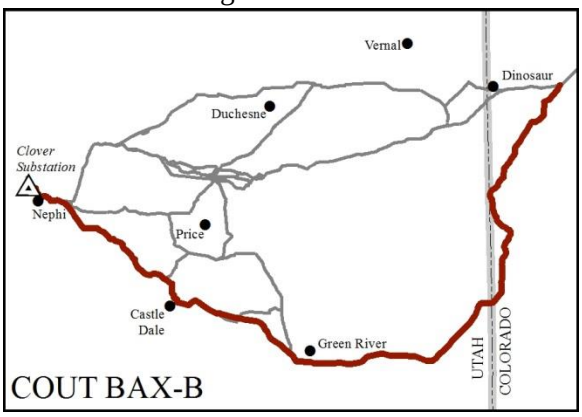


Alternative WYCO-F

Alternative WYCO-F exits the planned Aeolus Substation to the southwest and crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 57 miles. The alternative route then parallels Wamsutter Road (on the east side of the road) south for approximately 20 miles. The alternative route continues south, approximately 3 miles to the

west of Wyoming Highway 789. North of Baggs, Wyoming, the alternative route turns west (south of Flat Top Mountain) for approximately 15 miles, then southwest to cross the Wyoming -and Colorado border, approximately 20 miles west of Baggs.

The alternative route continues south/southwest through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge, and then U.S. Highway 40 at a point approximately 12 miles southwest of Maybell. The alternative route continues southwest for approximately 22 miles paralleling the existing Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines to a point south of U.S. Highway 40, approximately 20 miles east of Dinosaur, Colorado.



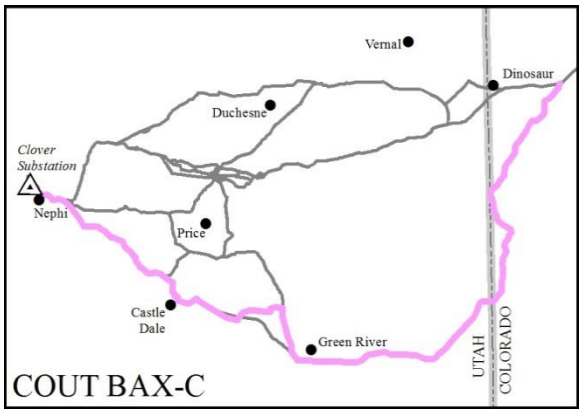
From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

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

Alternative COUT BAX-B

Alternative COUT BAX-B begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route heads southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then parallels the existing transmission line on the east and south as it crosses Colorado State Highway 139. The alternative route continues southwest toward the Colorado/Utah border where it parallels a pipeline corridor for approximately 40 miles through the Baxter Pass area and continues south toward Interstate 70 (I-70). It crosses the Colorado/Utah border approximately 1 mile north of I-70.

The alternative route heads west into Utah paralleling the north side of I-70 toward Green River, Utah, for approximately 60 miles. It then crosses to the south side of I-70 near Green River, Utah, and parallels the Huntington to Pinto 345kV transmission line for approximately 50 miles as it crosses the Green River continuing northwest through the San Rafael Swell area. At that point, the alternative route continues west toward Castle Dale, Utah, where it parallels the Huntington to Emery 345kV and the Spanish Fork to Emery 345kV transmission lines north toward the Huntington Power Plant. It then parallels the Huntington to Mona 345kV transmission line through the Wasatch Plateau northwest toward Mount Pleasant, Utah, continuing toward Fountain Green, Utah where it continues west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

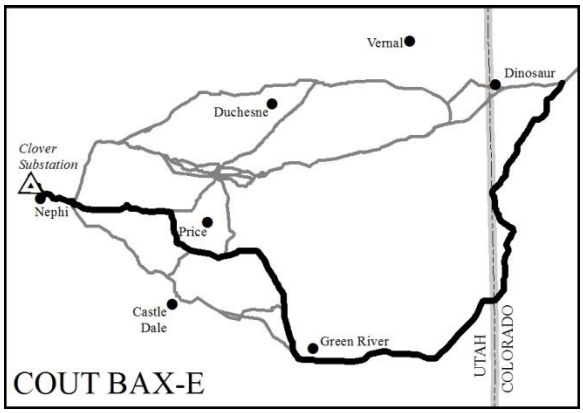


Alternative COUT BAX-C

Alternative COUT BAX-C begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route moves southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then parallels the Rangely to Meeker 138kV transmission line on the east and south as it crosses Colorado State Highway 139. The alternative route continues southwest toward the Colorado and Utah border where it parallels a pipeline corridor for approximately 40 miles through the Baxter Pass area continuing south toward I-70. It crosses the Colorado/Utah border approximately 1 mile north of I-70.

The alternative route heads west into Utah paralleling the north side of I-70 toward Green River, Utah, for approximately 60 miles. It then crosses to the south side of I-70 near Green River, Utah, and parallels the Huntington to Pinto 345kV transmission line as it crosses the Green River and I-70 where it continues north paralleling U.S. Highway 6 and the Mounds Southwest Park to Moab 138kV transmission line for approximately 12 miles. It then continues west through the San Rafael Swell area along the Green River Cuttoff Road (County Road 401), then roughly parallels the Hunter to Pinto 345kV transmission line. It then continues west toward Castle Dale, Utah, where it parallels the Huntington to Emery 345kV and the Spanish Fork to Emery 345kV transmission lines north toward the Huntington Power Plant. It then parallels the Huntington to Mona 345kV transmission line through the Wasatch Plateau northwest toward Mount Pleasant, Utah, continuing toward Fountain Green, Utah, where it continues west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT BAX-E



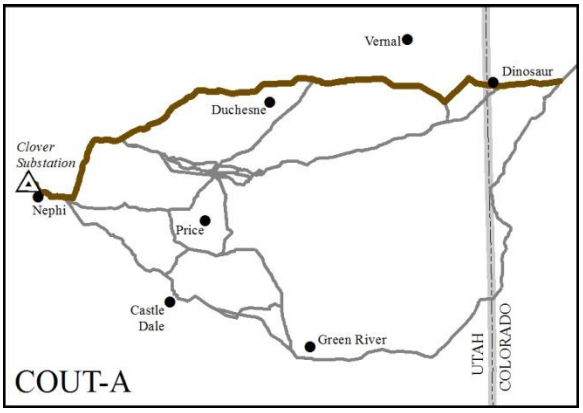
Alternative COUT BAX-E begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this starting point, the alternative route heads southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then parallels the Rangely to Meeker 138kV transmission line on the east and south as it crosses Colorado State Highway 139. The alternative route continues southwest toward the Colorado and Utah border where it parallels a pipeline corridor for approximately 40 miles through the Baxter Pass area, continuing south toward I-70, and crossing the Colorado and Utah border approximately 1 mile north of I-70.

The alternative route heads west into Utah, paralleling the north side of I-70 toward Green River, Utah, for approximately 60 miles. It then crosses to the south side of I-70 near Green River, Utah, and parallels the Huntington to Pinto 345kV transmission line as it crosses the Green River and I-70, where it continues north paralleling the Mounds Southwest Park to Moab 138kV transmission line and on the east side of U.S. Highway 6 for approximately 33 miles to a point approximately 14 miles southeast of Wellington, Utah. The alternative route continues west toward the Spanish Fork to Huntington 345kV and the Spanish Fork to Emery 345kV transmission lines then parallels these two lines north for

approximately 10 miles before continuing west following a pipeline corridor over the Wasatch Plateau where it crosses the Energy Loop Scenic Byway as it continues toward Fairview, Utah, north of Cottonwood Canyon continuing west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah and the Clover Substation.

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

Alternative COUT-A

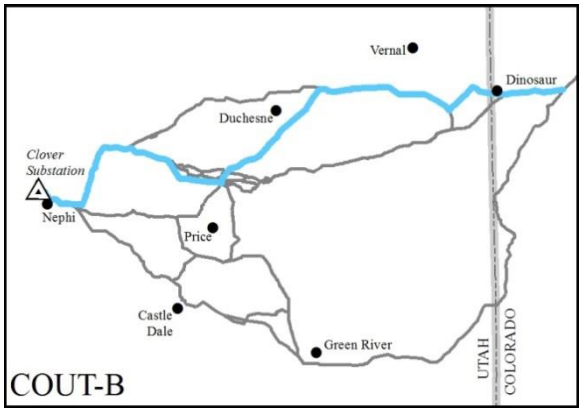


Alternative COUT-A begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels, on the south side, the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

The alternative route parallels the existing Bonanza to Mona 345kV transmission line west in the Uinta Basin, south of Roosevelt, Utah and north of Duchesne, Utah, continuing through the Fruitland, Utah, area. From there it continues southwest through the Uinta National Forest south of Strawberry Reservoir (avoiding the Chipman Creek Inventoried Roadless Area [IRA]) and crosses U.S. Highway 6 near the Sheep Creek Road intersection. Upon crossing U.S. Highway 6, the alternative route continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, where it turns south and crosses U.S. Highway 89 near Birdseye, Utah, then continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative route continues paralleling the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Additional local route variations along the route of Alternative COUT-A are presented in Appendix F.

Alternative COUT-B

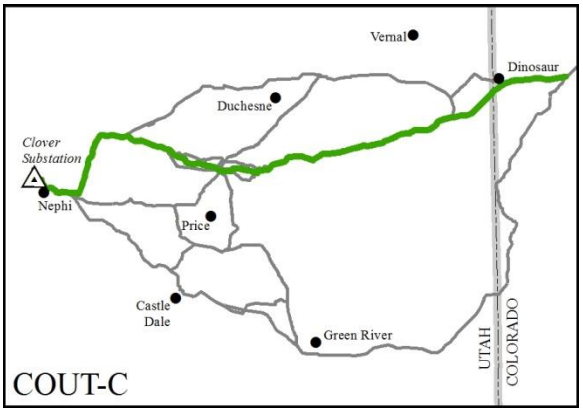


Alternative COUT-B begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

The alternative route parallels the existing Bears Ears to Bonanza 345kV line west for approximately 45 miles to a point near Myton, Utah. It then continues southwest paralleling the Carbon to Ashley 138kV transmission line for approximately 45 miles to a point 10 miles northeast of Helper, Utah. It then continues west through the Emma Park area toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. From there it parallels the Bonanza to Mona 345kV transmission line toward Thistle, Utah, where it turns south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative route

continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

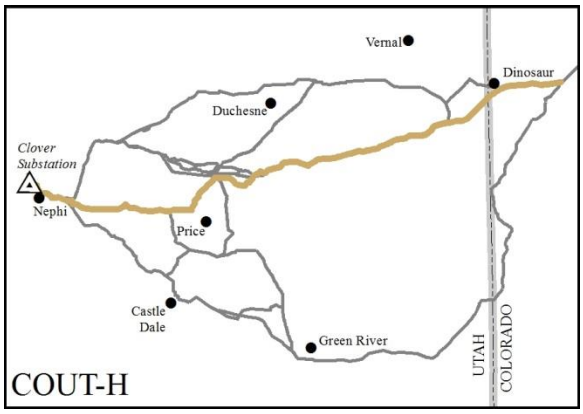


Alternative COUT-C begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado/Utah border.

This alternative route continues to follow the Bears Ears to Bonanza 345kV transmission line southwest toward the Bonanza Power Plant. The alternative route then continues west/southwest roughly following an underground pipeline in an administratively designated utility corridor and crossing the Green River (and a suitable Lower Green River Wild and Scenic River segment and Lower Green River Corridor Area of Critical Environmental Concern) approximately 8 miles north of Sand Wash boat launch, continuing through the Tavaputs Plateau toward the Emma Park area. It continues west toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. It continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, turning south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Additional local route variations along the route of Alternative COUT-C are presented in Appendix F.

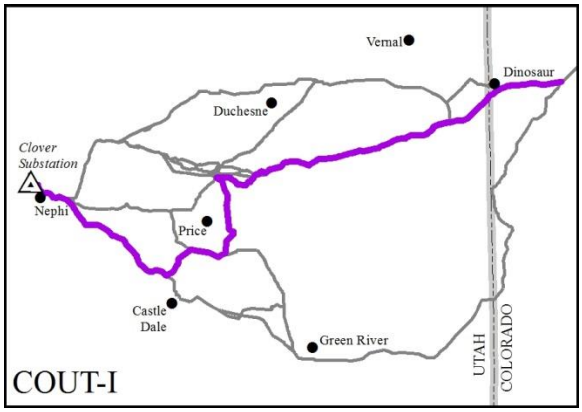
Alternative COUT-H



Alternative COUT-H begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

This alternative route continues following the Bears Ears to Bonanza 345kV transmission line southwest toward the Bonanza Power Plant. The alternative then continues west/southwest following an underground pipeline and crossing the Green River approximately 8 miles north of Sand Wash boat launch, continuing through the Tavaputs Plateau toward the Emma Park area. It continues west following a pipeline corridor over the Wasatch Plateau where it crosses the Energy Loop Scenic Byway as it continues toward Fairview, Utah, north of Cottonwood Canyon continuing west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT-I



Alternative COUT-I begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

The alternative continues following the Bears Ears to Bonanza 354kV transmission line southwest toward the Bonanza Power Plant. The alternative route then continues west/southwest following an underground pipeline and crossing the Green River approximately 8 miles north of Sand Wash boat launch, continuing through the Tavaputs Plateau toward the Emma Park area. It continues south/southwest toward Huntington, Utah, where it parallels the Huntington to Mona 345kV transmission line through the Wasatch Plateau northwest toward Mount Pleasant, Utah, continuing toward Fountain Green, Utah where it continues west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

No Action Alternative

If no action is taken, the BLM right-of-way and USFS special-use authorization for the Project to cross federal lands would not be granted and the transmission line and ancillary facilities would not be constructed.

Affected Resources

Climate and Air Quality

Impact analyses indicate ambient standard exceedances are unlikely due to Project construction (or operation) with the possible exception of the federal and state 1-hour nitrogen dioxide (NO_2) ambient standards. Emissions of nitrogen oxides (NO_x) from construction equipment used to construct the transmission line and series compensation stations may result in short-term, localized NO_2 concentrations above the numerical value of the standard. This would be true for all of the transmission line alternative routes and either series compensation station.

Portions of Alternatives COUT-A, COUT-B, and COUT-C would traverse a particulate matter less than 10 micrometers in diameter (PM_{10}) nonattainment area in Utah County, Utah. While screening level dispersion modeling indicated the ambient standard would most likely not be exceeded due to Project activities, these alternative routes would release a substantial amount of PM_{10} in an area that historically has had issues with standard exceedances. Furthermore, due to emissions well above the general conformity *de minimis* levels, if any of these alternative routes is chosen, a formal conformity determination would be required to show conformity with the State Implementation Plan.

Earth Resources

Geologic Hazards

The potential for geologic hazards, including Quaternary faults, mine subsidence, flooding, and landslides, to affect the Project was assessed along all alternative routes. The results of the effects analysis

indicate similar impacts on the Project from geologic hazards with differences in potential impact being correlated to the length of the individual alternative routes. Overall, anticipated impacts on the Project from geologic hazards would be low. Moderate impacts would occur in localized areas where the Project crosses Quaternary faults and areas highly susceptible to landslides.

Soil Resources

The potential for the Project to affect sensitive soil resources— including, soils moderately or highly susceptible to water erosion, soils moderately or highly susceptible to wind erosion, and designated Prime or Unique Farmland soils—was assessed along all alternative routes. The results of the effects analysis indicate similar impacts on soil resources with differences in potential impacts among alternative routes being correlated to length of the individual alternative routes and steepness of slopes crossed by the individual alternative routes. Overall, most anticipated impacts on soil resources would be low. Moderate impacts would occur in localized areas where soils on steep slopes are highly susceptible to water or wind erosion crossed by new or improved access roads. Cumulative effects on soil resources generally would be similar between the varying alternative routes.

Mineral Resources

The potential for the Project to affect, by restriction of exploration or development, mineral resources—active mines, producing oil and gas wells, permitted mines, coal leases, oil and gas leases, geothermal leases, and mineral potential areas—was assessed along all alternative routes. The results of the impact analysis indicate similar impacts on mineral resources with differences in potential impacts among alternative routes being correlated to the length of the individual alternative routes. Overall, anticipated impacts on mineral resources would be low or not identifiable. Low impacts would occur in localized areas where active mines or producing oil or gas wells are present. Cumulative effects on mineral resources generally would be similar between the varying alternative routes.

Paleontological Resources

The potential for the Project to affect paleontological resources varies by area, ranging from low to very high, based on the sensitivity of the geological formations crossed by the alternative routes. The sensitivity of the geological formations is similar in each group with variances in mileage of impacts proportionately related to the lengths of the alternative routes. Each route grouping has a considerable amount of moderate to high sensitivity for paleontological resources because of the large number of geological formations in the Project area known to produce fossils. The number of fossil localities previously discovered in the Project area is similar in each route grouping.

Water Resources

Water resources vary greatly in the Project area relative to the diversity of the landscape. Issues surrounding the Project and potential effects from construction, operation, and maintenance are based on the potential effects of those activities on water quantity and quality. In the Project description, the Applicant has committed to use water from previously allocated sources such as treated municipal sources or existing water rights; thus, the quantity of water used by the Project would not be any greater than what is currently being used or otherwise allocated. Water quality, however, is a focused issue in this document. The effects of increased sedimentation being transferred and discharged into water resources from ground-disturbing activities, removal of soil-stabilizing vegetation, and modification of natural systems that filter and purify water such as wetlands and riparian areas, are of public and environmental concern.

Quantitative analysis indicates that the alternative routes in Utah would affect the most water resources, followed by routes in Colorado and then Wyoming. Following implementation of design features of the Proposed Action and selective mitigation measures, impacts on water resources would be largely avoided or mitigated. Very few moderate residual impacts are expected and mostly low and no identifiable residual impacts could result from development of the Project. In general, the COUT alternative routes would have the greatest number of residual impacts on water resources, followed by the COUT BAX alternative routes, and then the WYCO alternative routes . Based on results of the impact analysis in addition to the cumulative effects analysis, residual impacts from the Project and other past and present actions and reasonably foreseeable future actions (RFFAs) indicate that individual alternative routes do not vary greatly in their potential to affect water resources. Based on these results, route selection is not expected to result in substantial differences in the amount, type, or intensity of impacts on water resources.

Route variations would have similar impacts on water resources as corresponding alternative routes, with the exception of the variation in the Spanish Fork Canyon/U.S. Highway 6 area. Alternative COUT-C Variation 1 would make two crossings of the Soldier Creek, which is a main tributary of the Spanish Fork River. Therefore, Alternative COUT-C (specifically Variation 1), led to more localized incremental impacts on water resources than Alternative COUT-C.

Vegetation

Differences in impacts on vegetation communities among alternative routes in a route grouping are often marginal and generally due to variation in lengths of alternative routes. Additionally, the results of the effects analysis on the potential for spread of noxious weeds and invasive plant species due to Project construction indicate similar impacts among the alternative routes considered in each route grouping. Impacts on riparian and wetland vegetation, which was identified as an issue during public scoping, would be similar among the alternative routes in each route grouping. Among the WYCO alternative routes, the results of the effects analysis on riparian and wetland vegetation indicate similar impacts with Alternative WYCO-B affecting a slightly lesser extent of wetland vegetation than other alternative routes. Among the COUT BAX alternative routes, the results of the effects analysis on riparian and wetland vegetation indicate similar impacts. Among the COUT alternative routes, Alternatives COUT-A and COUT-B would affect greater extents of riparian and wetland vegetation than Alternatives COUT-C, COUT-H, and COUT-I.

Overall, impacts in each route grouping are primarily low to moderate with big sagebrush and smaller areas of shrub/shrub steppe and pinyon-juniper vegetation communities being the primary types crossed by all alternative routes. Moderate impacts would occur where alternative routes cross water, alpine, aspen, barren/sparsely vegetated, big sagebrush, grassland, montane forest, and mountain shrub vegetation communities. Moderate to high impacts would occur where alternative routes cross riparian vegetation. All alternative routes would contribute to the incremental loss of vegetation communities in the cumulative impact analysis area (CIAA) due to past, present, and reasonably foreseeable future projects. Impacts due to Project activities would only contribute marginally to overall cumulative impacts on vegetation communities in the CIAA. Route variations would have similar impacts on vegetation communities as corresponding alternative routes.

Special Status Plants

Impacts on federally listed plants and their habitats were identified as a key issue during scoping. All WYCO alternative routes would cross potential Ute ladies'-tresses habitat. Alternative WYCO-D would cross the most potential habitat for Ute ladies'-tresses compared to other alternative routes considered. The COUT BAX alternative routes would affect a similar extent of habitat for Cisco milkvetch and Ute

ladies'-tresses. Alternative COUT BAX-C also would affect habitat for San Rafael cactus. Habitat for federally listed plants would be affected by the COUT alternative routes. Alternative COUT-A would affect potential habitat for Barneby ridge-cress, clay phacelia and Ute ladies'-tresses. Alternative COUT-B would affect potential habitat for clay phacelia, Graham's beardtongue, White River beardtongue, and Ute ladies'-tresses. Alternative COUT-C would affect potential habitat for clay phacelia, clay reed-mustard, Graham's beardtongue, White River beardtongue, Uinta Basin hookless cactus, and Ute ladies'-tresses, as well as Level 1 and Level 2 *Sclerocactus* core habitat. Alternatives COUT-H and COUT-I would affect potential habitat for clay reed-mustard, Graham's beardtongue, White River beardtongue, Uinta Basin hookless cactus, Level 1 and Level 2 *Sclerocactus* core habitat, and Ute ladies'-tresses.

All alternative routes cross at least some potential habitat for federally listed plant species and could contribute cumulatively to the modification or loss of these habitats due to past and present actions and RFFAs. For most of the plant species analyzed, the Project would have only a minor contribution to the cumulative effects of past and present actions and RFFAs on these habitats and the majority of the habitats would remain unaffected by development actions. Alternatives COUT-C, COUT-H, and COUT-I would cross Level 1 and Level 2 *Sclerocactus* core areas, which have been affected previously by oil and gas development. The U.S. Fish and Wildlife Service (FWS) currently recommends no new surface disturbance be authorized in the Level 1 core areas. Alternatives COUT-C, COUT-H, and COUT-I could not be implemented without surface-disturbing activities occurring in Level 1 and Level 2 *Sclerocactus* core areas. The BLM is working with the FWS to develop *Sclerocactus* conservation measures that would apply to these alternative routes.

All alternative routes also may cross habitats for BLM and USFS sensitive plant species, though there are not substantial differences in the amount of occupied habitat or known populations crossed by each alternative route. Sensitive plant surveys would be conducted prior to construction, and mitigation measures would be implemented to avoid and minimize the effects on these resources.

Route variations would have similar impacts on special status plants as corresponding alternative routes in the Little Snake, Deerlodge Road, Argyle Ridge, Camp Timberlane/Argyle Canyon, and Chipman Creek areas (refer to Appendix F). Impacts associated with the other route variations are as follows:

- Colorado-Utah Border: Variation 1 would cross potential Uinta Basin hookless cactus habitat as well as Uinta Basin hookless cactus Level 1 and Level 2 core areas. The Project may not be able to avoid all Uinta Basin hookless cactus locations in core areas and compensatory mitigation and transplantation of Uinta Basin hookless cactus may be required. Alternative COUT-C would cross near known locations and potential habitat for BLM-sensitive and conservation agreement sensitive species near the Raven Ridge Area of Critical Environmental Concern. The route would also cross potential habitat for Uinta Basin hookless cactus.
- Spanish Fork Canyon/U.S. Highway 6: Alternative COUT-C and Variation 1 would cross clay phacelia potential habitat. Alternative COUT-C would be colocated with existing transmission lines through potential clay phacelia habitat while Variation 1 would be only partially colocated with existing transmission lines through potential clay phacelia habitat.

Wildlife

All alternative routes would cross similar wildlife habitats and have similar types and extents of past and present actions and RFFAs in the CIAA. The Project, in addition to past and present actions and RFFAs, would contribute to the incremental loss, fragmentation, and modification of habitats used by wildlife in the CIAA, and could result in synergistic, additive effects on wildlife behavior and patterns of habitat use. Overall, the nature and magnitude of cumulative effects on wildlife are anticipated to be similar among all alternative routes, and the majority of important wildlife habitats would not be affected by the Project or

other past and present actions and RFFAs. Potential effects on migratory birds and big game species were identified as key issues for wildlife resources during scoping.

Migratory Birds

Habitats that support migratory bird species, including many identified as priority species for conservation actions, are present along all alternative routes. The Project would contribute to the loss, fragmentation, and modification of migratory bird habitats; could increase mortality risk of migratory birds; and could result in local changes in migratory bird behavior, population densities, and species diversity. These local changes could contribute to ongoing declining regional population trends in some resident, short-distance migratory species, and Neotropical migratory species. Mortality risk is likely to be highest for species known to be susceptible to collision with transmission lines, such as waterfowl, raptors, shorebirds, and wading birds. While each alternative route crosses areas identified as a relatively high risk for collision, Alternative WYCO-D follows an alignment that crosses more high-risk areas than other alternatives within the WYCO route group. Habitat loss is likely to affect sensitive species in proportion to the area of ground disturbance or vegetation management, which is approximately proportional to the length of each alternative route. In general, alternatives in the COUT-BAX route group are longer and cross more areas identified as important for bird conservation as alternatives in the COUT route group; however, alternatives in the COUT route group cross more areas of high collision risk such as wetlands, agriculture, and rivers. Route selection and implementation of design features and mitigation measures would help avoid or minimize the effects of increased collision risk and habitat loss. On a larger scale, range-wide populations and distribution of migratory birds are known to be affected by some past and present actions and RFFAs in the CIAA, and the Project would contribute incrementally to those effects. Route variations would have similar impacts on migratory birds as corresponding alternative routes.

Big Game

The proportion of elk, mule deer, pronghorn, moose, and Rocky Mountain bighorn sheep crucial/critical/severe habitats cumulatively affected by each alternative route or route variation and other past and present actions, and RFFAs would be similar compared to the total available habitat in the CIAA for each alternative route or route variation. The cumulative disturbance from all actions considered could limit the availability of big game crucial/severe habitat in the CIAA and add to carrying capacity pressure of affected big game populations. The effects of the Project would be anticipated to be minor compared to the magnitude of effects from other actions.

All WYCO alternative routes would affect two of the largest and economically important elk herds in the United States. Cumulative impacts on elk crucial/severe winter range and migration corridors would be greater under Alternative WYCO-D than under any other WYCO alternative routes. In addition to past and present actions and RFFAs, all COUT BAX alternative routes would affect the Book Cliffs mule deer herd in Colorado, which has been in steady decline since 1990 as a result of increasing energy development and habitat alteration. All COUT alternative routes would affect the Wasatch Mountains elk and mule deer herds. The Wasatch Mountains elk population currently exceeds management objectives, but mule deer populations are below management population targets.

Combined residual impacts on elk, mule deer, pronghorn, and moose after selective mitigation measures have been applied during the periods big game use specific seasonal habitat would include loss of forage, potential increase in weeds, and an increase in human presence and activity. With mitigation, disturbance to migration corridors would not be anticipated to create a physical barrier to big game movement and would occur outside sensitive periods. Similarly, loss or disturbance of crucial, critical, or severe wildlife

habitats would occur outside of sensitive periods. Overall, the majority of available big game crucial/critical/severe habitat would remain undisturbed by the Project and other actions in the CIAA.

Route variations would have similar impacts on wildlife resources as corresponding alternative routes, with the exception of Alternative WYCO-B and variations in the Deerlodge Road area. Alternative WYCO-B would impact important big game habitats recognized by Colorado Parks and Wildlife (CPW) on the Tuttle Ranch Conservation Easement. Variations 1 and 2 would avoid important big game habitats recognized by CPW on the Tuttle Ranch Conservation Easement but would still impact big game habitats.

Special Status Wildlife

Similar types of impacts on special status wildlife resources associated with the construction, operation, and maintenance of the Project would be anticipated for all alternative routes and route variations. Differences in impacts anticipated among individual alternative routes are driven by the presence and quantity of special status wildlife resources along specific alternative routes and the degree to which anticipated impacts can be mitigated or avoided in Project design. Potential effects on southwestern willow flycatcher, yellow-billed cuckoo, Mexican spotted owl, mountain plover, black-footed ferret, pygmy rabbit, white-tailed prairie dog, and greater sage-grouse were identified as key issues during scoping.

Southwestern Willow Flycatcher Potential Habitat

None of the WYCO or COUT alternative routes would affect southwestern willow flycatcher potential habitat. In Utah, all COUT BAX alternative routes could affect southwestern willow flycatcher potential habitat. There would not be substantial differences in the amount of southwestern willow flycatcher potential habitat crossed by the COUT BAX alternative routes. Route variations would have similar impacts on southwestern willow flycatcher potential habitat as corresponding alternative routes.

Yellow-billed Cuckoo Potential Habitat

All COUT and COUT BAX alternative routes for the Project cross yellow-billed cuckoo potential habitat. The COUT alternative routes cross yellow-billed cuckoo potential habitat only in Utah, while the COUT-BAX alternative routes cross yellow-billed cuckoo potential habitat in both Colorado and Utah. Alterative COUT BAX-B crosses less yellow-billed cuckoo potential habitat than the other COUT BAX alternative routes. Alternatives COUT-A and COUT-B cross more yellow-billed cuckoo potential habitat than the other COUT alternative routes in Utah. Alternatives COUT-A and COUT-B also cross yellow-billed cuckoo proposed critical habitat along the Green River and Lake Fork River. Alternative WYCO-D in Colorado is the only WYCO alternative route that crosses yellow-billed cuckoo potential habitat. Alternative WYCO-D in Colorado also crosses yellow-billed cuckoo proposed critical habitat along the Yampa River. Route variations would have similar impacts on yellow-billed cuckoo potential habitat as corresponding alternative routes.

Mexican Spotted Owl Potential Habitat

Alternative WYCO-D is the only WYCO alternative route that would cross Mexican spotted owl potential habitat. The habitats crossed are not known to currently support the species. All COUT BAX alternative routes would cross the same Mexican spotted owl potential habitat in Colorado. In Utah, Alternative Route COUT BAX-C would cross the most Mexican spotted owl potential habitat and more potential habitats of higher value for the species compared to the other COUT BAX alternative routes. Alternatives COUT-B, COUT-C, COUT-H, and COUT-I all cross Mexican spotted owl potential habitat in the Argyle Canyon area. BLM conducts periodic Mexican spotted owl surveys in these habitats and no owls have been detected. Alternative COUT-A does not cross Mexican spotted owl potential habitat. Route

variations would have similar impacts on Mexican spotted owl potential habitat as corresponding alternative routes.

Mountain Plover Potential Habitat

All alternative routes considered for the Project would cross mountain plover potential habitat. Of the WYCO alternatives, Alternative WYCO-C would affect the most potential habitat for this species compared to the other WYCO alternative routes. All COUT BAX alternative routes would affect similar amounts of mountain plover potential habitat. The COUT BAX alternative routes would affect less mountain plover potential habitat than the COUT alternative routes because the COUT BAX alternative routes are primarily located outside the known range of the species. Among the COUT alternative routes, Alternatives COUT-C, COUT-H, and COUT-I would affect more mountain plover potential habitat compared to other COUT alternative routes. Route variations would have similar impacts on mountain plover potential habitat as corresponding alternative routes.

Black-footed Ferret Management Areas

All alternative routes considered for the Project would cross black-footed ferret management areas. In Wyoming, all of the WYCO alternative routes would affect similar amounts of the Shirley Basin black-footed ferret management area. In Colorado, all of the WYCO, COUT BAX, and COUT alternative routes would affect similar amounts of the Wolf Creek black-footed ferret management area. In Utah, Alternatives COUT-C, COUT-H, and COUT-I would affect the Coyote Basin black-footed ferret management area and Alternatives COUT-A, and COUT-B would affect the Snake John Reef black-footed ferret management area. Alternatives COUT-C, COUT-H, and COUT-I would be located adjacent to an existing 345kV steel-lattice transmission line in the management area but would be located in the black-footed ferret management area for a longer distance than Alternatives COUT-A and COUT-B and route variations. Route variations would have similar impacts on black-footed ferret management areas as corresponding alternative routes.

Pygmy Rabbit Potential Habitat

All WYCO alternative routes would cross pygmy rabbit potential habitat in Wyoming and Colorado. In Wyoming, Alternatives WYCO-B and WYCO-C would affect less pygmy rabbit potential habitat compared to Alternatives WYCO-D and WYCO-F. In Colorado, Alternatives WYCO-B, WYCO-C, and WYCO-F would affect similar amounts of pygmy rabbit potential habitat. Alternative WYCO-D would affect the least amount of pygmy rabbit potential habitat of the WYCO alternatives in Colorado. None of the COUT BAX or COUT alternative routes would cross pygmy rabbit potential habitat. Route variations would have similar impacts on pygmy rabbit potential habitat as corresponding alternative routes.

White-tailed Prairie Dog Potential Colonies

All WYCO alternative routes would cross similar amounts of white-tailed prairie dog potential colonies in Wyoming and Colorado. All COUT BAX alternative routes cross similar amounts of white-tailed prairie dog potential colonies in Colorado, while Alternative COUT BAX-E would cross the least amount of white-tailed prairie dog potential colonies in Utah. All COUT alternative routes would cross white-tailed prairie dog potential colonies in Colorado and Utah. Alternatives COUT-A, COUT-C, and COUT-H would cross less white-tailed prairie dog potential colonies than Alternatives COUT-B and COUT-I.

Route variations would have similar impacts on white-tailed prairie dog potential colonies as corresponding alternative routes, with the exception of the variations in the Deerlodge Road area. In the Deerlodge Road area, Alternative WYCO-B would impact white-tailed prairie dog colonies that are a potential preferred location by CPW for the future release of black-footed ferrets on the Tuttle Ranch

Conservation Easement property. Variations 1 and 2 would avoid white-tailed prairie dog habitats recognized by CPW on the Tuttle Ranch Conservation Easement and white-tailed prairie dog potential colonies.

Greater Sage-grouse

Sage-grouse habitat is widespread in the Project area and all alternative routes would cross sage-grouse habitat. As described in Appendix K, Section K.3.1, the BLM and the Applicant collaborated to develop strategies to avoid, minimize, and compensate for the potential effects of the Project pursuant to the applicable plans and policies. These strategies include removal of alternative routes from consideration that would have the greatest effects on sage-grouse and modification of alternative routes carried forward to reduce impacts on sage-grouse. After application of design features of the Proposed Action and selective mitigation measures to reduce the effects of the Project on sage-grouse and sage-grouse habitats, impacts on sage-grouse are still anticipated to occur. The BLM would require compensatory mitigation that conforms with BLM standards for the Project's impacts on sage-grouse for any action alternative analyzed in the EIS. The Applicant is preparing a voluntary sage-grouse conservation and mitigation plan, including a Habitat Equivalency Analysis (HEA), which would outline actions that would be taken to offset unavoidable effects on sage-grouse.

The Project, if approved, must conform to applicable BLM RMPs and USFS LRMPs. While the proposed greater sage-grouse BLM RMP and USFS LRMP amendments will not apply to portions of the Project that are in Wyoming or Colorado and in areas of Utah that are colocated with the proposed TransWest Express Transmission Line Project, the BLM has analyzed a similar suite of mitigation measures for the greater sage-grouse and its habitat in this EIS and will consider the implementation of those mitigation measures in its ROD for this Project, with a goal of achieving a net conservation benefit for the greater sage-grouse and its habitat.

In Wyoming, all of the WYCO alternative routes would cross the Hanna and Greater South Pass sage-grouse core areas designated in Wyoming Executive Order 2011-5. All alternative routes would be in compliance with Wyoming Executive Order 2011-5. Alternative WYCO-D is the only alternative route that would cross the core areas outside of transmission line corridors designated in the Executive Order. In Wyoming, Alternatives WYCO-D and WYCO-F and route variations would cross sage-grouse habitats within 4 miles of leks attended by more sage-grouse compared to Alternatives WYCO-B and WYCO-C and route variations. All of the WYCO alternative routes in Wyoming also cross FWS-designated Priority Areas for Conservation.

In Colorado, Alternative WYCO-D would cross substantially more preliminary priority sage-grouse habitat, FWS-designated Priority Areas for Conservation, and sage-grouse habitats within 4 miles of leks attended by substantially more sage-grouse than all other WYCO alternative routes. Alternatives WYCO-B, WYCO-C, and WYCO-F all cross similar amounts of preliminary priority sage-grouse habitat and FWS-designated Priority Areas for Conservation. Sage-grouse lek attendance at leks within 4 miles of Alternatives WYCO-B, WYCO-C, and WYCO-F are also similar in Colorado. The COUT BAX and COUT alternative routes would cross sage-grouse preliminary general habitat in Colorado but do not cross preliminary priority habitat or sage-grouse habitat within 4 miles of leks.

Unlike Colorado and Wyoming, sage-grouse habitat in Utah is naturally fragmented into several distinct population areas. The COUT BAX alternative routes would cross less sage-grouse habitats in Utah than the COUT alternative routes and route variations. Additionally, the COUT BAX alternative routes would not cross habitats within 4 miles of sage-grouse leks. Alternatives COUT-A and COUT-B cross more sage-grouse habitats in Utah, more habitats associated with sage-grouse populations that have been

identified as a priority for conservation actions, and habitats within 4 miles of leks attended by more sage-grouse than other COUT alternative routes in Utah.

Route variations would have similar impacts on sage-grouse habitat as corresponding alternative routes in the Little Snake, Colorado-Utah Border, Argyle Ridge, Spanish Fork Canyon/U.S. Highway 6, and Chipman Creek areas. Impacts associated with the other route variations are as follows:

- **Deerlodge Road**: Alternative WYCO-B would impact important high-quality sage-grouse nesting and brood-rearing habitat recognized by CPW on the Tuttle Ranch Conservation Easement. However, the Tuttle Ranch Conservation Easement contains limited identified sage-grouse priority habitat and Alternative WYCO-B would be colocated with an existing transmission line. Variations 1 and 2 would avoid important sage-grouse habitats recognized by CPW on the Tuttle Ranch Conservation Easement. However, sage-grouse priority habitats would still be impacted by the route variations, and Variation 1 would be located in an area with few existing anthropogenic disturbances.
- **Camp Timberlane/Argyle Canyon**: Alternative COUT-C and Variations 1, 2, 3, and 4 would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. Variation 5 would avoid all areas within 4 miles of sage-grouse leks in the Emma Park area. Alternative COUT-C and all route variations would cross the same amount of sage-grouse priority habitat.

Fish and Aquatic Resources

Fish and aquatic resources in the Project area vary extensively, depending on the ecoregion where they occur and the geography and geology contributing to their form and function. The results of the impact analysis indicate that implementation of design features of the Proposed Action and selective mitigation measures would be largely mitigate initial impacts. Low residual impacts would occur but would be limited to where the Project would cross designated critical habitat. In general, the COUT and COUT BAX alternative routes would affect the most habitats based on the large number of available habitats in Utah. Overall, the COUT alternative routes would affect the greatest extent of habitat, including critical habitats. Results of the impact analysis in addition to the cumulative effects analysis show that residual impacts from the Project and other past and present actions and RFFAs indicate the alternative routes do not vary greatly in their potential to affect fish and aquatic resources. Based on this assessment, it is expected that route selection would not result in substantial differences in the amount, type, or intensity of impacts on fish and aquatic resources resulting from the Project.

Route variations would have similar impacts on water resources as corresponding alternative routes, with the exception of the variation in the Spanish Fork Canyon/U.S. Highway 6 area. Alternative COUT-C Variation 1 would make two crossings of the Soldier Creek, which is a main tributary of the Spanish Fork River. Therefore, Alternative COUT-C (Variation 1), led to more localized incremental impacts on water resources than Alternative COUT-C.

Land Use

Existing Land Use

Moderate or low residual impacts on existing land uses would be anticipated for all alternative routes. Moderate residual impacts would be associated with the Project crossing agriculture (irrigated, center-pivot, and/or farm complexes), existing residential properties, and a cemetery after the application of selective mitigation measures.

The greatest area of moderate residual impacts on existing land uses would result from implementation of the COUT alternative routes. Alternative COUT-A would result in 9.8 miles of moderate impacts resulting from crossing irrigated and center-pivot agriculture and residential properties. Alternative COUT B would result in 9.0 miles of moderate impacts resulting from conflicts with the Ioka cemetery, irrigated and center-pivot agriculture, and residential properties. Alternative COUT-C would result in 1.2 miles of moderate impacts resulting from conflicts with irrigated and center-pivot agriculture and residential properties. Alternative COUT-H would result in 3.0 miles of moderate impacts resulting from conflicts with irrigated and center-pivot agriculture. Alternative COUT-I would result in 4.3 miles of moderate impacts resulting from conflicts with irrigated and center-pivot agriculture. Other alternative routes would be anticipated to have fewer miles of moderate and low impacts (Section 3.2.11.5) except for Alternative WYCO-D. Alternative WYCO-D would result in 6.7 miles of moderate impacts from crossing irrigated agriculture and residential properties. The results of the cumulative effects analysis indicate that similar impacts on existing land use would occur regardless of the alternative route selected.

Moderate or low residual impacts on existing land uses would be anticipated for all route variations. Moderate residual impacts would be associated with the Project crossing irrigated and center-pivot agriculture and existing residential properties after the application of selective mitigation measures. The main moderate residual impact for the route variations is the impact on residential properties. The following variations may impact residential properties (all within 1 mile): Camp Timberlane/Argyle Canyon Variation, Deerlodge Road Area Variation 2, Spanish Fork Canyon/U.S. Highway 6 Agency Preferred Alternative (COUT-C). The results of the cumulative effects analysis indicate that similar impacts on existing land use would occur regardless of the route variation selected.

Authorized Projects

Residual impacts on authorized projects would be low for most alternative routes, with high impacts on the COUT-BAX alternative routes when crossing authorized military facilities for 1.0 mile and moderate residual impacts on the Alternative COUT-A (7.3 miles), Alternative COUT-B (5.7 miles), and Alternative COUT-C (0.5 mile). Moderate residual impacts are associated with the alternatives crossing authorized residential and residential mixed use subdivisions and an authorized pipeline. These authorized projects are treated similar to existing land use since these facilities could be developed at any time. The results of the cumulative effects analysis indicate that similar impacts on authorized projects would occur regardless of the alternative route selected.

No high or moderate residual impacts on authorized projects would be anticipated for the route variations. The results of the cumulative effects analysis indicate similar impacts on authorized projects would occur regardless of the route variation selected.

Future Land Use

Residual impacts on future land use would be low for all alternative routes. The results of the cumulative effects analysis indicate that similar impacts on future land use would occur regardless of the alternative route or route variation selected.

No moderate or high or low residual impacts on future land uses would be anticipated for the all route variations.

Zoning and General Plan Management Direction

The majority of alternative routes cross agricultural and parks/ preservation zones. Every alternative crosses an area that may require a conditional use or special use permit, with all COUT alternatives

crossing 0.1 mile of zones that do not allow transmission lines. Once a final route has been chosen, further coordination with the applicable local agencies will occur to determine the permitting process.

All route variations would require a conditional or special use permit except the Argyle Ridge Variation route; which, based on a preliminary review of zoning and general plan management direction, allows transmission lines (permitted). Once a final route has been chosen, further coordination with the applicable local agencies will occur to determine the permitting process.

Parks, Preservation, and Recreation

Moderate or low residual impacts on parks and recreation resources would be anticipated for all alternative routes. Moderate impacts would be associated with the Project crossing trails (i.e., Rawlins to Baggs Road Trail and non-motorized trails) and recreation sites.

The results of the effects analysis indicate implementation of Alternatives WYCO-D, COUT BAX-E, and COUT-B would have the largest extent of moderate impacts on parks and recreation resources. There would be effects on semi-primitive non-motorized recreation opportunity spectrum classification area in the BLM Price Field Office from the Project crossing for 1.4 miles with Alternatives COUT-H and COUT-I and 1.1 miles with Alternative COUT-C. Typically, development of permanent roads or other facilities is not allowed under the category. The effects on Special Recreation Management Areas (SRMAs) were also analyzed (see Section 3. 2. 12.4.1). Dispersed recreation, due to the nature of the activities and the lack of a consistent dataset of available data for all alternative route study corridors, was not included in the effects analysis. Cumulative effects on parks and recreation resources would be minor. The Project would not contribute incrementally to cumulative effects on the trails, SRMAs, and recreation sites because these areas would be spanned or the Project would incrementally affect less than 1 percent of the total area crossed.

No residual impacts on parks and recreation resources would be anticipated for the route variations. The Chipman Creek, Colorado to Utah Border, and Camp Timberlane/Argyle Canyon route variations cross scenic byways (White River/Strawberry Road Scenic Backway, Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway, and Reservation Ridge Scenic Backway). See Visual Resources for impacts on these resources.

The Project would not contribute incrementally to cumulative effects on the scenic byways because these areas would be spanned or the Project would incrementally affect less than 1 percent of the total area crossed.

Transportation and Access

Moderate but temporary impacts on transportation and access would be anticipated for all alternative routes considered where temporary closures and/or delays would occur from construction of the Project when crossing roadways and/or railroads.

A Traffic and Transportation Management Plan would be developed to ensure impacts from construction of the Project, and any associated access are kept to a minimum through the use of management practices and selective mitigation measures identified as part of the NEPA process. The practices and measures included in the plan would be intended to mitigate the effects of access for the Project on environmental resources, roads, traffic, travel, and road safety.

Railroad alignments would not be altered by the Project and coordination with the railroad companies would occur for the construction, operation, and maintenance of the Project. Cumulative effects

associated with the Project and other RFFAs would have similar impacts on transportation and access resources regardless of the alternative route or route variation selected.

Congressional Designations

Effects on congressional designations or potential would be anticipated for the COUT alternative routes, specifically the crossing of the Lower Green River Suitable Wild and Scenic River segment by Alternatives COUT-C, COUT-H, and COUT-I and lands managed by the URMCC by Alternative COUT-A (i.e., use of lands for purposes other than wildlife mitigation would require concurrence from the URMCC and the FWS and would require suitable alternate mitigation).

Alternative COUT-C in Utah crosses the Lower Green River suitable WSR for 0.8 mile within the 1-mile-wide utility corridor designated in the Vernal RMP. Short-term effects from the alternative route crossing the suitable WSR could include increased noise and dust; increased activity along both sides of the river disturbing recreation users, and could affect recreational access to the river during construction in the Project area. No new access routes would be constructed within 0.25 mile from the bank on each side of the river.

The Project would not alter the river's free-flowing condition. Also, the outstandingly remarkable values described for recreational opportunities and fish would not be directly affected by the Project. The Project would affect the view and experience of recreational users traveling on the river (i.e., rafting, canoeing) but would not hinder opportunities for fishing, hunting, waterfowl viewing, floating, and camping. If the Project were constructed in the utility corridor near Fourmile Bottom, a recreationist's viewshed while rafting or canoeing would begin to be influenced by the conductors spanning the river as the recreationists floated southbound (or downstream) past Moon Bottom, approximately 2.5 miles upstream from the location where the Project crosses the river. Continuing to the south, recreationists would begin to see two skylined structures located on the east bank (shown on the visual simulation from key observation point [KOP] #203 in Appendix N), which would increasingly dominate views up to the location where the Project crosses the river. As a recreationist approaches the proposed crossing of the Lower Green River, the tower structures would be skylined on either side of the river with conductors spanning approximately 2,700 feet across the river. Continuing past the location where the Project crosses the river, views of the Project would diminish until passing Fourmile Bottom where topography would begin to screen the structures from view approximately 0.75 mile past Fourmile Bottom except for views directly upriver where skylined structures would be visible up to Hydes Bottom (1.25 miles past Fourmile Bottom). For a discussion of compliance with BLM visual resource Management (VRM) objectives associated with this area, refer to Section 3.2.18. For a discussion of effects on the recreational setting, refer to Section 3.2.12. No impacts on the fish outstandingly remarkable value would be anticipated (refer to Section 3.2.10).

Placement of any Project components across the Lower Green River suitable segment would be micro-sited prior to construction in coordination with BLM to minimize surface or visual disturbances from towers or other facilities and to minimize impacts on sensitive plant species (refer to Section 3.2.6); recreation setting (refer to Section 3.2.12); the visual environment (refer to Section 3.2.18); and other natural and cultural resource values. Other selective mitigation measures that would be applied include minimizing ground disturbance associated with construction and maximizing the span length between transmission line structures at the river crossing to reduce their dominance within the Lower Green River viewshed to the extent that is technically feasible. These measures include limiting the construction of new access roads within view of the river and positioning the transmission line structures where they would less visible from the river to the extent practicable.

The percentage of cumulative effects on the Lower Green River Suitable WSR that would be attributable to the Project would be less than 1 percent. The Project right-of-way is located in an area that has past and present actions and RFFAs.

If this route were selected for both the Project and the TransWest Express Transmission Project, and both projects were constructed, short-term effects from the two transmission projects crossing the suitable WSR would include increased noise and dust; increased activity along both sides of the river disturbing recreation users, and could affect recreational access to the river during construction in the Project area. No new access routes for the Project would be constructed within the 0.25 mile from the bank on each side of the river. It is also assumed that no new access routes for the TransWest Express Transmission Project would be constructed.

The construction of the two projects would not affect the river's free-flowing condition. Long-term cumulative effects on the outstandingly remarkable values described for recreational opportunities and fish would not be anticipated. The presence of the two projects would affect the view and experience of recreational users traveling on the river (i.e., rafting, canoeing) but would not hinder opportunities for fishing, hunting, waterfowl viewing, floating, and camping. Recreationists at the Fourmile Bottom put-in, as well as floating on this portion of the Green River, would have views intermittently influenced by development. These include views of an existing pipeline corridor from maintenance activities and potential views of existing wells and/or future development of areas leased for oil and gas development where the adjacent canyon walls are shorter and do not screen views from the river. Through the introduction of the Project and the TransWest Express Transmission Project, views at and adjacent to the Fourmile Bottom put-in would be modified by skylined transmission structures and access road construction in steep terrain as shown in the cumulative effects simulation. To reduce cumulative effects on these views, potential mitigation would include colocation of the two transmission projects and maximizing the distance between structures at the river crossing to reduce their dominance within the Lower Green River viewshed to the extent that is technically feasible. These measures would include limiting the construction of new access roads within view of the river and positioning the transmission line structures where they would less visible from the river to the extent practicable.

For more information on the impacts on crossing the Deerlodge Road entrance to Dinosaur National Monument, refer to Appendix G. The Project would not directly affect any wilderness areas or WSAs. Overall, less than 1 percent of the alternative routes would affect congressional designations. The greatest extent of cumulative effects of the Project and past and present actions and other RFFAs on congressional designations would be associated with these alternatives.

No route variations cross congressional designations except for Deerlodge Road Area Variation 1 where it crosses the Deerlodge Road portion of Dinosaur National Monument. For information regarding this crossing see Appendix G for more information.

Special Designations and Other Management Areas

Effects on the management prescribed for specially designated areas and other management areas would be anticipated for all alternative routes considered. The Project crosses wildlife habitat management areas, state wildlife areas, wildlife management areas, land and water conservation fund sites, conservation easements, and Areas of Critical Environmental Concern. The results of the effects analysis indicate Alternatives WYCO-C, COUT BAX-E, and COUT-A would result in the greatest extent of impacts on the management prescribed for special designations and other management areas. The WYCO alternatives cross the Tuttle Ranch Conservation Easement and Cross Mountain Ranch Conservation Easement; Alternatives COUT BAX-B, COUT BAX-C, and COUT-I alternatives cross the North Moroni Conservation Easement, and Alternatives COUT BAX-E and COUT-H cross the Crawford Farm and Nuttall Farm conservation easements; and COUT-A alternative crosses the Sand Wash/Sink Draw and Alan Smith/Deep Creek Investments conservation easements (all easements are exclusion areas for utilities). Alternative COUT BAX-B crosses the Big Hole Area of Critical Environmental Concern (an exclusion area for utilities); and the WYCO alternatives cross either one or both of the recreation area

land and water conservation fund sites (it is assumed these sites will be spanned). Overall, less than 1 percent of the alternative routes would affect special designations or other management areas. The greatest extent of cumulative effects of the Project and past and present actions and other RFFAs on special designation and other management areas would be associated with Alternatives WYCO-D, COUT BAX-B, COUT BAX-C, COUT-A, and COUT-H.

No route variations cross special designations or other management areas except for the Deerlodge Road Area route variations that cross that Tuttle Ranch and Cross Mountain Ranch conservation easements. The granting of easements or rights-of-way for transmission is prohibited within these conservation easements. The only effective mitigation for Project effects on these easements would be avoidance in lieu of amending the terms of agreement.

The short-term cumulative effects of the Project, in addition to any past and present actions and an RFFA proposed in this area, would be increased noise from construction equipment, limited access to a portion of the conservation easement during construction actions, and disturbance to the lands in the right-of-way. Long-term cumulative effects include additional industrial development in the conservation easement, which goes against the terms of the conservation easement.

Lands with Wilderness Characteristics

Lands with wilderness characteristics are public lands that have been documented as meeting the requirements set forth in Manual 6310, and include lands that are of sufficient size and contain naturalness, outstanding opportunities for solitude and/or primitive and unconfined recreation, and may contain additional supplemental values.

Lands with wilderness characteristics identified within the 2-mile-wide alternative route study corridor were in the BLM Rawlins, Little Snake, White River, Grand Junction, Moab, Vernal, and Price Field Offices. The potential for effects on lands with wilderness characteristics was identified as an issue for analysis by the BLM. Additionally, an assessment of compliance with BLM RMP management objectives and decisions for lands with wilderness characteristics that have been analyzed in a land-use plan is also required.

Several lands with wilderness characteristics units are crossed by alternative routes considered for the Project. None of the alternative routes intersect a land with wilderness characteristics unit that has been designated as a natural area or prescribed for protection of wilderness characteristics under a BLM land-use plan. No effects on the management and protection prescriptions for lands with wilderness characteristics in units with plan decisions to manage for the protection of wilderness characteristics are anticipated from implementation of the Project. However, some units have been identified since the last plan update. For such units, the Project may foreclose future management options related to lands with wilderness characteristics.

The WYCO alternatives routes would have similar levels of effects on lands with wilderness characteristics units. The COUT BAX alternative routes would have similar effects on lands with wilderness characteristics units in Colorado and in Utah until the alternative routes diverge west of Green River, Utah. Alternative COUT BAX-C would have the greatest impact on lands with wilderness characteristics units because the alternative route traverses the boundary between two units that form the eastern entrance to the northern portion of the San Rafael Swell and does not parallel an existing transmission line or other existing linear feature.

Alternative COUT-C, the Agency Preferred Alternative would cross the Desolation Canyon unit, Bad Lands Cliffs unit, and Currant Canyon unit in Utah. Also, additional lands have been proposed adjacent

the Desolation Canyon and Bad Lands Cliffs units. At the time of printing, the BLM is reviewing the proposals for these units and will update the inventory accordingly.

Alternative COUT-C in Utah crosses the northern portion of the Desolation Canyon unit in the Vernal Field Office (removing approximately 7,100 acres from the Unit for the Project right-of-way and northern edge of the Unit), paralleling approximately 2,000 feet from two Questar pipelines and adjacent to oil and gas development. These pipelines define the northern boundary of the unit. The remaining portion of the inventoried area to the south of where the Project would cross the unit would meet the 5,000 acre size requirement but the portion to the north of the Project, would not meet the size requirement. Short-term effects from the Project to the naturalness, solitude/unconfined and primitive recreation of the area would be visual, noise, dust, and vehicle emissions from construction activities and equipment as well as potential restrictions on access to the inventoried area, similar to what may occur from the oil and gas activities in the unit.

Long-term effects from the Project would be most intense adjacent to the Green River where the Project would affect the wilderness characteristics as the steep terrain screens views of adjacent modifications including the Questar pipelines and oil and gas development. Further to the west, the Project would affect wilderness characteristics in the northern portion of the unit except where cherry-stemmed oil and gas wells (and associated roads) which have already influenced the existing character. In the southern portion of the unit, the wilderness characteristics would be minimally impacted especially in the canyons and remote drainages which characterize this unit due to the enclosed nature of these landscapes.

Alternative COUT-C in Utah crosses the northern portion of the proposed Desolation Canyon Addition unit (removing approximately 37 acres from the Unit for the Project right-of-way and a portion of the Unit). Similar to the long-term effects described for the Desolation Canyon Unit, the most intense impacts would occur adjacent to the Green River, as well in Kings Canyon, where the Project would affect wilderness characteristics due to the limited visibility of existing modifications in context with the Project.

Alternative COUT-C in Utah crosses the northern portion of the proposed Bad Lands Cliff unit (removing approximately 217 acres from the Unit for the Project right-of-way and a small portion of the unit). Per initial review of the proposed unit, the unit is bisected by a bladed and maintained road, which would not meet wilderness characteristics requirements, unless the boundary of the unit is adjusted. If the unit is found to have wilderness characteristics, the BLM may require compensatory mitigation to offset impacts to the lands with wilderness characteristics where impacts cannot be effectively avoided.

Alternative COUT-C in Utah crosses the northern portion of the Currant Canyon unit (removing approximately 103 acres from the Unit for the Project right-of-way along the northern edge of the Unit). Long-term effects would be most intense on ridgelines and higher elevation portions of the unit where the Project traverses the top of the Bad Land Cliffs introducing skyline transmission structures which would begin to affect wilderness characteristics. Due to the steep terrain in this unit, and limited access routes, the Project would be mostly screened by topography in the most accessible portions of the unit in the draws and canyons.

Effectiveness of using these mitigation measures include minimizing Project effects to resources that contribute to the area's wilderness characteristics by consolidating and minimizing surface disturbances during project construction, access, and facility placement as well as assure that the alignment would not further encroach into areas not currently affected by the Project as disclosed in this EIS. Applying these mitigation measures to units that have been documented to contain wilderness characteristics would allow for the relevant BLM field office to use discretion at the local level to ensure retention of wilderness

characteristics in areas not directly affected by the Project for future management consideration, to the greatest practical extent.

The BLM may require compensatory mitigation to offset impacts to lands with wilderness characteristics where impacts cannot be effectively avoided, in accordance with the Department of the Interior's Secretarial Order 3330 and the BLM's Draft Regional Mitigation Manual – Draft MS 1794 "Regional Mitigation Manual" (June 13, 2013) and consistent with the CEQ's NEPA regulations, 40 CFR 1508.20. Secretarial Order 3330 provides a policy that directs the Department of the Interior to "seek ways to offset or compensate for those impacts [that cannot be avoided or effectively minimized] to ensure the continued resilience and viability of our natural resources over time." (Secretarial Order 3330 at 2). BLM Draft Manual MS 1794 also reflects BLM's policy commitment to "consider mitigation outside of the area of impact when it is not feasible or practical to mitigate impacts to an acceptable level in the same area as the use-authorization." (Draft Manual MS 1794 at 1-5).

Because impacts associated with the Project alternatives do affect lands with wilderness characteristics, and the additional mitigation measures would minimize, but not avoid impacts altogether, compensatory mitigation may be appropriate to offset impacts of the project on lands with wilderness characteristics. Compensatory mitigation for impacts to lands with wilderness characteristics may include funding to maintain or enhance lands wilderness characteristics through resource restoration and other related activities, funding of related interpretation and educational programs, or other appropriate projects at the discretion of the field manager.

The Project would not contribute incrementally to cumulative effects on the lands with wilderness characteristics units.

Inventoried Roadless Areas and Unroaded/Undeveloped Areas

There are no IRAs crossed by the WYCO or COUT BAX alternative routes. Alternatives COUT-A, COUT-B, and COUT-C would have moderate impacts on the characteristics and qualities of the Cedar Knoll IRA. Alternative COUT-A would have low impacts on IRAs associated with the Uinta National Forest. Alternative COUT-B would have the most extensive impacts on IRA characteristics and qualities along Sowers Canyon where the Project intermittently crosses IRAs 0401010 and 0401011.

There are no unroaded/undeveloped areas crossed by WYCO alternative routes. Alternatives COUT BAX-B, COUT BAX-C, and COUT-I would have the same moderate impact on the East Mountain Unroaded/Undeveloped Area. Similarly, Alternatives COUT BAX-E and COUT-H would have the same moderate impacts on the Oak Creek Unroaded/Undeveloped Area. Moderate impacts on the characteristics and qualities of the Cedar Knoll Unroaded/Undeveloped Area would result from the Project along Alternatives COUT-A, COUT-B, and COUT-C. Alternative COUT-B would have the most extensive impacts on unroaded/undeveloped area characteristics and qualities along Sowers Canyon where the Project intermittently crosses the Sowers Canyon East and Cottonwood unroaded/undeveloped areas.

Two of the route variations areas have variations crossing IRAs or unroaded/undeveloped areas. In the Camp Timberland/Argyle Canyon comparison area, Variation 5 would moderately impact roadless and wilderness characteristics in IRA 0401012 (Ashley National Forest). In the Chipman Creek comparison area, Variation 1 would cross the Chipman Creek IRA (Uinta-Wasatch-Cache National Forest), resulting in moderate impacts on the area's roadless and wilderness characteristics.

Visual Resources

As identified through public and agency scoping, three items were analyzed to determine effects on visual resources resulting from the Project: (1) impacts on scenery, (2) impacts on views, and (3) compliance with federal agency visual management objectives. Impacts on scenery would be similar among the alternative routes, except for the following:

- Alternative WYCO-B traverses Flat Top Mountain, potentially modifying existing landscape characteristics.
- Alternative COUT BAX-E crosses the Wasatch Plateau in an area with limited existing cultural modifications.

Cumulative effects on scenery also would be similar among the alternative routes, except Alternative WYCO-D would have additional cumulative effects on scenery since the Project would not parallel the TransWest Express Transmission Project south of Baggs, Wyoming and Alternative COUT-I would not parallel the TransWest Express Transmission Project east of Wellington, Utah, producing more intense cumulative effects associated with the Project.

Impacts on views would be consistent among the alternative routes in each route grouping except the following:

- Alternative WYCO-B parallels the Cherokee Historic Trail for approximately 15 miles at a distance of 1 to 4 miles away, whereas Alternative WYCO-F crosses the trail three times.
- Alternative WYCO-D parallels Wyoming Highway 789 (a county-designated scenic drive) and Colorado State Highway 13 for approximately 60 miles.
- Alternatives COUT BAX-C and COUT-H would cross the Energy Loop Scenic Byway five times on the Wasatch Plateau, developing high impacts at each crossing.
- Alternatives COUT-C, COUT-H, and COUT-I would highly affect views from the Green River.

The extent of cumulative effects on views would be similar among the alternative routes in each route grouping. The extent of cumulative effects would be largely dependent on the extent of colocation with the TransWest Express Transmission Project, as siting these two projects together would focus effects on a smaller area and separating the two projects would produce more diffuse and widespread impacts on views.

Compliance with federal agency visual management objectives and conformance with BLM and USFS land-use plans are generally similar among the alternative routes in each route grouping with the following exceptions:

- Alternatives COUT BAX-C and COUT BAX-E would require LUPAs where the Project would parallel U.S. Highway 6 and the Green River Cutoff Road in the BLM Price Field Office and cross BLM Visual Resource Management (VRM) Class III lands.
- Alternatives COUT-A, COUT-B, and COUT-C would require LUPAs associated with partial retention visual quality objectives on the Manti-La Sal National Forest
- Alternatives COUT-C, COUT-H, and COUT-I would require LUPAs to the BLM VRM Class II and III lands in proximity to the Enron Recreation Area, Green River, Nine Mile Canyon Scenic Backway, and Argyle Canyon Road in the BLM Vernal and Price Field Offices.

Impacts associated with the route variations are summarized by area as follows:

- Little Snake: Variation 1 would have decreased impacts on views from a residence adjacent to the Little Snake River compared to Alternative WYCO-B.
- Deerlodge Road Area: Variations 1 and 2 would greatly increase impacts on visual resources associated with Dinosaur National Monument compared to Alternative WYCO-B.
- Colorado-Utah Border: Variation 1 would have additional impacts on Class B scenery and views from Dinosaur National Monument compared to Alternative COUT-C.
- Argyle Ridge: Variation 1, compared to Alternative COUT-C, would have additional high impacts on Class A scenery in Argyle Canyon, longer duration views from residences along Argyle Canyon Road, and a LUPA associated with VRM Class III lands adjacent to Argyle Canyon Road in the BLM Vernal Field Office.
- Camp Timberlane/Argyle Canyon: Alternative COUT-C and all variations would have high impacts on views from residences. Variations 2 and 5 would highly impact views from the Reservation Ridge Scenic Backway. These variations also have LUPAs associated with USFS retention and partial retention visual quality objectives in the Ashley National Forest as well as BLM VRM Class III lands adjacent to Reservation Ridge Scenic Backway in the BLM Vernal Field Office. Variations 4 and 5 would highly impact views from Camp Timberlane.
- Spanish Fork Canyon/U.S. Highway 6: Variation 1 would highly impact views from residences adjacent to U.S. Highway 6 and moderately impact views from U.S. Highway 6 where the highway is crossed twice by this variation.
- Chipman Creek: Variation 1 would have similar impacts as Alternative COUT-A in this area.

National Trails System

Impacts on national scenic and historic trails, including trails under feasibility study, were analyzed in a manner consistent with BLM Manual 6280 and based on direction received from the BLM's National Trails Staff. No impacts were identified on the COUT alternative routes or in Colorado for the WYCO alternative routes because no national trails were identified adjacent to these alternative routes.

Impacts on the Continental Divide National Scenic Trail, including cumulative effects, would be the same for each WYCO alternative route or route variation since they share the same alignment adjacent to the national scenic trail.

Effects on the Overland Historic Trail are similar among the WYCO alternative routes except that Alternative WYCO-D would be located in proximity to the Overland Trail Ruts Interpretive Site and Alternative WYCO-C would influence views from Signature Rock, a trail-related cultural site, which would increase impacts on this trail's resources. Cumulative effects on the Overland Historic Trail would be similar among all the WYCO alternative routes.

Impacts on the Cherokee Historic Trail would be similar among the WYCO alternative routes except Alternative WYCO-B parallels the historic trail for approximately 15 miles varying from 1 to 4 miles away and Alternative WYCO-F crosses the historic trail three times, which would intensify effects on the trail's resources. Cumulative effects on the Cherokee Historic Trail would intensify the direct effect impact described above with the addition of the TransWest Express Transmission Project along the same corridors as the Project.

Impacts on the Old Spanish National Historic Trail would be similar among the COUT BAX alternative routes except Alternative COUT BAX-B would parallel key trail traces along Cottonwood Wash and into

Buckhorn Flat, resulting in high impacts. Cumulative effects on the Old Spanish National Historic Trail would be similar among each of the COUT BAX alternative routes but would be the most intense, in association with the Project, on Alternative COUT BAX-B, due to key trail traces along Cottonwood Wash and into Buckhorn Flat being paralleled where an adjacent alternative route is not being considered for the TransWest Express Transmission Project.

Cultural Resources

In general, effects associated with the construction and operation phases of the Project would be similar for any of the alternative routes, including any local routing options. Cultural resources could be destroyed by construction activities, such as clearing, grading, drilling, and substation development. Development of new access corridors and rights-of-way could increase access to previously inaccessible areas, leading to potential vandalism of cultural resource sites, including both those previously recorded and those that are yet to be encountered. There also could be cumulative effects from indirect impacts in the form of introduced visual, atmospheric, and audible elements that could detract from the cultural significance of potential traditional cultural properties, or other significant cultural resources. These indirect impacts also could adversely impact cultural resource sites that are eligible, or have the potential to be listed in the National Register of Historic Places (NRHP). The introduction of additional development could alter the setting and feeling of historic properties (e.g., habitation structures, open architectural sites, waterworks, and rock art).

As a result of the presence of existing development projects and proposed future actions, including, but not limited to the TransWest Express Transmission Project, numerous cultural resources and potentially significant cultural resources that may be encountered could be negatively affected throughout the Project area. If colocated, the TransWest Express Transmission Project could have a negative impact on many of the same cultural resources that would be affected by the Project. Overall, the addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources . The extent of cumulative effects on cultural resources could be reduced significantly through avoidance and the implementation of mitigation measures. Potential impacts on cultural resources in the Project area would be incremental, and the potential to mitigate impacts on cultural resources is good. The indirect cumulative effects on cultural resources, as a result of increased public access, would be expected to be low.

Fire Ecology and Management

Construction, operation, and maintenance of the proposed Project would have the potential to affect fire ecology and management throughout nearly the entire Project area under any action alternative. The types of negative effects would be similar under any action alternative and would include potential changes in vegetation and fuels during construction and reclamation, an increased risk of fire ignitions during construction and maintenance activities, the creation of a potential hazard during fire suppression, and the creation of a constraint on wildfire for land-management-plan objectives. However, the extent and intensity of any of these effects would strongly depend on the conditions under which any fire occurs. The creation of new utility corridors outside of existing utility corridors would require an additional level of protection from land-management agencies. Beneficial effects may occur under each action alternative, including the creation of areas with lower fuels through heavily vegetated areas and the presence of roads that may be used for access and development of fire breaks during fire suppression.

Potential adverse effects of the Project would be addressed through design features of the Proposed Action, including the Fire Protection Plan in the Plan of Development, and through coordination with appropriate agencies responding to any fires near the Project area. Design features focus on the reduction in the risk of any accidental fire ignitions during construction and maintenance and in successfully

maintaining vegetation in the right-of-way in a manner that would not contribute to an unnatural frequency or increased intensity of fires. Coordination with the Incident Commander for any fires near the Project would ensure that fire suppression personnel are aware of any hazards associated with the Project and would assist in determining whether de-energizing the line would be necessary for safety and reliability.

Social and Economic Conditions

The construction, operation, and maintenance of the proposed transmission line and related facilities under all alternative routes would be expected to have a minimal impact on local employment. The largest potential impact from the Project on employment would occur during the construction phase. However, construction is expected to be staggered over approximately 3 years, so average direct employment is not expected to exceed 610 people at any one time and would be dispersed across the study area. It is anticipated that much of the construction workforce would temporarily reside in communities near the Project. However, it is likely a portion of the construction workforce closest to the Wasatch Front and possibly Grand Junction would commute from their residences.

Due to the linear nature of the Project, its remote location and remarkable length (400 to 540 miles), workers would be expected to stay in multiple locations along the Project route and move along the route, depending on the location of the work. Housing and lodging is limited in nearby small communities, with low numbers of housing units, low rental vacancy rates, and high lodging occupancy rates. Many of the towns in southwestern Wyoming, northwestern Colorado, and eastern and central Utah are small and remote with limited housing resources. Construction efforts and schedules associated with present and future cumulative actions and projects may coincide with the Project schedule with minor to major adverse effects on housing availability and public services in nearby communities. Housing resources would be expected to be more prevalent in the relatively larger communities along the alternative routes. As a result, the Applicant may seek to provide housing for its workers across multiple communities (with a larger number of crews with relatively fewer workers) to find adequate housing.

The Project and all of its alternative routes would be expected to have temporary and minimal adverse impacts on government-provided services across the region, including schools, emergency facilities, and medical facilities. This is due to the fact that changes in employment and population are predicted to be small and temporary with the construction of the Project. Due to the linear nature of the Project, its remote location and remarkable length (400 to 540 miles), workers would be expected to stay in multiple locations along the Project route and move along the route, depending on the location of the work. Therefore, it is not anticipated there would be a measurable change in supply or demand of relevant government services throughout the study area.

Construction expenditures would be expected to beneficially affect local economies through direct jobs and income as well as through workers spending their wages in local communities. Construction expenditures for engineering, planning, materials, supplies, and other construction services also would generate jobs and income in the metropolitan areas of Denver, Salt Lake City, and Cheyenne. The construction and operation of the transmission line would generate additional property taxes to counties where the line would be located. The magnitude of these tax revenues range by alternative route from $4.6 million to $7.8 million in the first years of operation and $463,000 to $788,000 in the following years the line is in operation. The counties would each receive their proportional share of such tax revenues.

Nearby property values would be affected by the construction and operation of the transmission line. These impacts on property values (and salability) would occur on an individual basis as a result of the new transmission line. There would be adverse effects expected on 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 have a moderate effect on property values for these residences in the short-term. The siting of the Gateway West and/or TransWest Express transmission projects in the same alternative route or route variation as the Project would have cumulative adverse effects on property values, resulting in considerable adverse effects on these property values, at least in the shorter-term. Landscaping and other natural features that create visual obstructions could mitigate these temporary losses.

In the Wyoming-Colorado alternative routes, Alternative WYCO-D has the potential to have moderately adverse impacts on property values with 50 properties near Craig, Colorado, located within 0.25 mile of the alternative route or route variation, while the other alternative routes in this region would have minimal impacts. Colorado-Utah routes have between 100 and 239 residences located within 0.25 mile of the alternative routes and the siting of these routes would have adverse impacts on these nearby residences. There would be more adverse impacts associated with Alternatives COUT-A and COUT-B than the other Colorado-Utah routes due to the relatively larger number of nearby residences. However, it is anticipated that the remaining Colorado-Utah routes, including all COUT BAX alternative routes and Alternatives COUT-C, COUT H, and COUT-I would still have moderately adverse effects on property values due to the proximity of residences to the alternative routes (from 11 to 16 residences within 0.10 mile and 100 to 141 residences within 0.25 mile). These impacts on residences are located in the communities of Nephi, Martin, Helper, Mount Pleasant, Roosevelt, Castle Dale, Fruitland, Fairview, Duchesne, Upalco, and Ioka in Utah, and Mack, Colorado, as well as residences near Strawberry Reservoir and in southwestern Duchesne County, Utah. These adverse effects are likely to dissipate with time and could be mitigated with changes in landscaping or topography.

While potential environmental justice populations are located in the study area near all the alternative routes, it does not appear these populations would be disproportionately affected by the development or operation of the Project. There would not be cumulative impacts on these populations.

Public Health and Safety

The 500kV transmission line proposed for the Project will be a source of electric and magnetic fields (EMF), as are the several hundred thousand miles of high-voltage transmission lines that currently cross the United States. Other sources of EMF are distribution lines commonly found in neighborhoods and the many electrical appliances and devices in use every day. The modeled magnitude and distribution of EMF, audible noise, and radio noise around the proposed 500kV transmission line are similar, whether it is constructed by itself or adjacent to existing transmission lines because of the large distance between the proposed transmission line and existing transmission lines. Hence, environmental exposures would be similar if the proposed line is constructed along any of the alternative routes. Comparisons of modeled levels of EMF, audible noise, and radio noise to recommended guidelines did not indicate that the proposed Project either alone or operating adjacent to other transmission lines would produce exposures that would adversely affect human health, farm animals, or wildlife, nor is it likely to cause annoyance to nearby residents.

Summary Comparison of Impacts

This section summarizes the results of the comparison of alternative routes, including identification of the Agency Preferred Alternative on federal lands, and identifies the Applicant's Preferred Alternative. The comparison process aided the Authorized Officers in making the selection of the route for the Agency Preferred Alternative on federal lands. Tables S-4a through S-4e provide a detailed comparative analysis of the resources for each alternative route considered. The tables identify key resource inventories and

associated impacts for each resource based on the analysis presented in Chapter 3. Table S-5 lists jurisdiction and the existing linear facilities that would be parallel to the proposed 500kV transmission line along each alternative route. A summary of estimated disturbance and miles of access roads associated with each alternative route is presented in Table S-6.

Agency Preferred Alternative on Federal Lands

The Agency Preferred Alternative on federal lands is the alternative route the BLM, in coordination with the cooperating agencies, believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. U.S. Department of the Interior regulations at 43 CFR 46.20(d) allow the responsible official to render a decision on a Proposed Action as long as it is within the range of alternative routes discussed in the relevant environmental document. The decision of the responsible official(s) may combine alternative routes discussed, in the relevant environmental document, if the effects of such combined elements of alternative routes are reasonably apparent from the analysis. The Agency Preferred Alternative for this Project is the combination of Alternatives WYCO-B and COUT-C.

The Agency Preferred Alternative was identified by the BLM in coordination with the USFS and other cooperating agencies using criteria-based key resource concerns and issues, regulation and policy, and Council on Environmental Quality regulations for determining significance. The criteria used include the following:

- Maximizes use of existing designated utility corridors by locating within the corridors or paralleling existing linear utility rights-of-way.
- Avoids or minimizes impacts on resources that are regulated by law, after consideration of project design features and agency best management practices. This includes impacts on greater sage-grouse.
- Avoids or minimizes impacts on resource that demonstrate potentially unavoidable adverse impacts after consideration of Project design features for environmental protection and selective mitigation measures, even though those resources may not be regulated by law.
- Minimizes the need for plan amendments through conformance to land use plans.
- Avoids or minimizes proximity to private residences and residential areas, thereby addressing concerns with public health and safety, aesthetics, visual effects, and others.
- Minimizes use of private lands, assuming natural resource impacts are more or less similar.

If multiple alternatives meet the preceding criteria, the Agency Preferred Alternative would be the alternative that minimizes technical constraints, construction, operation, and maintenance expense and/or time.

Alternative WYCO-B exits the Aeolus Substation in the utility corridor designated by the Wyoming Executive Order 2011-5 for protection of sage-grouse, continuing to the southwest where it crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 57 miles. The alternative route then parallels Wamsutter Road (on the east side of the road) south for approximately 15 miles. At that point, the alternative route continues southwest crossing Flat Top Mountain and continues toward the Wyoming and Colorado border, approximately 22 miles west of Baggs, Wyoming.

The alternative route continues south/southwest into Colorado through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south

crossing the Yampa River 5 miles northeast of Cross Mountain Gorge to a point near U.S. Highway 40 approximately 12 miles southwest of Maybell. At that point, the alternative route parallels U.S. Highway 40 for approximately 3 miles before continuing west to avoid crossing the Tuttle Ranch Conservation Easement and to minimize crossing of the Cross Mountain Conservation Easement. The Deerlodge Road entrance to Dinosaur National Monument crosses a state of Colorado parcel before continuing southwest to parallel the Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines for approximately 22 miles south of U.S. Highway 40. The route terminates at a point approximately 22 miles east of Dinosaur, Colorado, and crosses 1.8 miles of the Cross Mountain Ranch Conservation Easement.

From this point, the alternative route continue to parallel the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado/Utah border. This alternative route continues to follow the Bears Ears to Bonanza 345kV transmission line southwest toward the Bonanza Power Plant. The alternative route then continues west/southwest following an underground pipeline through an area where the Uinta Basin hookless cactus and clay reed-mustard occurs (federally listed plant species) and crossing the Green River and a suitable Lower Green River wild and scenic segment and Lower Green River ACEC in an administratively designated utility corridor approximately 8 miles north of Sand Wash boat launch, continuing west towards the western end of the Tavaputs Plateau. In the plateau, it traverses through Argyle Ridge (an area of summer home development) for approximately 12 miles dropping southwest toward U.S. Highway 191, following the highway through Indian Canyon for approximately 2 miles; it then crosses the highway heading west/northwest into the Emma Park area (approximately 11 miles north of Helper, Utah) toward Soldier Summit for a distance of approximately 21 miles avoiding sage-grouse leks/habitat to the south and the Reservation Ridge Scenic Backway (designated by the Forest Service) to the north.

It continues west toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. It continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, turning south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative route continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Applicant's Preferred Alternative

Alternatives WYCO-B and COUT-C represent the Applicant's Preferred Alternative. Alternatives WYCO-B and COUT-C were selected by the Applicant based on a combination of several factors, including system planning and reliability, engineering feasibility and constructability, costs, safety, and landowner concerns. Prior to the BLM's scoping meetings, the Applicant conducted meetings with landowners along the alternative routes, the results of which identified areas of landowner concerns. The Applicant avoided more densely populated areas when possible. Additionally, the Applicant is a public utility and capitalizes costs through its customers' rate base; therefore, the Applicant strives to keep costs and the resultant impacts of new infrastructure as low as practicable for the rate payers. Through system planning and engineering studies, the Applicant considered engineering feasibility and constructability in respect to terrain and geologic hazards, which also is related to costs that would be passed onto the customer base. A criterion for siting the alternative routes was to parallel existing linear facilities to the extent practicable; however, the Applicant also had to consider the route in relation to other high-voltage transmission lines and the effect it might have on reliability. Choosing a route that has fewer high-voltage transmission lines or lines that do not share common interconnection points on the power grid improves overall reliability.

Consultation and Coordination

Agencies and organizations having jurisdiction and/or specific interest in the Project were contacted at the beginning of scoping, during the resource inventory, and prior to the publication of the EIS to inform them of the Project, verify the status and availability of existing environmental data, request data and comments, and solicit their input about the Project. Additional contacts were made throughout the process to clarify information or update data. All conversations with agency personnel have been documented, distributed to the appropriate Project personnel, and maintained in the Project administrative record. Specific concerns and recommendations have been discussed and documented for further action.

Early Agency Coordination

As mentioned previously, the Applicant submitted the original application for right-of-way on federal land on November 28, 2007. Most of the federal land crossed by the alternative routes is administered by the BLM; therefore, the BLM was designated the lead agency responsible for preparing the EIS and LUPAs and other documentation in compliance with federal laws, regulations, or policies.

The following year, the Applicant revised the description of the Project and preliminary alternative routes, and submitted to the BLM a revised right-of-way application on December 17, 2008. In early 2009, the BLM Project Manager arranged meetings in February and March with each of the BLM district and field offices as well as the national forests that could be affected by the Project. The purpose of these meetings was to introduce the Project; discuss the process and schedule for preparing the EIS and other environmental documentation; discuss the preliminary alternative routes to be analyzed; and to discuss potential resource conflicts, potential issues, and data needs.

Follow-up working sessions were conducted early in and ongoing throughout the NEPA process to discuss the alternative routes, adjustments to the alternative routes, and potential issues in more detail. These working sessions are listed in Table S-2.

TABLE S-2
LIST OF AGENCY WORK SESSIONS

Date	Agencies	
June 2009	▪ Bureau of Land Management (BLM) Wyoming State Office ▪ BLM Little Snake Field Office	▪ Colorado State Land Board ▪ Colorado Division of Wildlife, Moffat County
September 2009	▪ BLM Wyoming State Office ▪ BLM Price Field Office	▪ Rocky Mountain Power ▪ TransWest Express, LLC
April 2010	▪ BLM Wyoming State Office ▪ BLM Price Field Office ▪ U.S. Forest Service	▪ U.S. Army Corps of Engineers ▪ Utah Public Lands Policy Coordination Office ▪ Rocky Mountain Power
July 2010	▪ BLM Wyoming State Office ▪ BLM Rawlins Field Office ▪ BLM Rock Springs Field Office ▪ BLM Little Snake Field Office ▪ Wyoming Governor's Office ▪ U.S. Fish and Wildlife Service	▪ Wyoming Game and Fish Department ▪ Carbon County ▪ Little Snake River Conservation District ▪ Saratoga-Encampment-Rawlins Conservation District ▪ Rocky Mountain Power
October 2011	▪ BLM Wyoming State Office ▪ BLM Price Field Office	▪ Emery County
December 2011	▪ BLM Wyoming State Office ▪ BLM Price Field Office	▪ Emery County

TABLE S-2 LIST OF AGENCY WORK SESSIONS		
Date	**Agencies**	
July 2012	▪ BLM Wyoming State Office ▪ BLM Price Field Office ▪ BLM Richfield Field Office ▪ BLM Vernal Field Office ▪ Ashley National Forest ▪ Dixie National Forest	▪ Manti – La Sal National Forest ▪ Uinta-Wasatch-Cache National Forest ▪ Utah Division of Wildlife Resources ▪ Carbon County ▪ Sanpete County ▪ Duchesne County
August 2012	▪ BLM Wyoming State Office ▪ Dixie National Forest	▪ Uinta-Wasatch-Cache National Forest
November 2012	▪ BLM Wyoming State Office ▪ Utah Reclamation Mitigation and Conservation Commission	▪ U.S. Bureau of Reclamation ▪ Central Utah Water Conservation District
December 2012	▪ BLM Wyoming State Office ▪ BLM Northwest District Office ▪ BLM Little Snake Field Office	▪ National Park Service ▪ Colorado Parks and Wildlife
June 2013	▪ BLM Wyoming State Office	▪ BLM Rawlins Field Office
December 2013	▪ BLM Wyoming State Office ▪ BLM Utah State Office	▪ BLM Vernal Field Office ▪ BLM National Transmission Support Team

Cooperating Agencies

In late May and June 2009, the BLM sent formal letters inviting all agencies and tribes whose jurisdiction and/or expertise are relevant to the Proposed Action to participate as cooperating agencies in the preparation of the EIS. Those agencies that accepted the invitation to participate as cooperating agencies are listed below.

Federal

- Department of Agriculture
  - Forest Service, Intermountain Region
- Department of Defense
  - Army Corps of Engineers, South Pacific Division
  - Army Environmental Center
  - Navy Region Southwest
- Department of the Interior
  - Bureau of Indian Affairs, Western Region
  - Fish and Wildlife Service, Mountain-Prairie Region
  - National Park Service
- Utah Reclamation Mitigation and Conservation Commission

States

- Wyoming
- Utah
- Colorado

Counties

- Wyoming
  - Carbon County
  - Sweetwater County

- Colorado
  - Mesa County
  - Moffat County
  - Rio Blanco County
- Utah
  - Carbon County
  - Duchesne County
  - Emery County
  - Grand County
  - Juab County
  - Sanpete County
  - Uintah County
  - Wasatch County

Wyoming Conservation Districts

- Little Snake River
- Medicine Bow
- Saratoga-Encampment-Rawlins
- Sweetwater County

The BLM established an Agency Interdisciplinary Team, including all cooperating agencies, that meets once or twice each month to discuss the status of the Project and any issues needing agency input. Also, to date, the Agency Interdisciplinary Team has assembled for workshops at four key milestones of the process.

In addition, the BLM formed three subgroups of the Agency Interdisciplinary Team: the Biological Resources Task Group (BRTG), Cultural Resources Task Group, and Visual Resources Task Group. The purpose of these task groups is to address specific issues associated with, and needing to be addressed in, the EIS and through consultations. The task groups meet at least once each month.

Biological Resources

Under the provisions of Section 7(a)(2) of the Endangered Species Act (ESA), a federal agency that carries out, permits, licenses, funds, or otherwise authorizes an activity must ensure that the action is not likely to jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of designated critical habitat. Informal consultation for the Project with the FWS began with the submittal of written correspondence to the FWS from the BLM on July 23, 27, and 30, 2009. At the direction of the FWS, the BLM obtained lists of federally threatened, endangered, and candidate species with the potential to occur in the Project area from the FWS. The species lists have been updated as new lists become available to reflect the current listing status of all federally listed, proposed, and candidate species occurring in and potentially affected by the Project.

Informal consultation among the BLM and cooperating agencies, including the FWS, has continued throughout the development of the EIS including meetings, conference calls, letters, and other correspondence. In early 2010, the BLM established the BRTG composed of the biologists from the BLM, USFS, FWS, and the state wildlife agencies. The group meets via conference call once a month to discuss the status of the Project, issues, and approach to addressing key biological resource issues.

In early 2011, the FWS, BLM, USFS, BIA, and U.S. Army Corps of Engineers (federal agencies with the authority and responsibility to perform certain actions associated with the Project) entered into a Consultation Agreement. Additional federal agencies signed the Agreement in 2013 (i.e., URMCC, NPS). The Agreement addresses interagency coordination for the affirmative conservation and recovery of listed

species under Section 7(a)(1) of the ESA. Section 7(a)(1) directs all federal agencies to use their authorities in furtherance of the purposes of the ESA by "carrying out programs for the conservation and recovery of listed species." Pursuant to Section 7 (a)(1), the Agreement clarifies agency roles during consultation under Section 7(a)(2) for the direct, indirect, and cumulative effects of the Proposed Action on listed species, species proposed for listing, and their associated designated or proposed critical habitat. In coordination with appropriate state natural-resource management agencies that have trust authority for unlisted species, the Agreement also speaks to interagency coordination for the conservation of, and assessment of effects on, candidate species that may be affected by the Proposed Action.

Pursuant to Section 7(c)(1) of the ESA, the BLM, in cooperation with the appropriate cooperating agencies, prepared a Biological Assessment to initiate formal consultation with the FWS and fulfill agency obligations under Section 7(a)(2) of the Act for the Agency Preferred Alternative. A draft Biological Assessment was prepared in coordination with the BRTG and provided to FWS and cooperating agencies for a courtesy review in early January 2015. The draft Biological Assessment was updated based on agency comments and coordination from February to May 2015. The final Biological Assessment was submitted to FWS in July 2015 and is available for review on the BLM website for the Project. The BLM worked collaboratively with the FWS to ensure that the FWS had an appropriate amount of time to review the information contained in the Biological Assessment and prepare a Biological Opinion prior to completion of a ROD or irreversible or irretrievable commitment of resources by any agency. The Biological Opinion will be included with BLM's Record of Decision.

Additionally, the Applicant has convened a group of sage-grouse biologists from the BLM and cooperating agencies (the HEA Technical Working Group) to provide input and guidance during the development of the Applicant's Sage-grouse Mitigation Plan, including the HEA. The agency biologists work closely with the Applicant to ensure adequacy of the mitigation analysis and corresponding final product, as well as addressing concerns and questions, developing assumptions for the analysis, and resolving issues as they arise. The HEA Technical Working Group meets as needed during development of the Sage-grouse Mitigation Plan and HEA.

The *Conservation Plan for Greater Sage-grouse in Utah* was approved by the governor of Utah in 2013. The plan establishes incentive-based conservation programs for conservation of sage-grouse on private, local government, and SITLA land and regulatory programs on other state and federally managed lands. The conservation plan also establishes sage-grouse management areas and implements specific management protocols in these areas. The BLM has coordinated with the state regarding the consistency of the Project with the management provisions for transmission corridors included in the *Conservation Plan for Greater Sage-grouse in Utah*. BLM will continue to coordinate with the state regarding consistency of the Applicant's Sage-grouse Mitigation Plan with additional mitigation that may be required in the *Conservation Plan for Greater Sage-grouse in Utah.*

Cultural Resources

Section 106 (54 U.S.C. 306108) of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of actions on historic properties (cultural resources that are either eligible for or listed in the NRHP). Regulations for the implementation of Section 106 are defined in 36 CFR Part 800 – Protection of Historic Properties. These regulations define how federal agencies meet their statutory responsibilities as required under the law. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties (36 CFR 800.1). These parties include the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Offices (SHPOs), American Indian tribes, Tribal Historic Preservation Officers, state and other federal agencies, and individuals or organizations with a demonstrated interest in

the undertaking due to their legal or economic relation to the undertaking or affected properties, or their concern with the effects of undertakings on historic properties (36 CFR 800.2).

As lead federal agency for compliance with Section 106 of the NHPA, the BLM initiated Section 106 consultation with the SHPOs, Utah Governor's Public Lands Policy Coordination Office, School and Institutional Trust Lands Administration (SITLA), USFS, NPS, and ACHP pursuant to 36 CFR Part 800.6 and 800.14(b) of the ACHP regulations implementing Section 106 of the NHPA in April 2010. The Section 106 process is separate from, but often conducted parallel with, the preparation of an EIS. Consultation under Section 106 of the NHPA is ongoing and will continue during post-EIS phases of Project implementation.

The BLM in consultation with the Wyoming, Colorado, and Utah SHPOs agreed to develop a Programmatic Agreement among the various state and federal agencies and consulting parties with an interest in the Project. A Programmatic Agreement outlines the stipulations that will be followed concerning the identification, assessment, and treatment of cultural resources for the Project in accordance with 36 CFR 800.15(b). Signatories agree that the Project will be administered in accordance with stipulations and measures set forth in the Programmatic Agreement. To date, the signatory parties include the BLM, USFS, NPS, USBR, U.S. Army Corps of Engineers, BIA, and three SHPOs. The ACHP declined to participate. Invited parties include the Applicant, the Ute Indian Tribe, SITLA, Utah Department of Transportation, and the URMCC. Concurring parties include the following:

- Alliance for Historic Wyoming
- Mesa County, Colorado
- Milford Archaeological Research Institute
- Moffat County, Colorado
- National Trust for Historic Preservation
- Old Spanish Trail Association
- Oregon-California Trails Association
- Overland Trail Cattle Company
- Tracks Across Wyoming
- Utah Public Lands Policy Coordination Office
- Utah Professional Archaeological Council
- Utah Rock Art Research Association
- Utah Statewide Archaeology Society
- Confederated Tribes of the Goshute Reservation
- Eastern Shoshone Tribe of the Wind River Reservation
- Hopi Tribe
- Jicarilla Apache Tribe
- Navajo Nation
- Northern Arapaho Tribe of the Wind River Reservation
- Northwestern Band of Shoshone Nation
- Paiute Indian Tribe of Utah
- Pueblo of Acoma
- Pueblo of Cochiti
- Pueblo of Isleta
- Pueblo of Jemez
- Pueblo of Laguna
- Pueblo of Nambe
- Pueblo of Picuris
- Pueblo of Pojoaque
- Pueblo of San Felipe

- Pueblo of San Ildefonso
- Pueblo of San Juan
- Pueblo of Sandia
- Pueblo of Santa Ana
- Pueblo of Santa Clara
- Pueblo of Santo Domingo
- Pueblo of Taos
- Pueblo of Tesuque
- Pueblo of Zia
- Pueblo of Zuni
- San Juan Southern Paiute Tribe
- Shoshone-Bannock Tribes of the Fort Hall Reservation
- Skull Valley Band of Goshute Indians of Utah
- Southern Ute Indian Tribe of the Southern Ute Reservation
- Ute Mountain Ute Tribe of the Ute Mountain Reservation.

Through the development of a Programmatic Agreement, the BLM and cooperating agencies will outline a phased approach to fulfill the four requirements of Section 106: initiate consultation, identify historic properties, assess adverse effects, and resolve adverse effects. The first step (initiate consultation) requires the BLM to establish the undertaking, identify the appropriate SHPO(s) or Tribal Historic Preservation Office, plan to involve the public, and identify other consulting parties. This step is generally scheduled concurrently with the NEPA scoping efforts. The second step (identify historic properties) requires BLM to determine the scope of the efforts (e.g., the methodologies for each type of cultural resource study, the Project area of potential effects for each study), identify historic properties (Class III intensive pedestrian inventories), and evaluate historic significance (i.e., apply the four NRHP criteria). During the third step, BLM assesses adverse effects on historic properties identified during the previous step. The second and third steps parallel the NEPA processes of drafting the EIS, conducting public hearings/workshops, and finalizing the EIS. The final step in the Section 106 process is the resolution of adverse effects, which will be documented in the Historic Properties Treatment Plan. The Programmatic Agreement will be complete prior to issuance of the ROD; however, stipulations may need to be included in the right-of-way grant requiring completion of agency-approved treatment of historic properties identified by agency archaeologists as needing further investigation before any Project-related ground-disturbing activities commence in the vicinity of the historic properties. If stipulations are included in the right-of-way grant, the Authorized Officer would issue a Notice to Proceed upon satisfactory completion and approval of each investigation described in the stipulation.

Government-to-Government Tribal Consultation

The United States has a unique legal relationship with American Indian tribal governments as set forth in the Constitution of the United States, treaties, Executive Orders (e.g., Executive Order 13175), federal statutes, federal policy, and tribal requirements, which establish the interaction that must take place between federal and tribal governments. An important basis for this relationship is the trust responsibility of the United States to protect tribal sovereignty, self-determination, tribal lands, tribal assets and resources, and treaty and other federally recognized and reserved rights. Government-to-government consultation is the process of seeking, discussing, and considering views on policy, and/or, in the case of this Project, environmental and cultural resource management issues. As part of the BLM's on-going government-to-government consultation, tribal officials were informed of the Project and those who expressed interest in the Project will be updated periodically on the status of the Project through the completion of the NEPA process. For efficiency, government-to-government consultation activities often are combined with Section 106 tribal consultation activities. The BIA, a fiduciary for the administration and management of surface land and subsurface minerals estate held in trust by the United States for

American Indian tribes and individual Indians, is a cooperating agency involved in the preparation of the EIS and would authorize, with the approving consent of the Ute Indian Tribe, any easements over lands held in trust from the Ute Indian Tribe of the Uintah and Ouray Indian Reservation.

Pursuant to 36 CFR Part 800.2, the lead federal agency must consult with American Indian tribes that attach religious and cultural significance to historic properties that may be affected by an undertaking. This requirement applies regardless of the location of the historic property. In such cases, the federal agency must notify American Indian tribes potentially affected by the undertaking and give those American Indian tribes the opportunity to participate in the Project as a concurring party should they wish to do so.

Early in the NEPA process, BLM initiated contact with 33 American Indian tribes in accordance with various environmental laws and Executive Orders[6]. As part of scoping, the BLM mailed letters, dated April 2011, to the American Indian tribes that may have an interest in the Project area to inform them of and determine their interest in the Project. The BLM received responses from four tribes.

Results of the consultation efforts to date are documented in the Project administrative record.

The current status of tribal participation is summarized below.

- Thirty-three American Indian tribes have been contacted.
- Four American Indian tribes (Eastern Shoshone Tribe of the Wind River Reservation, Hopi Tribe, Pueblo of Santa Clara, and Ute Mountain Ute Tribe of the Ute Mountain Ute Reservation) have requested consultations and have been included in the development of the Programmatic Agreement as consulting parties.
- As of the date of this Final EIS, the majority of the tribes contacted have not responded to the BLM's invitation to participate in the development of the Programmatic Agreement as concurring parties.
- One American Indian tribe, the Confederate Tribes of the Goshute Indian Reservations, has deferred to the Ute Indian Tribe of the Uintah and Ouray Reservation to represent their interests and concerns regarding the Project during consultation with the BLM.
- Twenty-four American Indian tribes were invited to attend a meeting with consulting parties conducted by the BLM to discuss the Programmatic Agreement. The BLM receive no responses from the other tribes.
- One tribe, the Pueblo of Santa Ana, sent an email to the BLM stating they have no connections to the areas involved on the Project and wished to receive no further communications.

To date, the BLM has received no substantive comments from the American Indian tribes contacted.

Scoping Process

The Council on Environmental Quality regulations for implementing the NEPA direct that, to the fullest extent possible, federal agencies must encourage and facilitate public involvement in decisions that affect the quality of the human environment and involve the public early on and throughout the process (40 CFR 1506.6). In response, the BLM prepared a public involvement plan as part of the EIS Preparation

[6] NEPA; NHPA, as amended; American Indian Religious Freedom Act of 1978; Native American Graves Protection and Repatriation Act of 1990 , as amended; FLPMA, Archaeological Resources Protection Act of 1979; Executive Order 11593 – Protection and Enhancement of the Cultural Environment; Executive Order 12898 – Environmental Justice; Executive Order 13007 – Indian Sacred Sites; Executive Order 13175 – Consultation and Coordination with Indian tribal Governments

Plan early in the NEPA process. The purpose of the plan is to serve as a guide for conducting public involvement activities integrated with the NEPA process.

The first opportunity for the public to be involved in the Project was scoping. The purpose of scoping was to identify the range, or scope, of issues early in the NEPA process that should be addressed in the EIS. As mentioned previously, a NOI was published in the *Federal Register* on April 1, 2011, announcing preparation of the EIS and possible LUPAs as well as announcing the opportunity for the public to participate in the process and provide input. Publication of the NOI on April 1, 2011, initiated the formal scoping period, which ended on June 30, 2011, a period of 90 days. During this period, 12 open-house meetings were held (May and early June 2011), in locations along the alternative routes, to inform the public about the Project and NEPA process and to solicit input on the Project and potential issues.

Written comments were accepted by the BLM in letters or comment forms at the scoping meetings, by email, and by U.S. mail. All comments received were analyzed and assisted in defining the issues to be analyzed for the EIS. A more detailed description of the scoping process, comments received, and results is presented in the *Energy Gateway South 500kV Transmission Line Project EIS Scoping Report* (BLM 2011a), which is available for review on the BLM Project website (http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html).

Public Review of the Environmental Impact Statement and Land-use Plan Amendments

The BLM and USFS each published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on February 21, 2014. The Environmental Protection Agency (EPA) also published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on the same day, which initiated a 90-day public comment period. Approximately 29 paper copies and 194 electronic copies of the Draft EIS were distributed in February 2014 to federal agencies; tribal, state, and local governments; organizations; and individuals. The availability of the Draft EIS; deadline for public comments; and locations, dates, and times of public meetings on the Draft EIS were announced in paid newspaper notices, media releases, and a newsletter that was mailed to all parties on the Project mailing list, including potentially affected property owners, agencies, stakeholders and other interested parties. During the comment period, BLM held 12 public meetings to provide information and solicit public comments on the Draft EIS (Table S-3). A total of 279 people attended the public open houses.

TABLE S-3
PUBLIC MEETINGS AND ATTENDANCE

Meeting Location and Date	Total Attendance	Meeting Location and Date	Total Attendance
Grand Junction, Colorado March 10, 2014	5	Mount Pleasant, Utah March 19, 2014	23
Vernal, Utah March 11, 2014	12	Nephi, Utah March 20, 2014	27
Fort Duchesne, Utah March 12, 2014	14	Rangely, Colorado March 31, 2014	4
Roosevelt, Utah March 13, 2014	11	Craig, Colorado April 1, 2014	22
Green River, Utah March 17, 2014	8	Baggs, Wyoming April 2, 2014	34
Price, Utah March 18, 2014	81	Rawlins, Wyoming April 3, 2014	38

The comment period ended on May 22, 2014. BLM received 603 submittals containing comments from federal, state, and local agencies; public and private organizations; and individuals, of which 301 were one version of a form letter and 126 were a form postcard. The comments in each submittal were identified, recorded, and analyzed. Responses were prepared for all substantive comments. The comments received and responses to the substantive comments are provided in Appendix P.

Applicant-initiated Activities

In January 2009, the Applicant began briefing community leaders on the Project, which has continued periodically throughout the Project. In the fall of 2009, the Applicant also initiated meetings with counties and cities that require conditional use permits or general plan amendments.

In March and April 2011, the Applicant hosted 11 meetings in the Project area, to which the landowners within a 2-mile-wide corridor along the alternative routes were invited. The purpose of the landowner meetings was to introduce the Project, answer questions the landowners may have, and to encourage participation in the BLM's scoping meetings for the EIS.

In late Summer 2012, the Applicant convened four community working groups; the members of which represent diverse interests in the Project area. The purpose of the community working groups is to establish groups representing a range of opinions in a forum allowing exchange of information, discussion of issues, and informal dialogue. The community working groups include representatives of federal, state, county, and municipal government agencies; agriculture; real estate and/or land development; special-interest groups, business interests; and landowners and citizens on behalf of their communities. The first meetings of the community working groups were conducted in September 2012. Issues raised by the community working groups were communicated to the BLM by the Applicant and are addressed in the EIS.

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)					
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	**Inventory** ▪ Emission summary: • CO: 100.3 tons (conventional steel erection), 87.7 tons (helicopter steel erection) • NO_x: 102.4 tons (conventional steel erection), 90.7 tons (helicopter steel erection) • PM_{10}: 8,271.4 tons (conventional steel erection), 8,113.3 tons (helicopter steel erection) • $PM_{2.5}$: 837.8 tons (conventional steel erection), 821.2 tons (helicopter steel erection) • SO_2: 1.0 tons (conventional steel erection), 1.2 tons (helicopter steel erection) • VOC: 11.1 tons (conventional steel erection), 11.0 tons (helicopter steel erection) • CO_2e: 24,166.8 tons (conventional steel erection), 22,155.2 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 0.2 miles of areas with potential mine subsidence in the Hanna, Wyoming, area ▪ 6.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages; ▪ 0 miles of areas with high landslide susceptibility and 20.2 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.5 mile of soils highly susceptible to water erosion ▪ 2.0 miles of soils highly susceptible to wind erosion ▪ 6.4 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 82.0 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources and soil resources anticipated	**Inventory** Crosses: ▪ High and very high PFYC formations ▪ 1.8 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 110.7 miles of high and very high PFYC formations and 76.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 54 percent of route crosses high and very high PFYC formations and 37 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 1 outstanding water ▪ 1 impaired waters ▪ 3 palustrine emergent wetlands ▪ 47 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 4 perennial streams and rivers ▪ 356 intermittent streams ▪ 1 ephemeral stream or wash ▪ 3 canals/ditches ▪ 1 well/spring **Impacts** ▪ Potential for disturbance to highly erodible, high salinity soils from surface-disturbing activities in the Upper North Platte, Muddy, Little Snake, and Lower White subbasins; could result in some mobilization and transfer of sodium and phosphorus rich soils into the North Platte River, Muddy Creek, Red Creek, Little Snake, Yampa, and White rivers ▪ Potential for impacts on water quality from surface-disturbing activities in proximity to impaired or outstanding waters and wetlands ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in and around Hanna, Wyoming ▪ With mitigation, 74.4 miles of low residual impacts and 0.7 mile of moderate residual impacts on water resources anticipated
WYCO-C	210.0	**Inventory** ▪ Emission summary: • CO: 103.2 tons (conventional steel erection), 90.2 tons (helicopter steel erection) • NO_x: 105.4 tons (conventional steel erection), 93.3 tons (helicopter steel erection) • PM_{10}: 8,508.2 tons (conventional steel erection), 8,345.6 tons (helicopter steel erection) • $PM_{2.5}$: 861.9 tons (conventional steel erection), 844.8 tons (helicopter steel erection) • SO_2: 1.1 tons (conventional steel erection), 1.3 tons (helicopter steel erection) • VOC: 11.4 tons (conventional steel erection), 11.3 tons (helicopter steel erection) • CO_2e: 24,864.0 tons (conventional steel erection), 22,794.4 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 0.2 miles of areas with potential mine subsidence in the Hanna, Wyoming, area ▪ 6.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 mile of areas with high landslide susceptibility and 20.0 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.5 mile of soils highly susceptible to water erosion ▪ 2.0 mile of soils highly susceptible to wind erosion ▪ 6.4 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 83.1 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, only low impacts on the Project and on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ High and very high PFYC formations ▪ 1.8 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 115.2 miles of high and very high PFYC formations and 75.9 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 55 percent of WYCO-C crosses high and very high PFYC formations and 36 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 1 outstanding water ▪ 1 impaired water ▪ 4 palustrine emergent wetlands ▪ 43 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 4 perennial streams ▪ 383 intermittent streams ▪ 2 ephemeral streams and washes **Impacts** ▪ Potential for disturbance to highly erodible, high salinity soils from surface-disturbing activities in the Upper North Platte, Muddy, Little Snake, and Lower White subbasins; could result in some mobilization and transfer of sodium and phosphorus rich soils into the North Platte River, Muddy Creek, Red Creek, Little Snake, Yampa, and White rivers ▪ Potential for impacts on water quality from surface-disturbing activities in proximity to impaired or outstanding waters and wetlands ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in and around Hanna, Wyoming ▪ With mitigation, 76.0 miles of low residual impacts and 1.0 mile of moderate residual impacts on water resources anticipated

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
WYCO-D	249.4	**Inventory** ▪ Emission summary: • CO: 122.6 tons (conventional steel erection), 107.2 tons (helicopter steel erection) • NO_x: 125.2 tons (conventional steel erection), 110.8 tons (helicopter steel erection) • PM_{10}: 10,107.2 tons (conventional steel erection), 9,913.9 tons (helicopter steel erection) • $PM_{2.5}$: 1,023.8 tons (conventional steel erection), 1,003.6 tons (helicopter steel erection) • SO_2: 1.3 tons (conventional steel erection), 1.5 tons (helicopter steel erection) • VOC: 13.5 tons (conventional steel erection), 13.4 tons (helicopter steel erection) • CO_2e: 29,543.7 tons (conventional steel erection), 27,084.6 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 0.8 miles of areas with potential mine subsidence in the Hanna, Wyoming, area ▪ 8.0 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 67.4 miles of areas with moderate landslide susceptibility (the greatest distance of the WYCO routes) *Soil Resources* ▪ 0.8 mile of soils highly susceptible to water erosion ▪ 1.1 miles of soils highly susceptible to wind erosion ▪ 12.8 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 86.1 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, only low impacts on the Project and on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ High and very high PFYC formations ▪ 0 miles of high known locality density, and 1.2 miles of moderate locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 131.8 miles of high and very high PFYC formations and 93.8 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 53 percent of route crosses high and very high PFYC formations and 38 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 1 outstanding water ▪ 8 impaired waters ▪ 2 palustrine emergent wetlands ▪ 68 riparian areas ▪ 10 lake, reservoir, or pond ▪ 28 perennial streams and rivers ▪ 402 intermittent streams ▪ 8 canals/ditches ▪ 5 wells and spring **Impacts** ▪ Potential for discharging sediment into the Muddy Creek if soils become compacted or decompacted from construction, operation, or maintenance activities ▪ Potential for disturbance to highly erodible, high salinity soils from surface-disturbing activities in the Muddy and Little Snake subbasins; could result in some mobilization and transfer of sodium and phosphorus rich soils into the Muddy Creek as well as the tributaries to and main stem of the Little Snake River ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in and around Hanna and Baggs, Wyoming, as well as in Craig, Colorado ▪ With mitigation, 87.0 miles of low residual impacts and 2.7 miles of moderate residual impacts on water resources anticipated
WYCO-F	218.8	**Inventory** ▪ Emission summary: • CO: 107.4 tons (conventional steel erection), 93.9 tons (helicopter steel erection) • NO_x: 109.6 tons (conventional steel erection), 97.0 tons (helicopter steel erection) • PM_{10}: 8,851.2 tons (conventional steel erection), 8,682.0 tons (helicopter steel erection) • $PM_{2.5}$: 896.6 tons (conventional steel erection), 878.9 tons (helicopter steel erection) • SO_2: 1.1 tons (conventional steel erection), 1.3 tons (helicopter steel erection) • VOC: 11.9 tons (conventional steel erection), 11.7 tons (helicopter steel erection) • CO_2e: 25,868.5 tons (conventional steel erection), 23,715.2 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 0.2 miles of areas with potential mine subsidence in the Hanna, Wyoming, area ▪ 6.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 mile of areas with high landslide susceptibility and 20.0 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.5 mile of soils highly susceptible to water erosion ▪ 2.0 miles of soils highly susceptible to wind erosion ▪ 6.4 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 67.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ Crosses high and very high PFYC formations ▪ Crosses 1.8 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline ▪ Same as WYCO-C **Impacts** ▪ Crosses 124.5 miles of high and very high PFYC formations and 76.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 57 percent of route crosses high and very high PFYC formations and 35 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 1 outstanding water ▪ 1 impaired water ▪ 2 palustrine emergent wetlands ▪ 52 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 4 perennial streams and rivers ▪ 384 intermittent streams ▪ 1 canals/ditches ▪ 3 ephemeral stream/wash **Impacts** ▪ Potential for disturbance to highly erodible, high salinity soils from surface-disturbing activities in the Muddy and Little Snake subbasins; could result in some mobilization and transfer of sodium and phosphorus rich soils into Red Creek, Sand Creek, various tributaries to and the main stem of the Little Snake River ▪ Potential for impacts on water quality from surface-disturbing activities in proximity to impaired or outstanding waters and wetlands ▪ Construction-related disturbance could potentially increase erosion and sedimentation in subbasins above municipalities in and around Hanna and Baggs, Wyoming ▪ With mitigation, 76.1 miles of low residual impacts and 0.9 mile of moderate residual impacts on water resources anticipated

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)					
COUT BAX-B	279.9	**Inventory** ▪ Emission summary: • CO: 256.8 tons (conventional steel erection), 248.4 tons (helicopter steel erection) • NO_x: 166.3 tons (conventional steel erection), 159.0 tons (helicopter steel erection) • PM_{10}: 11,324.3 tons (conventional steel erection), 11,109.0 tons (helicopter steel erection) • $PM_{2.5}$: 1,150.3 tons (conventional steel erection), 1,128.1 tons (helicopter steel erection) • SO_2: 1.5 tons (conventional steel erection), 1.8 tons (helicopter steel erection) • VOC: 25.9 tons (conventional steel erection), 26.4 tons (helicopter steel erection) • CO_2e: 39,922.3 tons (conventional steel erection), 37,624.3 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 8.2 miles from transmission line (Arches National Park) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 1.6 miles of areas with potential mine subsidence ▪ 1.5 miles of Quaternary faults ▪ 20.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 142.3 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.6 mile of soils highly susceptible to water erosion ▪ 1.6 miles of soils highly susceptible to wind erosion ▪ 10.2 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 165.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 21.9 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ High and very high PFYC formations ▪ 2.3 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 88.8 miles of high and very high PFYC formations and 122.9 miles of moderate/undetermined PFYC formations requiring mitigation in Colorado and Utah ▪ 32 percent of route crosses high and very high PFYC formations and 44 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 30 outstanding waters ▪ 170 impaired waters ▪ 6 palustrine emergent wetlands ▪ 2 palustrine scrub/shrub wetlands ▪ 23 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 55 perennial streams and rivers ▪ 534 intermittent streams ▪ 5 canals/ditches ▪ 3 wells/springs **Impacts** ▪ Potential for higher sediment and salt loads in perennial streams from steep slopes and fragile soils in the Lower White subbasins ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in Rangely and Grand Junction, Colorado, as well as Orangeville, Castle Dale, Mount Pleasant, Fountain Green, and Nephi, Utah ▪ Potential for impacts on tributaries of outstanding waters in Utah such as erosion and sedimentation ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality ▪ With mitigation, 95.6 miles of low residual impacts and 4.8 miles of moderate residual impacts on water resources anticipated
COUT BAX-C	290.4	**Inventory** ▪ Emission summary: • CO: 266.5 tons (conventional steel erection), 257.7 tons (helicopter steel erection) • NO_x: 172.6 tons (conventional steel erection), 165.0 tons (helicopter steel erection) • PM_{10}: 11,743.0 tons (conventional steel erection), 11,519.5 tons (helicopter steel erection) • $PM_{2.5}$: 1,192.8 tons (conventional steel erection), 1,169.8 tons (helicopter steel erection) • SO_2: 1.6 tons (conventional steel erection), 1.9 tons (helicopter steel erection) • VOC: 26.9 tons (conventional steel erection), 27.4 tons (helicopter steel erection) • CO_2e: 41,423.7 tons (conventional steel erection), 39,039.3 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 8.2 miles from transmission line (Arches National Park) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 1.3 miles of areas with potential mine subsidence ▪ 1.5 miles of Quaternary faults ▪ 15.9 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 137.2 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.6 mile of soils highly susceptible to water erosion ▪ 1.0 mile of soils highly susceptible to wind erosion ▪ 10.2 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 169.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation17.4 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ Crosses high and very high PFYC formations ▪ Crosses 2.3 miles of moderate known locality density within 1.0 mile of the centerline ▪ Same as COUT BAX-B **Impacts** ▪ Crosses 90.1 miles of high and very high PFYC formations and 130.8 miles of moderate/undetermined PFYC formations requiring mitigation in Colorado and Utah ▪ 31 percent of route crosses high and very high PFYC formations and 45 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 30 outstanding waters ▪ 170 impaired waters ▪ 6 palustrine emergent wetlands ▪ 2 palustrine scrub/shrub wetlands ▪ 24 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 55 perennial streams and rivers ▪ 539 intermittent streams ▪ 6 canals/ditches ▪ 2 wells/springs **Impacts** ▪ Potential for higher sediment and salt loads in perennial streams from steep slopes and fragile soils in the Lower White subbasins ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in Rangely and Grand Junction, Colorado, as well as Orangeville, Castle Dale, Mount Pleasant, Fountain Green, and Nephi, Utah ▪ Potential for impacts on tributaries of outstanding waters in Utah such as erosion and sedimentation ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality ▪ With mitigation, 97.7 miles of low residual impacts and 4.8 miles of moderate residual impacts on water resources anticipated

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
COUT BAX-E	292.2	**Inventory** ▪ Emission summary: • CO: 268.1 tons (conventional steel erection), 259.3 tons (helicopter steel erection) • NO_x: 173.7 tons (conventional steel erection), 166.0 tons (helicopter steel erection) • PM_{10}: 11,803.0 tons (conventional steel erection), 11,578.2 tons (helicopter steel erection) • $PM_{2.5}$: 1,198.9 tons (conventional steel erection), 1,175.8 tons (helicopter steel erection) • SO_2: 1.6 tons (conventional steel erection), 1.9 tons (helicopter steel erection) • VOC: 27.0 tons (conventional steel erection), 27.6 tons (helicopter steel erection) • CO_2e: 41,681.1 tons (conventional steel erection), 39,281.8 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 8.2 miles from transmission line (Arches National Park) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ 3.9 miles of areas with potential mine subsidence ▪ 1.8 miles of Quaternary faults ▪ 15.3 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 124.1 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.6 mile of soils highly susceptible to water erosion ▪ 11.6 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 174.4miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 17.1 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts and on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ Crosses high and very high PFYC formations ▪ Crosses 2.3 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 90.4 miles of high and very high PFYC formations and 137.6 miles of moderate/undetermined PFYC formations requiring mitigation in Colorado and Utah ▪ 31 percent of route crosses high and very high PFYC formations and 47 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 24 outstanding waters ▪ 137 impaired waters ▪ 6 palustrine emergent wetlands ▪ 3 palustrine scrub/ shrub wetlands ▪ 21 riparian areas ▪ 4 lakes, reservoirs, and ponds ▪ 65 perennial streams and rivers ▪ 541 intermittent streams ▪ 9 canals/ditches ▪ 2 wells/springs **Impacts** ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in Rangely Colorado, as well as Price, Fairview, Mount Pleasant, Fountain Green, and Nephi, Utah ▪ Potential for erosion, soil compaction/ destabilization, and sedimentation from construction-related surface-disturbing activities ▪ Potential for increased sodium and phosphorous loads into the Colorado River as a result of mobilization of soils in the West Salt Creek drainage, which have a high salinity ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality ▪ With mitigation, 104.0 miles of low residual impacts and 5.8 miles of moderate residual impacts on water resources anticipated
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)					
COUT-A	207.9	**Inventory** ▪ Emission summary: • CO: 189.5 tons (conventional steel erection), 183.2 tons (helicopter steel erection) • NO_x: 122.7 tons (conventional steel erection), 117.3 tons (helicopter steel erection) • PM_{10}: 8,375.0 tons (conventional steel erection), 8,216.1 tons (helicopter steel erection) • $PM_{2.5}$: 850.7 tons (conventional steel erection), 834.3 tons (helicopter steel erection) • SO_2: 1.1 tons (conventional steel erection), 1.3 tons (helicopter steel erection) • VOC: 19.1 tons (conventional steel erection), 19.5 tons (helicopter steel erection) • CO_2e: 29,455.6 tons (conventional steel erection), 27,760.1 tons (helicopter steel erection) **Impacts** ▪ Crosses 29.5 miles of the Utah County, Utah PM_{10} nonattainment area; modeling, indicates ambient PM_{10} standards should not be violated. ▪ If alternative route selected, a conformity determination would be required ▪ Nearest Class I (pristine) area: 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ Part of the Uinta Basin oil fields ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link U433) ▪ Crosses 0.6 mile of Quaternary faults and 2.5 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, and 27.5 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 7.5 miles of soils highly susceptible to water erosion ▪ 0 mile of soils highly susceptible to wind erosion ▪ 13.1 miles of Prime or Unique Farmland *Mineral Resources* ▪ 0 miles of active mines or producing wells ▪ 77.1 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 3.1 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ High and very high PFYC formations ▪ 1.2 miles of high known locality density and 2.4 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 123.6 miles of high and very high PFYC formations and 16.8 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 59 percent of route crosses high and very high PFYC formations and 8 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 54 outstanding waters ▪ 177 impaired waters ▪ 1 palustrine forested wetland ▪ 40 palustrine emergent wetlands ▪ 7 palustrine scrub/shrub wetlands ▪ 104 riparian areas ▪ 7 lakes, reservoirs, and ponds ▪ 31 perennial streams and rivers ▪ 301 intermittent streams ▪ 5 canals/ditches ▪ 1 well/spring **Impacts** ▪ Potential for some degree of impact on specially designated waters (e.g., forested wetlands, outstanding waters, and impaired waters) from erosion and sedimentation ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in the Coal Oil Basin near Rangely, Colorado; in the Duchesne River Valley, Utah; Roosevelt, Utah; Duchesne, Utah; the White River, Soldier Creek, and Thistle Creek drainages in Utah; as well as the Sanpete and Juab valleys in Utah ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
					▪ With mitigation, 75.3 miles of low residual impacts and 4.6 miles of moderate residual impacts on water resources anticipated
COUT-B	218.2	**Inventory** ▪ Emission summary: • CO: 198.7 tons (conventional steel erection), 192.1 tons (helicopter steel erection) • NO_x: 128.7 tons (conventional steel erection), 123.0 tons (helicopter steel erection) • PM_{10}: 8,778.3 tons (conventional steel erection), 8,611.7 tons (helicopter steel erection) • $PM_{2.5}$: 891.6 tons (conventional steel erection), 874.5 tons (helicopter steel erection) • SO_2: 1.2 tons (conventional steel erection), 1.4 tons (helicopter steel erection) • VOC: 20.0 tons (conventional steel erection), 20.4 tons (helicopter steel erection) • CO_2e: 30,885.4 tons (conventional steel erection), 29,107.6 tons (helicopter steel erection) **Impacts** ▪ Crosses 49.2 miles of the Utah County, Utah PM_{10} nonattainment area; modeling indicates ambient PM_{10} standards should not be violated ▪ If alternative route selected, a conformity determination would be required ▪ Nearest Class I (pristine) area: 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ 0.8 mile of Quaternary faults ▪ 8.7 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 36.1 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 9.4 miles of soils highly susceptible to water erosion ▪ 0 mile of soils highly susceptible to wind ▪ 13.4 miles of Prime or Unique Farmland *Mineral Resources* ▪ Part of the Uinta Basin oil fields ▪ 9.6 miles of active mines or producing wells ▪ 87.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 9.5 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.2 miles of high known locality density and 2.4 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 142.4 miles of high and very high PFYC formations and 16.8 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 65 percent of route crosses high and very high PFYC formations and 8 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 85 outstanding waters ▪ 169 impaired waters ▪ 1 palustrine forested wetland ▪ 40 palustrine emergent wetlands ▪ 18 palustrine scrub/shrub wetlands ▪ 57 riparian areas ▪ 1 swamp/marsh/estuary ▪ 3 lakes, reservoirs, and ponds ▪ 68 perennial streams and rivers ▪ 333 intermittent streams ▪ 8 canals/ditches ▪ 8 wells/springs **Impacts** ▪ Potential for impacts on specially designated waters (e.g., forested wetlands, outstanding waters, and impaired waters) from construction-related surface disturbance; namely through erosion and sedimentation ▪ Potential for substantial short- and long-term effects on multiple perennial streams including Sowers Creek the White River, Thistle Creek, Soldier Creek, and Salt Creek ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality ▪ With mitigation, 76.1 miles of low residual impacts and 9.2 miles of moderate residual impacts on water resources anticipated
COUT-C (Agency and Applicant Preferred Alternative)	208.2	**Inventory** ▪ Emission summary: • CO: 193.0 tons (conventional steel erection), 186.6 tons (helicopter steel erection) • NO_x: 125.0 tons (conventional steel erection), 119.5 tons (helicopter steel erection) • PM_{10}: 8,542.3 tons (conventional steel erection), 8,380.5 tons (helicopter steel erection) • $PM_{2.5}$: 867.6 tons (conventional steel erection), 851.0 tons (helicopter steel erection) • SO_2: 1.1 tons (conventional steel erection), 1.4 tons (helicopter steel erection) • VOC: 19.5 tons (conventional steel erection), 19.9 tons (helicopter steel erection) • CO_2e: 29,998.9 tons (conventional steel erection), 28,272.1 tons (helicopter steel erection) **Impacts** ▪ Crosses 49.2 miles of the Utah County, Utah PM_{10} nonattainment area; modeling indicates ambient PM_{10} standards should not be violated ▪ If alternative route selected, a conformity determination would be required ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ 0.3 mile of Quaternary faults ▪ 2.3 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 48.3 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 6.0 miles of soils highly susceptible to water erosion ▪ 0 mile of soils highly susceptible to wind erosion ▪ 4.8 miles of Prime or Unique Farmland *Mineral Resources* ▪ Uinta Basin oil fields ▪ 25,0 miles of active mines or producing wells ▪ 116.6 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 2.6 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** Crosses: ▪ High and very high PFYC formations ▪ 1.8 miles of high known locality density and 10.4 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 158.9 miles of high and very high PFYC formations and 16.8 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 74 percent of route crosses high and very high PFYC formations and 8 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 39 outstanding waters ▪ 36 impaired waters ▪ 2 palustrine emergent wetlands ▪ 28 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 34 perennial streams and rivers ▪ 240 intermittent streams ▪ 2 wells/springs **Impacts** ▪ Nearly the same effects on water resources as Alternative COUT-B, except the route would not parallel Sowers Creek and would remain in the uplands above arid areas such as the Bad Land Cliffs, Argyle Ridge, and the Roan Cliffs; potential for increased erosion and sedimentation to Nine Mile Creek and Argyle Creek (tributaries of the Green River) ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in Utah from construction-related disturbance; would not affect a large area of land and would not likely have any measureable effect on municipal water sources ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
					water quality ▪ With mitigation, 62.5 miles of low residual impacts and 4.5 miles of moderate residual impacts on water resources anticipated
COUT-H	200.6	**Inventory** ▪ Emission summary: • CO: 184.5 tons (conventional steel erection), 178.4 tons (helicopter steel erection) • NO_x: 119.5 tons (conventional steel erection), 114.3 tons (helicopter steel erection) • PM_{10}: 8,153.8 tons (conventional steel erection), 7,999.1 tons (helicopter steel erection) • $PM_{2.5}$: 828.2 tons (conventional steel erection), 812.3 tons (helicopter steel erection) • SO_2: 1.1 tons (conventional steel erection), 1.3 tons (helicopter steel erection) • VOC: 18.6 tons (conventional steel erection), 19.0 tons (helicopter steel erection) • CO_2e: 28,683.4 tons (conventional steel erection), 27,032.4 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument). ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ Potential for mine subsidence in the Huntington, Utah area ▪ 2.7 mile of area with potential mine subsidence ▪ 0.7 mile of Quaternary faults ▪ 2.3 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 37.4 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.6 miles of soils highly susceptible to water erosion ▪ 0 mile of soils highly susceptible to wind erosion ▪ 5.4 miles of Prime or Unique Farmland *Mineral Resources* ▪ Uinta Basin oil fields ▪ 25.3 miles of active mines or producing wells ▪ 118.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 3.0 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 0.6 miles of high known locality density and 9.9 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 142.1 miles of high and very high PFYC formations and 25.3 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 71 percent of route crosses high and very high PFYC formations and 13 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 25 outstanding waters ▪ 50 impaired waters ▪ 3 palustrine emergent wetlands ▪ 14 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 24 perennial streams and rivers ▪ 307 intermittent streams ▪ 6 canals/ditches ▪ 1 well/spring **Impacts** ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in the Uinta Basin of Utah as well as in the Price, Castle, San Pete, and Juab Valleys from construction-related disturbance; affecting those subbasins could potentially affect municipal water sources ▪ Potential effects on outstanding waters could include result from soil compaction/decompaction and increased erosion ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality ▪ With mitigation, 66.7 miles of low residual impacts and 3.2 miles of moderate residual impacts on water resources anticipated

TABLE S-4a
ALTERNATIVE ROUTE COMPARISON – AIR QUALITY, GEOLOGY AND SOILS, PALEONTOLOGY, AND WATER RESOURCES

Alternative Route	Length (miles)	Air Quality (refer to Section 3.2.1)	Geology and Soils (refer to MV-2 through MV-4)	Paleontology (refer to MV-5)	Water Resources (refer to MV-6)
COUT-I	240.2	**Inventory** ▪ Emission summary: • CO: 221.0 tons (conventional steel erection), 213.7 tons (helicopter steel erection) • NO_x: 143.1 tons (conventional steel erection), 136.8 tons (helicopter steel erection) • PM_{10}: 9,760.3 tons (conventional steel erection), 9,575.0 tons (helicopter steel erection) • $PM_{2.5}$: 991.4 tons (conventional steel erection), 972.3 tons (helicopter steel erection) • SO_2: 1.3 tons (conventional steel erection), 1.6 tons (helicopter steel erection) • VOC: 22.3 tons (conventional steel erection), 22.7 tons (helicopter steel erection) • CO_2e: 34,345.8 tons (conventional steel erection), 32,368.8 tons (helicopter steel erection) **Impacts** ▪ No nonattainment or maintenance areas crossed ▪ Nearest Class I (pristine) area: 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** Crosses: *Geologic Hazards* ▪ Potential geologic hazards, including Quaternary faults and landslide areas along Link U630 ▪ Potential for mine subsidence in the Huntington, Utah area ▪ 1.1 miles of area with potential mine subsidence ▪ 0.8 mile of Quaternary faults ▪ 3.2 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages ▪ 0 miles of areas with high landslide susceptibility and 48.7 miles of areas with moderate landslide susceptibility *Soil Resources* ▪ 0.4 miles of soils highly susceptible to water erosion ▪ , 1.0 miles of soils highly susceptible to wind erosion ▪ 6.5 miles of Prime or Unique Farmland *Mineral Resources* ▪ Uinta Basin oil fields ▪ 28.1 miles of active mines or producing wells ▪ 168.0 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases **Impacts** ▪ With mitigation, 4.0 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources, and soil resources anticipated	**Inventory** ▪ Crosses 136.9 miles of high and very high PFYC formations, and 44.0 miles of moderate PFYC formations. **Impacts** ▪ Crosses 0.6 miles of high known locality density, and 9.9 miles of moderate known locality density. 57 percent of route crosses formations with high (PFYC 4) and very high (PFYC 5) sensitivity ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** Crosses: ▪ 31 outstanding waters ▪ 79 impaired waters ▪ 2 palustrine emergent wetlands ▪ 17 riparian areas ▪ 3 lakes, reservoirs, and ponds ▪ 37 perennial streams and rivers ▪ 405 intermittent streams ▪ 11 canals/ditches ▪ 2 wells/springs **Impacts** ▪ Crosses upland areas such as the Bad Land Cliffs, Argyle Ridge, and the Roan Cliffs that are susceptible to erosion mainly due to steep slopes and fragile soils ▪ Potential increased erosion and sedimentation to Nine Mile Creek and Argyle Creek (tributaries of the Green River) ▪ Potential for increased erosion and sedimentation in subbasins above municipalities in the Uinta Basin of Utah as well as in the Price, Castle, San Pete, and Juab valleys; affecting those subbasins could potentially affect municipal water sources ▪ Potential for higher sediment loads into wetlands and other waters from crossing wetlands or tributaries of wetlands that can reduce wetland functionality and water quality ▪ With mitigation, 79.4 miles of low residual impacts and 3.9 miles of moderate residual impacts on water resources anticipated

NOTES:
CO = Carbon monoxide
CO_2e = Carbon monoxide equivalent
MV = Map Volume
NO_2 = Nitrogen oxide
NO_x = Nitrogen oxides
PFYC = Potential fossil yield classification
$PM_{2.5}$ = Particulate matter less than 2.5 micrometers
PM_{10} = Particulate matter less than 10 micrometers
SO_2 = Sulfur dioxide
VOC = Volatile organic compounds

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)						
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	**Inventory** Crosses: ▪ 0.5 mile of agriculture vegetation communities ▪ 4.9 miles of barren/sparsely vegetated vegetation communities ▪ 112.0 miles of big sagebrush vegetation communities ▪ 1.3 miles of developed/disturbed vegetation communities ▪ 2.8 miles of grassland vegetation communities ▪ 1.2 miles of invasive vegetation communities ▪ 7.6 miles of pinyon-juniper vegetation communities ▪ 72.0 miles of shrub/shrub-steppe vegetation communities ▪ 2.6 miles of riparian vegetation communities ▪ 0.8 mile of water communities ▪ 0.6 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas would affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 3.0 miles of low impacts, 79.6 miles of low-moderate impacts, 121.1 miles of moderate impacts, and 2.6 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5	**Inventory** Crosses**:** ▪ 0.4 mile of Ute ladies'-tresses potential habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses would affect habitat suitability and/or populations if not mitigated (e.g., spanned or avoided) ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses**:** ▪ 46.2 miles of elk substantial habitat ▪ 139.1 miles of mule deer substantial habitat ▪ 164.6 miles of pronghorn substantial habitat ▪ 5.7 miles of moose substantial habitat ▪ 10.3 miles of elk calving grounds ▪ 10.3 miles of elk summer concentration areas ▪ 26.7 miles of elk winter range ▪ 2.9 miles of elk year-long habitat ▪ 2.7 miles of elk migration corridors ▪ 24.3 miles of mule deer winter range ▪ 24.5 miles of mule deer year-long habitat ▪ 4.2 miles of mule deer migration corridors ▪ 16.2 miles of pronghorn winter range ▪ 32.5 miles of pronghorn year-long habitat ▪ 9.3 miles of pronghorn migration corridors **Impacts** ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses**:** ▪ 19.5 miles of black-footed ferret management area ▪ 18.2 miles of white-tailed prairie dog potential colonies ▪ 92.3 miles of pygmy rabbit potential habitat ▪ 49.7 miles of mountain plover potential habitat ▪ 26.8 miles of greater sage-grouse core and priority habitats ▪ 177.3 miles of greater sage-grouse general habitats and transmission line corridors designated in WY EO 2011-5 ▪ 51.1 miles of greater sage-grouse habitats within 4 miles of leks located in core or priority habitats ▪ 51.7 miles of greater sage-grouse habitats within 4 miles of leks located in general habitats ▪ 1.1 miles of greater sage-grouse brood-rearing habitat ▪ 25.7 miles of greater sage-grouse winter habitat ▪ 66.4 miles of greater sage-grouse priority areas for conservation ▪ 52 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 40.0 miles of low, 101.3 miles of moderate and 63.1 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 1 critical habitat ▪ 613 aquatic habitats ▪ 3 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow critical habitat in the Yampa River anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated
WYCO-C	210.0	**Inventory** Crosses: ▪ 0.5 miles of agriculture vegetation communities ▪ 3.4 miles of barren/sparsely vegetated communities ▪ 109.4 miles of big sagebrush vegetation communities ▪ 1.3 miles of developed/disturbed vegetation communities ▪ 2.8 miles of grassland vegetation communities ▪ 1.2 miles of invasive vegetation communities ▪ 7.4 miles of pinyon-juniper vegetation communities ▪ 79.7 miles of shrub/shrub-steppe vegetation communities ▪ 1.9 miles of riparian vegetation communities ▪ 1.2 mile of water communities ▪ 1.2 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas would affect water quality and the ability of these areas to provide water filtration	**Inventory** Crosses**:** ▪ 0.4 mile of Ute ladies'-tresses potential habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses**:** ▪ 48.6 miles of elk substantial habitat ▪ 144.8 miles of mule deer substantial habitat ▪ 171.2 miles of pronghorn substantial habitat ▪ 5.7 miles of moose substantial habitat ▪ 10.3 miles of elk calving grounds ▪ 10.3 miles of elk summer concentration areas ▪ 26.7 miles of elk winter range ▪ 2.9 miles of elk year-long habitat ▪ 2.7 miles of elk migration corridors ▪ 24.3 miles of mule deer winter range ▪ 22.5 miles of mule deer year-long habitat ▪ 4.2 miles of mule deer migration corridors ▪ 16.2 miles of pronghorn winter range ▪ 29.6 miles of pronghorn year-long habitat ▪ 7.5 miles of pronghorn migration corridors **Impacts** ▪ With mitigation measures during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses**:** ▪ 19.5 miles of black-footed ferret management area ▪ 18.7 miles of white-tailed prairie dog potential colonies ▪ 89.7 miles of pygmy rabbit potential habitat ▪ 57.6 miles of mountain plover potential habitat ▪ 26.8 miles of greater sage-grouse core and priority habitats ▪ 181.0 miles of greater sage-grouse general habitats and transmission line corridors designated in WY EO 2011-5 ▪ 51.1 miles of greater sage-grouse habitats within 4 miles of leks located in core or priority habitats ▪ 62.3 miles of greater sage-grouse habitats within 4 miles of leks located in general habitats ▪ 1.1 miles of greater sage-grouse brood-rearing habitat. ▪ 25.7 miles of greater sage-grouse winter habitat.	**Inventory** Crosses: ▪ 1 critical habitat ▪ 425 aquatic habitats ▪ 1 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow critical habitat near the Yampa River anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
		▪ With mitigation, 3.0 miles of low impacts, 87.1 miles of low-moderate impacts, 118.0 miles of moderate impacts, and 1.9 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5			▪ 66.4 miles of greater sage-grouse priority areas for conservation ▪ 51 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 42.0 miles of low, 103.0 miles of moderate and 63.1 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	
WYCO-D	249.4	**Inventory** Crosses: ▪ 17.5 miles of agriculture vegetation communities ▪ 0.7 miles of barren/sparsely vegetated communities ▪ 167.0 miles of big sagebrush vegetation communities ▪ 5.4 miles of developed/disturbed vegetation communities ▪ 7.8 miles of grassland vegetation communities ▪ 1.2 miles of invasive vegetation communities ▪ 0.2 miles of mountain shrub vegetation communities ▪ 4.7 miles of pinyon-juniper vegetation communities ▪ 43.2 miles of shrub/shrub-steppe vegetation communities ▪ 3.2 miles of riparian vegetation communities ▪ 0.7 mile of water communities ▪ 0.8 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function as habitat ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 21.1 miles of low impacts, 47.9 miles of low-moderate impacts, 177.2 miles of moderate impacts, and 3.2 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5	**Inventory** Crosses: ▪ 1.4 miles of Ute ladies'-tresses potential habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 121.1 miles of elk substantial habitat ▪ 143.0 miles of mule deer substantial habitat ▪ 179.3 miles of pronghorn substantial habitat ▪ 10.6 miles of moose substantial habitat ▪ 96.4 miles of elk winter range ▪ 35.3 miles of elk migration corridors ▪ 56.7 miles of mule deer winter range ▪ 47.0 miles of mule deer year-long habitat ▪ 11.3 miles of mule deer migration corridors ▪ 42.5 miles of pronghorn winter range ▪ 45.2 miles of pronghorn year-long habitat ▪ 5.7 miles of pronghorn migration corridors **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses: ▪ 21.3 miles of black-footed ferret management area ▪ 14.2 miles of white-tailed prairie dog potential colonies ▪ 98.2 miles of pygmy rabbit potential habitat ▪ 37.0 miles of mountain plover potential habitat ▪ 1.2 Mexican spotted owl potential habitat ▪ 0.8 mile of yellow-billed cuckoo potential habitat ▪ 1.0 mile of yellow-billed cuckoo proposed critical habitat ▪ 110.4 miles of greater sage-grouse core and priority habitats ▪ 155.6 miles of greater sage-grouse general habitats and transmission line corridors designated in WY EO 2011-5 ▪ 89.2 miles of greater sage-grouse habitats within 4 miles of leks located in core or priority habitats ▪ 84.4 miles of greater sage-grouse habitats within 4 miles of leks located in general habitats ▪ 110.9 miles of greater sage-grouse priority areas for conservation ▪ 80 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 31.5 miles of low, 89 miles of moderate and 125.3 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 1 critical habitats ▪ 787 aquatic habitats ▪ 15 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow critical habitat in the Yampa River anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated
WYCO-F	218.8	**Inventory** Crosses: ▪ 0.5 miles of agriculture vegetation communities ▪ 2.8 miles of barren/sparsely vegetated communities ▪ 131.4 miles of big sagebrush vegetation communities ▪ 1.2 miles of developed/disturbed vegetation communities ▪ 2.8 miles of grassland vegetation communities ▪ 1.2 miles of invasive vegetation communities ▪ 7.4 miles of pinyon-juniper vegetation communities ▪ 67.7 miles of shrub/shrub-steppe vegetation communities	**Inventory** Crosses: ▪ 0.7 mile of Ute ladies'-tresses potential habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 46.2 miles of elk substantial habitat ▪ 142.4 miles of mule deer substantial habitat ▪ 169.7 miles of pronghorn substantial habitat ▪ 5.7 miles of moose substantial habitat ▪ 10.3 miles of elk calving grounds ▪ 10.3 miles of elk summer concentration areas ▪ 26.7 miles of elk winter range ▪ 2.9 miles of elk year-long habitat ▪ 2.7 miles of elk migration corridors ▪ 24.3 miles of mule deer winter range ▪ 33.7 miles of mule deer year-long habitat ▪ 13.9 miles of mule deer migration corridors ▪ 16.2 miles of pronghorn winter range	**Inventory** Crosses: ▪ 19.5 miles of black-footed ferret management area ▪ 18.0 miles of white-tailed prairie dog potential colonies ▪ 110.2 miles of pygmy rabbit potential habitat ▪ 47.7 miles of mountain plover potential habitat ▪ 26.8 miles of greater sage-grouse core and priority habitats ▪ 189.8 miles of greater sage-grouse general habitats and transmission line corridors designated in WY EO 2011-5	**Inventory** Crosses: ▪ 1 critical habitat ▪ 633 aquatic habitats ▪ 2 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow critical habitat in the Yampa River anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
		▪ 2.2 miles of riparian vegetation communities ▪ 0.8 mile of water communities ▪ 0.8 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 2.9 miles of low impacts, 75.1 miles of low-moderate impacts, 138.6 miles of moderate impacts, and 2.2 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5		▪ 39.9 miles of pronghorn year-long habitat ▪ 11.3 miles of pronghorn migration corridors **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	▪ 51.1 miles of greater sage-grouse habitats within 4 miles of leks located in core or priority habitats ▪ 1.1 miles of greater sage-grouse brood habitat ▪ 3.2 miles of greater sage-grouse winter habitat ▪ 66.4 miles of greater sage-grouse priority areas for conservation ▪ 58 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 34.2 miles of low, 119.6 miles of moderate and 63.1 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	▪ With mitigation, only low residual impacts anticipated
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)						
COUT BAX-B	279.9	**Inventory** Crosses: ▪ 8.2 miles of agriculture vegetation communities ▪ 0.5 miles of alpine vegetation communities ▪ 8.3 miles of aspen vegetation communities ▪ 19.4 miles of barren/sparsely vegetated communities ▪ 47.5 miles of big sagebrush vegetation communities ▪ 2.7 miles of developed/disturbed vegetation communities ▪ 6.5 miles of grassland vegetation communities ▪ 3.9 miles of invasive vegetation communities ▪ 7.5 miles of montane forest vegetation communities ▪ 12.8 miles of mountain shrub vegetation communities ▪ 41.8 miles of pinyon-juniper vegetation communities ▪ 119.0 miles of shrub/shrub-steppe vegetation communities ▪ 1.5 miles of riparian vegetation communities ▪ 0.3 mile of water communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 14.8 miles of low impacts, 160.8 miles of low-moderate impacts, 102.8 miles of moderate impacts, and 1.5 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5	**Inventory** Crosses: ▪ 1.5 miles of Ute ladies'-tresses potential habitat ▪ 30.7 miles of Cisco milkvetch potential habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and Cisco milkvetch would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 1.5 miles of low impacts anticipated and 30.7 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 24.7 miles of elk substantial habitat ▪ 28.8 miles of mule deer substantial habitat ▪ 46.4 miles of pronghorn substantial habitat ▪ 17.8 miles of moose substantial habitat ▪ 5.3 miles of desert bighorn sheep substantial habitat ▪ 4.8 miles of elk calving grounds ▪ 29.5 miles of elk summer concentration areas ▪ 40.7 miles of elk winter range ▪ 3.6 miles of mule deer spring/fall habitat ▪ 15.8 miles of mule deer summer concentration areas ▪ 69.8 miles of mule deer winter range ▪ 2.9 miles of mule deer winter/spring habitat ▪ 79.4 miles of pronghorn fawning areas ▪ 4.4 miles of pronghorn winter range ▪ 79.4 miles of pronghorn year-long habitat ▪ 0.6 mile of moose calving grounds ▪ 17.2 miles of moose winter range ▪ 0.6 mile of moose year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses: ▪ 1.8 miles of black-footed ferret management area ▪ 10.8 miles of white-tailed prairie dog potential colonies ▪ 1.2 mile of mountain plover potential habitat ▪ 19.5 miles of Mexican spotted owl potential habitat ▪ 0.1mile of southwestern willow flycatcher potential habitat ▪ 0.7 miles of yellow-billed cuckoo potential habitat ▪ 10.3 miles of greater sage-grouse priority habitats ▪ 15.0 miles of greater sage-grouse general habitats ▪ 5.0 miles of greater sage-grouse priority areas for conservation ▪ 6.3 miles of greater sage-grouse brood habitat ▪ 8.5 miles of greater sage-grouse winter habitat **Impacts** ▪ With mitigation, 13.1 miles of low, 29.8 miles of moderate and 12.1 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 2 critical habitats ▪ 887 aquatic habitats ▪ 15 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
COUT BAX-C	290.4	**Inventory** Crosses: ▪ 8.2 miles of agriculture vegetation communities ▪ 0.5 miles of alpine vegetation communities ▪ 8.3 miles of aspen vegetation communities ▪ 19.2 miles of barren/sparsely vegetated communities ▪ 49.7 miles of big sagebrush vegetation communities ▪ 2.7 miles of developed/disturbed vegetation communities ▪ 6.7 miles of grassland vegetation communities ▪ 3.7 miles of invasive vegetation communities ▪ 7.5 miles of montane forest vegetation communities ▪ 12.8 miles of mountain shrub vegetation communities ▪ 43.5 miles of pinyon-juniper vegetation communities ▪ 125.4 miles of shrub/shrub-steppe vegetation communities ▪ 2.0 miles of riparian vegetation communities ▪ 0.2 mile of water communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 14.6 miles of low impacts, 168.9 miles of low-moderate impacts, 104.9 miles of moderate impacts, and 2.0 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5	**Inventory** Crosses: ▪ 1.5 miles of Ute ladies'-tresses potential habitat ▪ 30.7 miles of Cisco milkvetch potential habitat ▪ 0.7 mile of San Rafael cactus mapped habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and Cisco milkvetch and mapped habitat for San Rafael cactus would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 2.2 miles of low impacts and 30.7 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 24.7 miles of elk substantial habitat ▪ 28.8 miles of mule deer substantial habitat ▪ 56.1 miles of pronghorn substantial habitat ▪ 17.8 miles of moose substantial habitat ▪ 5.3 miles of desert bighorn sheep substantial habitat ▪ 4.8 miles of elk calving grounds ▪ 29.5 miles of elk summer concentration areas ▪ 40.7 miles of elk winter range ▪ 3.6 miles of mule deer spring/fall habitat ▪ 15.8 miles of mule deer summer concentration areas ▪ 69.8 miles of mule deer winter range ▪ 2.9 miles of mule deer winter/spring habitat ▪ 79.6 miles of pronghorn fawning areas ▪ 4.4 miles of pronghorn winter range ▪ 79.6 miles of pronghorn year-long habitat ▪ 0.6 mile of moose calving grounds ▪ 17.2 miles of moose winter range ▪ 0.6 mile of moose year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses: ▪ 1.8 miles of black-footed ferret management area ▪ 11.9 miles of white-tailed prairie dog potential colonies ▪ 1.2 mile of mountain plover potential habitat ▪ 22.9 miles of Mexican spotted owl potential habitat ▪ 0.6 miles of southwestern willow flycatcher potential habitat ▪ 1.2 miles of yellow-billed cuckoo potential habitat ▪ 10.3 miles of greater sage-grouse priority habitats ▪ 15.0 miles of greater sage-grouse general habitats ▪ 5.0 miles of greater sage-grouse priority areas for conservation ▪ 6.3 miles of greater sage-grouse brood habitat ▪ 8.5 miles of greater sage-grouse winter habitat **Impacts** ▪ With mitigation, 13.1 miles of low, 34.6 miles of moderate and 12.1 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 2 critical habitats ▪ 900 aquatic habitats ▪ 15 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated
COUT BAX-E	292.2	**Inventory** Crosses: ▪ 7.1 miles of agriculture vegetation communities ▪ 0.3 mile of alpine vegetation communities ▪ 10.6 miles of aspen vegetation communities ▪ 18.5 miles of barren/sparsely vegetated communities ▪ 50.2 miles of big sagebrush vegetation communities ▪ 2.5 miles of developed/disturbed vegetation communities ▪ 5.3 miles of grassland vegetation communities ▪ 3.6 miles of invasive vegetation communities ▪ 2.8 miles of montane forest vegetation communities ▪ 15.8 miles of mountain shrub vegetation communities ▪ 39.7 miles of pinyon-juniper vegetation communities ▪ 133.6 miles of shrub/shrub-steppe vegetation communities ▪ 1.9 miles of riparian vegetation communities ▪ 0.3 mile of water communities	**Inventory** Crosses: ▪ 1.3 miles of Ute ladies'-tresses potential habitat ▪ 30.7 miles of Cisco milkvetch potential habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and Cisco milkvetch would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 1.3 miles of low impacts and 30.7 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 20.1 miles of elk substantial habitat ▪ 32.5 miles of mule deer substantial habitat ▪ 50.4 miles of pronghorn substantial habitat ▪ 23.3 miles of moose substantial habitat ▪ 5.3 miles of desert bighorn sheep substantial habitat ▪ 4.8 miles of elk calving grounds ▪ 25.9 miles of elk summer concentration areas ▪ 63.9 miles of elk winter range ▪ 2.7 miles of mule deer spring/fall habitat ▪ 14.8 miles of mule deer summer concentration areas ▪ 77.6 miles of mule deer winter range ▪ 5.8 miles of mule deer winter/spring habitat ▪ 91.0 miles of pronghorn fawning areas ▪ 4.4 miles of pronghorn winter range ▪ 95.0 miles of pronghorn year-long habitat ▪ 1.0 mile of moose calving grounds ▪ 14.8 miles of moose winter range ▪ 1.0 mile of moose year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity	**Inventory** Crosses: ▪ 1.8 miles of black-footed ferret management area ▪ 9.2 miles of white-tailed prairie dog potential colonies ▪ 1.2 mile of mountain plover potential habitat ▪ 19.1 miles Mexican spotted owl potential habitat ▪ 0.8 mile southwestern willow flycatcher potential habitat ▪ 1.5 miles of yellow-billed cuckoo potential habitat ▪ 19.8 miles of greater sage-grouse priority habitats ▪ 15.0 miles of greater sage-grouse general habitats ▪ 30.1 miles of greater sage-grouse priority areas for conservation ▪ 3.2 miles of greater sage-grouse brood habitat ▪ 4.1 miles of greater sage-grouse winter habitat	**Inventory** Crosses: ▪ 2 critical habitats ▪ 930 aquatic habitats ▪ 15 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
		Impacts ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 13.2 miles of low impacts, 173.3 miles of low-moderate impacts, 103.8 miles of moderate impacts, and 1.9 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5		▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Impacts** ▪ With mitigation, 13.1 miles of low, 29.0 miles of moderate and 21.6 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	
Colorado to Utah – U.S. Highway 40 to Central, Utah, to Clover (COUT)						
COUT-A	207.9	**Inventory** Crosses: ▪ 21.2 miles of agriculture vegetation communities ▪ 0.6 miles of alpine vegetation communities ▪ 6.7 miles of aspen vegetation communities ▪ 5.0 miles of barren/sparsely vegetated communities ▪ 83.2 miles of big sagebrush vegetation communities ▪ 1.9 miles of developed/disturbed vegetation communities ▪ 0.7 miles of grassland vegetation communities ▪ 7.8 miles of invasive vegetation communities ▪ 3.0 miles of montane forest vegetation communities ▪ 17.7 miles of mountain shrub vegetation communities ▪ 27.5 miles of pinyon-juniper vegetation communities ▪ 26.2 miles of shrub/shrub-steppe vegetation communities ▪ 3.4 miles of riparian vegetation communities ▪ 0.3 mile of water communities ▪ 2.7 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 30.9 miles of low impacts, 53.7 miles of low-moderate impacts, 119.9 miles of moderate impacts, and 3.4 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5	**Inventory** Crosses: ▪ 3.6 miles of Barneby ridge-cress potential habitat ▪ 4.8 miles of Ute ladies'-tresses potential habitat ▪ 0.1 mile of clay phacelia habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and Barneby ridge-cress and mapped habitat for clay phacelia would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 4.8 miles of low impacts and 3.7 mile of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 18.5 miles of elk substantial habitat ▪ 43.4 miles of mule deer substantial habitat ▪ 30.6 miles of pronghorn substantial habitat ▪ 45.5 miles of moose substantial habitat ▪ 5.0 miles of elk calving grounds ▪ 17.3 miles of elk spring/fall habitat ▪ 7.4 miles of elk summer concentration areas ▪ 64.8 miles of elk winter range ▪ 2.8 miles of elk year-long habitat ▪ 4.4 miles of mule deer spring/fall habitat ▪ 19.0 miles of mule deer summer concentration areas ▪ 69.4 miles of mule deer winter range ▪ 28.1 miles of mule deer winter/spring habitat ▪ 3.9 miles of mule deer year-long habitat ▪ 39.9 miles of pronghorn fawning areas ▪ 39.9 miles of pronghorn year-long habitat ▪ 14.2 miles of moose spring/fall habitat ▪ 14.7 miles of moose winter range **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses: ▪ 5.4 miles of black-footed ferret management area ▪ 17.8 miles of white-tailed prairie dog potential habitat ▪ 17.9 miles of mountain plover potential habitat ▪ 3.0 miles of yellow-billed cuckoo potential habitat ▪ 0.5 miles of yellow-billed cuckoo proposed critical habitat ▪ 50.6 miles of greater sage-grouse priority habitats ▪ 21.9 miles of greater sage-grouse general habitats ▪ 34.4 miles of greater sage-grouse priority areas for conservation ▪ 29.9 miles of greater sage-grouse habitats within 4 miles of leks located in priority habitats ▪ 50.6 miles of greater sage-grouse brood habitat ▪ 47.1 miles of greater sage-grouse winter habitat ▪ 10 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 18.0 miles of low, 16.6 miles of moderate and 56.0 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 1 critical habitat ▪ 740 aquatic habitats ▪ 21 element occurrences **Impacts** ▪ Only low residual impacts on critical habitat for Colorado pikeminnow and razorback sucker critical habitat anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated
COUT-B	218.2	**Inventory** Crosses: ▪ 16.6 miles of agriculture vegetation communities ▪ 1.5 miles of alpine vegetation communities ▪ 4.1 miles of aspen vegetation communities ▪ 7.3 miles of barren/sparsely vegetated communities ▪ 81.1 miles of big sagebrush vegetation communities	**Inventory** Crosses: ▪ 6.2 miles of Ute ladies'-tresses potential habitat ▪ 1.0 mile of clay phacelia habitat ▪ 13.9 miles of White River beardtongue and Graham's beardtongue habitat	**Inventory** Crosses: ▪ 23.5 miles of elk substantial habitat ▪ 64.6 miles of mule deer substantial habitat ▪ 39.5 miles of pronghorn substantial habitat ▪ 61.3 miles of moose substantial habitat ▪ 2.2 miles of elk calving grounds ▪ 2.2 miles of elk spring/fall habitat ▪ 14.6 miles of elk summer concentration areas	**Inventory** Crosses: ▪ 5.4 miles of black-footed ferret management area ▪ 18.9 miles of white-tailed prairie dog potential colonies ▪ 20.8 miles of mountain plover potential habitat ▪ 4.7 miles of Mexican spotted owl potential	**Inventory** Crosses: ▪ 1 critical habitat ▪ 797 aquatic habitats ▪ 25 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
		▪ 1.0 miles of developed/disturbed vegetation communities ▪ 3.4 miles of grassland vegetation communities ▪ 8.2 miles of invasive vegetation communities ▪ 3.5 miles of montane forest vegetation communities ▪ 20.8 miles of mountain shrub vegetation communities ▪ 34.4 miles of pinyon-juniper vegetation communities ▪ 30.2 miles of shrub/shrub-steppe vegetation communities ▪ 2.6 miles of riparian vegetation communities ▪ 0.4 mile of water communities ▪ 3.1 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 25.8 miles of low impacts, 64.6 miles of low-moderate impacts, 125.2 miles of moderate impacts, and 2.6 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5	**Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and mapped habitat for clay phacelia, White River, and Graham's beardtongue would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 20.1 mile of low impacts and 1.0 mile of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	▪ 69.4 miles of elk winter range ▪ 11.5 miles of elk year-long habitat ▪ 4.4 miles of mule deer spring/fall habitat ▪ 24.2 miles of mule deer summer concentration areas ▪ 63.8 miles of mule deer winter range ▪ 22.6 miles of mule deer winter/spring habitat ▪ 5.2 miles of mule deer year-long habitat ▪ 39.9 miles of pronghorn fawning areas ▪ 39.9 miles of pronghorn year-long habitat ▪ 3.1 miles of moose calving grounds ▪ 27.7 miles of moose winter range ▪ 3.1 miles of moose year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, Impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	habitat ▪ 3.0 miles of yellow-billed cuckoo potential habitat ▪ 1.1 miles of yellow-billed cuckoo proposed critical habitat ▪ 53.1 miles of sage-grouse priority habitats ▪ 21.9 miles of greater sage-grouse general habitats ▪ 23.8 miles of greater sage-grouse priority areas for conservation ▪ 24.2 miles of greater sage-grouse habitats within 4 miles of leks located in priority habitats ▪ 44.6 miles of greater sage-grouse brood habitat ▪ 55.0 miles of greater sage-grouse winter habitat ▪ 9 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 19.8 miles of low, 20.0 miles of moderate and 58.5 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated
COUT-C (Agency and Applicant Preferred Alternative)	208.2	**Inventory** Crosses: ▪ 6.1 miles of agriculture vegetation communities ▪ 0.2 miles of alpine vegetation communities ▪ 11.0 miles of aspen vegetation communities ▪ 7.9 miles of barren/sparsely vegetated communities ▪ 61.1 miles of big sagebrush vegetation communities ▪ 1.3 miles of developed/disturbed vegetation communities ▪ 4.4 miles of grassland vegetation communities ▪ 6.2 miles of invasive vegetation communities ▪ 3.5 miles of montane forest vegetation communities ▪ 22.2 miles of mountain shrub vegetation communities ▪ 35.5 miles of pinyon-juniper vegetation communities ▪ 45.7 miles of shrub/shrub-steppe vegetation communities ▪ 0.7 miles of riparian vegetation communities ▪ 0.3 mile of water communities ▪ 0.1 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 13.6 miles of low impacts, 81.2 miles of low-moderate impacts, 112.7 miles	**Inventory** Crosses: ▪ 1.0 mile of Ute ladies'-tresses potential habitat ▪ 1.0 mile of clay phacelia habitat ▪ 7.5 miles of White River beardtongue and Graham's beardtongue habitat ▪ 4.2 mile of clay reed-mustard habitat ▪ 33.8 miles of Uinta Basin hookless cactus habitat ▪ 2.4 miles of Level 1 *Sclerocactus* core habitat ▪ 8.4 miles of Level 2 *Sclerocactus* core habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and mapped habitat for clay phacelia, White River beardtongue, Graham's beardtongue, clay reed-mustard, and Uinta Basin hookless cactus (including *Sclerocactus* core habitat) would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 36.3 mile of low impacts and 6.9 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 43.8 miles of elk substantial habitat ▪ 41.1 miles of mule deer substantial habitat ▪ 25.0 miles of pronghorn substantial habitat ▪ 51.3 miles of moose substantial habitat ▪ 8.6 miles of Rocky Mountain bighorn sheep substantial habitat ▪ 6.5 miles of elk calving grounds ▪ 2.2 miles of elk spring/fall habitat ▪ 68.2 miles of elk winter range ▪ 8.6 miles of elk year-long habitat ▪ 4.4 miles of mule deer spring/fall habitat ▪ 32.4 miles of mule deer summer concentration areas ▪ 52.2 miles of mule deer winter range ▪ 22.6 miles of mule deer winter/spring habitat ▪ 2.7 miles of mule deer year-long habitat ▪ 52.2 miles of pronghorn fawning areas ▪ 57.2 miles of pronghorn year-long habitat ▪ 2.7 miles of moose calving grounds ▪ 39.9 miles of moose winter range ▪ 2.7 miles of moose year-long habitat ▪ 8.7 miles of rocky mountain bighorn sheep year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses: ▪ 8.7 miles of black-footed ferret management area ▪ 16.2 miles of white-tailed prairie dog potential colonies ▪ 31.7 miles of mountain plover potential habitat ▪ 10.4 miles of Mexican spotted owl potential habitat ▪ 0.5 mile of yellow-billed cuckoo potential habitat ▪ 23.1 miles of greater sage-grouse priority habitats ▪ 22.6 miles of greater sage-grouse general habitats ▪ 12.9 miles of greater sage-grouse priority areas for conservation ▪ 3.0 miles of greater sage-grouse habitats within 4 miles of leks located priority habitats ▪ 22.7 miles of greater sage-grouse brood habitat ▪ 32.7 miles of greater sage-grouse winter habitat ▪ 1 greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 31.1 miles of low, 20.8 miles of moderate and 24.3 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 2 critical habitats ▪ 499 aquatic habitats ▪ 26 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
		of moderate impacts, and 0.7 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5				
COUT-H	200.6	**Inventory** Crosses: ▪ 8.6 miles of agriculture vegetation communities ▪ 0.7 miles of alpine vegetation communities ▪ 16.0 miles of aspen vegetation communities ▪ 9.5 miles of barren/sparsely vegetated communities ▪ 57.2 miles of big sagebrush vegetation communities ▪ 1.5 miles of developed/disturbed vegetation communities ▪ 4.5 miles of grassland vegetation communities ▪ 6.2 miles of invasive vegetation communities ▪ 6.4 miles of montane forest vegetation communities ▪ 12.0 miles of mountain shrub vegetation communities ▪ 30.8 miles of pinyon-juniper vegetation communities ▪ 46.1 miles of shrub/shrub-steppe vegetation communities ▪ 0.5 miles of riparian vegetation communities ▪ 0.5 mile of water communities ▪ 0.1 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 16.3 miles of low impacts, 76.9 miles of low-moderate impacts, 106.9 miles of moderate impacts, and 0.5 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5	**Inventory** Crosses: ▪ 0.8 mile of Ute ladies'-tresses potential habitat ▪ 6.2 miles of White River beardtongue and Graham's beardtongue habitat ▪ 4.2 mile of clay reed-mustard habitat ▪ 33.8 miles of Uinta Basin hookless cactus habitat ▪ 2.4 miles of Level 1 *Sclerocactus* core habitat ▪ 8.4 miles of Level 2 *Sclerocactus* core habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and mapped habitat for White River beardtongue, Graham's beardtongue, clay reed-mustard, and Uinta Basin hookless cactus (including *Sclerocactus* core habitat) would affect habitat suitability and/or populations if it is not possible to span or avoid these areas ▪ With mitigation, 34.8 mile of low impacts and 5.9 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	**Inventory** Crosses: ▪ 44.3 miles of elk substantial habitat ▪ 47.9 miles of mule deer substantial habitat ▪ 25.0 miles of pronghorn substantial habitat ▪ 23.3 miles of moose substantial habitat ▪ 9.5 miles of Rocky Mountain bighorn sheep substantial habitat ▪ 4.3 miles of elk calving grounds ▪ 18.9 miles of elk summer concentration areas ▪ 39.9 miles of elk winter range ▪ 4.3 miles of elk year-long habitat ▪ 3.5 miles of mule deer spring/fall habitat ▪ 31.6 miles of mule deer summer concentration areas ▪ 55.5 miles of mule deer winter range ▪ 5.8 miles of mule deer winter/spring habitat ▪ 2.7 miles of mule deer year-long habitat ▪ 57.2 miles of pronghorn fawning areas ▪ 57.2 miles of pronghorn year-long habitat ▪ 1.0 mile of moose calving grounds ▪ 45.8 miles of moose winter range ▪ 1.0 mile of moose year-long habitat ▪ 8.7 miles of rocky mountain bighorn sheep year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	**Inventory** Crosses: ▪ 8.7 miles of black-footed ferret management area ▪ 17.3 miles of white-tailed prairie dog potential colonies ▪ 31.7 miles of mountain plover potential habitat ▪ 9.8 miles of Mexican spotted owl potential habitat ▪ 0.6 mile of yellow-billed cuckoo potential habitat ▪ 41.8 miles of greater sage-grouse priority habitats ▪ 22.6 miles of greater sage-grouse general habitats ▪ 38.4 miles of greater sage-grouse priority areas for conservation ▪ 7.7 miles of greater sage-grouse habitats within 4 miles of leks located in priority habitats ▪ 26.7 miles of greater sage-grouse brood habitat ▪ 33.5 miles of greater sage-grouse winter habitat ▪ 8 sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 31.1 miles of low, 20.1 miles of moderate and 43.0 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	**Inventory** Crosses: ▪ 2 critical habitats ▪ 533 aquatic habitats ▪ 20 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated
COUT-I	240.2	**Inventory** Crosses: ▪ 9.6 miles of agriculture vegetation communities ▪ 1.8 miles of alpine vegetation communities ▪ 13.9 miles of aspen vegetation communities ▪ 10.8 miles of barren/sparsely vegetated communities ▪ 63.1 miles of big sagebrush vegetation communities ▪ 6.4 miles of developed/disturbed vegetation communities ▪ 5.9 miles of grassland vegetation communities ▪ 6.4 miles of invasive vegetation communities ▪ 9.4 miles of montane forest vegetation communities ▪ 9.9 miles of mountain shrub vegetation communities ▪ 33.6 miles of pinyon-juniper vegetation communities ▪ 68.5 miles of shrub/shrub-steppe vegetation	**Inventory** Crosses: ▪ 0.9 mile of Ute ladies'-tresses potential habitat ▪ 6.2 miles of White River beardtongue and Graham's beardtongue habitat ▪ 4.2 mile of clay reed-mustard habitat ▪ 33.8 miles of Uinta Basin hookless cactus habitat ▪ 2.4 miles of Level 1 *Sclerocactus* core habitat ▪ 8.4 miles of Level 2 *Sclerocactus* core habitat **Impacts** ▪ Crossing potential habitat for Ute ladies'-tresses and mapped habitat for White River beardtongue, Graham's beardtongue, clay reed-mustard, and Uinta Basin hookless cactus would affect habitat suitability and/or populations if it	**Inventory** Crosses: ▪ 47.1 miles of elk substantial habitat ▪ 56.4 miles of mule deer substantial habitat ▪ 33.7 miles of pronghorn substantial habitat ▪ 17.8 miles of moose substantial habitat ▪ 9.5 miles of Rocky Mountain bighorn sheep substantial habitat ▪ 4.3 miles of elk calving grounds ▪ 23.2 miles of elk summer concentration areas ▪ 46.7 miles of elk winter range ▪ 8.2 miles of elk year-long habitat ▪ 4.4 miles of mule deer spring/fall habitat ▪ 33.7 miles of mule deer summer concentration areas ▪ 65.3 miles of mule deer winter range ▪ 2.9 miles of mule deer winter/spring habitat ▪ 2.7 miles of mule deer year-long habitat ▪ 71.8 miles of pronghorn fawning areas ▪ 75.2 miles of pronghorn year-long habitat ▪ 0.7 mile of moose calving grounds	**Inventory** Crosses: ▪ 8.7 miles of black-footed ferret management area ▪ 20.5 miles of white-tailed prairie dog potential colonies ▪ 31.7 miles of mountain plover potential habitat ▪ 13.5 miles of Mexican spotted owl potential habitat ▪ 0.3 mile of yellow-billed cuckoo potential habitat ▪ 38.4 miles of greater sage-grouse priority habitats ▪ 22.6 miles of greater sage-grouse general habitats ▪ 25.8 miles of greater sage-grouse priority areas for conservation ▪ 9.3 miles of greater sage-grouse habitats within 4 miles of leks located in priority	**Inventory** Crosses: ▪ 2 critical habitats ▪ 689 aquatic habitats ▪ 19 element occurrences **Impacts** ▪ Only low residual impacts on Colorado pikeminnow and razorback sucker critical habitats anticipated ▪ Direct and indirect impacts on aquatic habitats potentially supporting special status or game fish and aquatic species aquatic organisms ▪ With mitigation, only low residual impacts anticipated

TABLE S-4b
ALTERNATIVE ROUTE COMPARISON – BIOLOGY

Alternative Route	Length (miles)	Vegetation (refer to MV-7)	Special Status Plants (refer to MV-7)	Wildlife (refer to MV-8 through MV-9)	Special Status Wildlife (refer to MV-10 through MV-12)	Fish and Aquatics (refer to MV-11)
		communities ▪ 0.5 miles of riparian vegetation communities ▪ 0.3 mile of water communities ▪ 0.1 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation in wire and border zones would alter vegetative structure and function ▪ Disturbance in riparian, water, and wetland areas could adversely affect water quality and the ability of these areas to provide water filtration ▪ With mitigation, 22.4 miles of low impacts, 102.1 miles of low-moderate impacts, 115.2 miles of moderate impacts, and 0.5 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5	is not possible to span or avoid these areas ▪ With mitigation, 34.9 mile of low impacts and 5.9 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5	▪ 47.0 miles of moose winter range ▪ 0.7 mile of moose year-long habitat ▪ 8.7 miles of rocky mountain bighorn sheep year-long habitat **Impacts** ▪ With mitigation during times big game use specific seasonal habitat, impacts would include loss of forage, potential increase in weeds, and an increase in human presence and activity ▪ With mitigation, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7	habitats ▪ 31.4 miles of greater sage-grouse brood habitat ▪ 39.5 miles of greater sage-grouse winter habitat ▪ 6 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 31.1 miles of low, 27.0 miles of moderate and 39.6 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8	

NOTE: MV = Map Volume

TABLE S-4c
ALTERNATIVE ROUTE COMPARISON – LAND USE

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-18 through MV-24)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	230-kilovolt	138-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)															
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	20.4	26.3	0.0	21.5	3.3	21.6	57.8	129.9	0.0	0.0	13.3	0.0	63.9	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 34.0 miles of permitted use, 118.8 miles requiring a conditional use permit, and 0.0 mile not permitted for transmission lines
WYCO-C	210.0	26.0	54.0	0.0	21.5	7.3	21.6	95.4	127.9	0.0	0.0	12.8	0.0	68.7	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 66.4 miles of permitted use, 110.8 miles requiring a conditional use permit, and 0.0 mile not permitted for transmission lines
WYCO-D	249.4	69.3	70.8	0.0	59.2	29.9	66.9	61.3	106.5	0.0	0.0	23.7	0.0	119.2	**Existing Land Use** ▪ 4.2 miles of moderate residual impacts in Wyoming where the alternative route crosses an agricultural farm complex, and irrigated farmland in Colorado. No high residual impacts. **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 12.8 miles of permitted use, 176.4 miles requiring a conditional use permit, and 0.0 mile not permitted for transmission lines
WYCO-F	218.8	20.4	26.3	0.0	21.5	3.3	21.6	47.1	141.8	0.0	0.0	13.4	0.0	63.6	**Existing Land Use** ▪ 0.1 mile of moderate residual impacts where the alternative route crosses irrigated farmland in Wyoming. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 25.4 miles of permitted use, 118.5 miles requiring a conditional use permit, and 0.0 mile not permitted for transmission lines
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)															
COUT BAX-B	279.9	132.2	6.1	0.0	96.4	0.0	24.0	39.3	172.8	16.9	0.0	30.7	0.0	59.5	**Existing Land Use** ▪ 1.8 miles of moderate residual impacts where the alternative route crosses irrigated farmland in Utah. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 14.3 miles of permitted use, 265.5 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines
COUT BAX-C	290.4	128.8	17.6	0.0	73.1	0.0	37.2	39.3	179.4	16.9	0.0	34.6	0.0	59.5	Refer to COUT BAX-B for details on impacts with same resources crossed for each of the following categories of COUT BAX-C: **Existing Land Use** ▪ 1.8 miles of moderate residual impacts, no high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 14.3 miles of permitted use, 276.0 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines
COUT BAX-E	292.2	136.8	34.8	0.0	31.6	0.0	46.6	45.4	191.1	7.7	0.0	26.9	0.0	66.5	Refer to COUT BAX-B for details on impacts with same resources crossed for each of the following categories of COUT BAX-E: **Existing Land Use** ▪ 1.4 miles of moderate residual impacts where the alternative route crosses irrigated farmland in Utah. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 14.3 miles of permitted use, 277.8 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines

TABLE S-4c
ALTERNATIVE ROUTE COMPARISON – LAND USE

Alternative Route	Length (miles)	Utility Corridors (miles): Designated (Bureau of Land Management and U.S. Forest Service)	Utility Corridors (miles): West-wide Energy Corridor	Parallel Linear Facilities (within 2,000 feet) (miles): 500-kilovolt	345-kilovolt	230-kilovolt	138-kilovolt	Pipeline	Jurisdiction (miles): Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	Summary of Residual Impacts (refer to MV-18 through MV-24)
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)															
COUT-A	207.9	49.5	17.4	0.0	114.6	0.0	43.7	12.5	55.2	19.5	0.0	22.9	0.0	110.3	Refer to COUT BAX-B for details on impacts with same resources crossed for each of the following categories of COUT-A: **Existing Land Use** ▪ 13.4 miles of moderate residual impacts in Utah where the alternative route crosses residences (single family and mobile homes), irrigated farmland, center-pivot agriculture and residential mixed-use (authorized) land uses. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 65.8 miles of permitted use, 137.0 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines
COUT-B	218.2	22.1	38.3	0.0	92.1	0.0	110.6	12.2	55.7	18.3	0.0	24.8	7.8	111.6	**Existing Land Use** ▪ 11.7 miles of moderate residual impacts in Utah where the alternative route crosses residences (single family), irrigated farmland, center-pivot agriculture, 0.1 mile of the Ioka West cemetery, and residential mixed-use (authorized) land uses. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 60.6 miles of permitted use, 138.9 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines
COUT-C (Agency and Applicant Preferred Alternative)	208.2	19.4	19.7	0.0	68.3	0.0	38.3	14.6	94.0	8.4	0.0	33.4	1.6	70.8	**Existing Land Use** ▪ 1.5 miles of moderate residual impacts in Utah where the alternative route crosses irrigated farmland, and residential mixed-use (authorized) land uses. No high residual impacts **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 39.2 miles of permitted use, 139.5 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines
COUT-H	200.6	18.5	14.2	0.0	48.8	0.0	41.2	25.2	95.2	7.7	0.0	70.5	1.6	70.5	**Existing Land Use** ▪ 1.8 miles of moderate residual impacts in Utah where the alternative route crosses irrigated farmland. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 18.3 miles of permitted use, 153.5 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines
COUT-I	240.2	29.7	14.2	0.0	83.9	0.0	43.6	17.6	122.1	16.9	0.0	36.0	1.6	63.6	**Existing Land Use** ▪ 1.9 miles of moderate residual impacts in Utah where the alternative route crosses irrigated farmland. No high residual impacts **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ Crosses 17.7 miles of permitted use, 193.7 miles requiring a conditional use permit, and 0.1 mile not permitted for transmission lines

NOTES:
[1]State of Colorado acting by and through the Department of Natural Resources for the use and benefit of the Department of Parks and Wildlife and the Parks and Wildlife Commission, Conservation Easement in Gross, granted by RSH Land Company, LLC. September 27, 2012.
Due to overlap of recreation areas with moderate impacts along Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, the total miles of moderate impacts is less than when individual recreation areas are added together.
MV = Map Volume

TABLE S-4d
ALTERNATIVE ROUTE COMPARISON – PARKS, PRESERVATION, AND RECREATION; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Parks, Preservation, and Recreation (refer to MV-17)	Congressional Designations (refer to MV-18)	Special Designations and Other Management Areas (refer to MV-18 through MV-20)	Lands with Wilderness Characteristics (refer to MV-19)	Inventoried Roadless Areas and Unroaded/Undeveloped Areas (refer to MV-20)
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)						
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	▪ 0.7 mile of the alternative route crosses a historic trail (Rawlins to Baggs Road Trail), the Outlaw Trail Scenic Drive, the North Platte River Special Recreation Management Area (SRMA), avoidance areas for utilities in the BLM Rawlins Resource Management Plan (RMP) ▪ Athorization for utilities to cross with special stipulations or mitigation measures would be required	▪ Crosses no congressional designations (refer to Appendix F for information on how the Project would cross the Deerlodge Road portion of Dinosaur National Monument)	▪ 3.0 miles of the alternative route crosses Tuttle Ranch Conservation Easement; the Deed of Conservation Easement precludes overhead transmission lines from crossing the property ▪ 1.1 miles of the alternative route crosses the Cross Mountain Ranch Conservation Easement; Terms of the agreement for the Cross Mountain Ranch Conservation Easement prohibit the granting of easements or rights-of-way for transmission. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement. ▪ 0.2 mile of the alternative route crosses Yampa River Recreation area Land and Water Conservation Fund (LWCF) Site. Yampa River Recreation Area was developed using federal monies and should be considered an avoidance area for tower placement. If the site could not be spanned or avoided, a conversion process could be used to place structures on the site. This process should only be used if all other options have been analyzed and determined unfeasible, due to the complexity of the process. ▪ 4.4 miles of the alternative route crosses Red Rim-Daley wildlife habitat management area (WHMA); this WHMA requires intense management of surface-disturbing and disruptive activities to maintain raptor-nesting habitat; also crosses the Yampa River Recreation Area LWCF site; spanning of the site would be required. If site cannot be spanned, a conversion process is potentially applicable if no other alternatives are feasible	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units: ▪ BLM Little Snake Field Office • 900 acres of Anthill Draw (Unit 46) • 25 acres of West Sevenmile (Unit 353) • 106 acres of Upper Little Snake (Unit 23) • 230 acres of Lower Little Snake (Unit 31) • 180 acres of Deep Canyon (Unit 33) • 74 acres of Simsberry Draw (Unit 34) • 3 acres of Spence Gulch (Unit 118) ▪ White River Field Office • 207 acres of Lower Wolf Creek (Unit 25)	▪ No Inventoried Roadless Areas (IRAs) or unroaded/undeveloped areas crossed
WYCO-C	210.0	▪ Crosses 0.6 mile of the Baggs to Rawlins Trail, Outlaw Trail Scenic Drive, and the North Platte River SRMA (refer to WYCO-B for details on the same areas crossed)	▪ Crosses no congressional designations (refer to Appendix F for information on how the Project would cross the Deerlodge Road portion of Dinosaur National Monument)	▪ Crosses 3.0 miles of the Tuttle Ranch Conservation Easement ▪ 1.1 miles of the alternative route crosses the Cross Mountain Ranch Conservation Easement; ▪ 0.2 mile of the alternative route crosses Yampa River Recreation area LWCF Site. ▪ 4.4 miles of the alternative route crosses Red Rim-Daley WHMA, and the Yampa River Recreation Area LWCF site ▪ Refer to WYCO-B for details	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units: ▪ BLM Rawlins Field Office • 27 acres in Rotten Springs WY-030-13N95W24-2012) ▪ Same units in Colorado as WYCO-B (refer to WYCO-B for details)	▪ No IRAs or unroaded/undeveloped areas crossed

TABLE S-4d
ALTERNATIVE ROUTE COMPARISON – PARKS, PRESERVATION, AND RECREATION; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Parks, Preservation, and Recreation (refer to MV-17)	Congressional Designations (refer to MV-18)	Special Designations and Other Management Areas (refer to MV-18 through MV-20)	Lands with Wilderness Characteristics (refer to MV-19)	Inventoried Roadless Areas and Unroaded/Undeveloped Areas (refer to MV-20)
WYCO-D	249.4	▪ Crosses 13.9 miles of the Rawlins to Baggs Road Trail, Outlaw Trail Scenic Dive, North Platte River SRMA, and Juniper Mountain SRMA (BLM Little Snake Field Office) that is listed in RMP as an avoidance area for future utilities with rights-of-way strongly discouraged and authorizations only made if compatible with what the area is managed for and no other feasible alternative routes available (refer to WYCO-B for details on the same areas crossed)	▪ Crosses no congressional designations (refer Appendix F for information on how the Project would cross the Deerlodge Road portion of Dinosaur National Monument)	▪ Crosses 0.9 miles of the Upper Muddy Creek Watershed/Grizzly WHMA (an avoidance area for utilities in the Rawlins RMP that would require authorization before utilities are allowed to cross; special stipulations or mitigation measures may be required.) ▪ In addition, the area's environmental sensitivity, and whether there are other feasible alternative routes that will first be considered, Red Rim-Daley WHMA, Tuttle Ranch Conservation Easement, Cross Mountain Ranch Conservation Easement; Yampa River Recreation Area LWCF site, Moffat County Road #11 LWCF site (same restrictions as Yampa River Recreation Area), the Bitterbrush and Yampa River state wildlife areas (the Colorado Division of Parks and Wildlife strongly discourage activities that conflict with the primary mission of these areas, to provide wildlife recreation opportunities) ▪ Refer to WYCO-B for additional details	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units ▪ White River Field Office • 207 acres of Lower Wolf Creek (Unit 25)	▪ No IRAs or unroaded/undeveloped areas crossed
WYCO-F	218.8	▪ Crosses 0.2 mile of the North Platte River SRMA refer to WYCO-B for details on the same areas crossed	▪ Crosses no congressional designations (refer Appendix F for information on how the Project would cross the Deerlodge Road portion of Dinosaur National Monument)	▪ Crosses 3.0 miles of the Tuttle Ranch Conservation Easement ▪ 0.1 mile of the Cross Mountain Ranch Conservation Easement; ▪ 0.2 mile of the Yampa River Recreation area LWCF Site. ▪ 4.4 miles the Red Rim-Daley WHMA Refer to WYCO-B for details	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units; the same units as WYCO-B in the BLM Little Snake and White River Field Offices (refer to WYCO-B for details)	▪ No IRAs or unroaded/undeveloped areas crossed
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)						
COUT BAX-B	279.9	▪ Crosses 15.1 miles of the Nephi Shooting Range, Paradise Creek Trailhead, Dinosaur Diamond Prehistoric Byway, Skyline Drive, and Wedge Overlook/Buckdraw Draw scenic byways; Labyrinth Canyon SRMA (located in the Price Field Office, utilities can cross, but for all new utility corridors), San Rafael Swell SRMA (located in the Price Field Office, scenic and vegetation values and an avoidance area for future rights-of-way), Labyrinth Rims/Gemini Bridges SRMA (located in the Moab Field Office, precludes surface-disturbing activities within 0.5 mile of developed recreation sites), Booths Canyon non-motorized trail in the Manti-La Sal National Forest (if constructed, Project may need to limit access along right-of-way to prevent motorized use on non-motorized trails)	▪ Crosses no congressional designations	▪ Crosses 0.4 mile of the Big Hole Area of Critical Environmental Concern (ACEC) (designated in the Price Field Office as an exclusion area for future utilities to protect rock art sites) ▪ 0.7 mile of the North Moroni Conservation Easement (would require a written approval from the Grantee before a right-of-way or easement is granted) ▪ 1.0 miles of the Fountain Green and Salt Creek wildlife management areas (WMA) (an amendment to the federal grant agreement would be required before Utah Division of Wildlife Resources could decide to grant a right-of-way or easement for the Project across a WMA)	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units: ▪ BLM Grand Junction Field Office • 14 acres of Spring Canyon ▪ BLM White River Field Office • 106 acres of Blue Jay Creek (Unit 7) • 16 acres of Coal Ridge (Unit 21) • 22 acres of Gilsonite Hills (Unit 31) • 11 acres of Wild Rose (Unit 35) • 59 acres of Whiskey Creek (Unit 2) ▪ BLM Moab Field Office • 65 acres of Harley Dome • 50 acres of Floy Canyon ▪ BLM Price Field Office • 300 acres of Lost Spring Wash	▪ No IRAs are crossed ▪ 0.3 mile of East Mountain Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities

TABLE S-4d
ALTERNATIVE ROUTE COMPARISON – PARKS, PRESERVATION, AND RECREATION; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Parks, Preservation, and Recreation (refer to MV-17)	Congressional Designations (refer to MV-18)	Special Designations and Other Management Areas (refer to MV-18 through MV-20)	Lands with Wilderness Characteristics (refer to MV-19)	Inventoried Roadless Areas and Unroaded/Undeveloped Areas (refer to MV-20)
COUT BAX-C	290.4	▪ Crosses 8.7 miles the Nephi Shooting Range, Labyrinth Canyon, Labyrinth Rims/Gemini Bridges, and San Rafael Swell SRMAs, and Booths Canyon non-motorized trails in the Manti-La Sal National Forest (refer to Alternative COUT BAX-B for details)	▪ Crosses no congressional designations	▪ Crosses 0.7 mile of the North Moroni Conservation Easement ▪ 1.0 mile of the Fountain Green and Salt Creek WMAs(refer to Alternative COUT BAX-B for details on impacts)	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units ▪ BLM Grand Junction Field Office • 14 acres of Spring Canyon ▪ BLM White River Field Office • 106 acres of Blue Jay Creek (Unit 7) • 16 acres of Coal Ridge (Unit 21) • 22 acres of Gilsonite Hills (Unit 31) • 11 acres of Wild Rose (Unit 35) • 59 acres of Whiskey Creek(Unit 2) ▪ BLM Moab Field Office • 65 acres of Harley Dome • 50 acres of Floy Canyon ▪ BLM Price Field Office • 300 acres of Lost Spring Wash • 206 acres of Never Sweat Wash • 165 acres of Desolation Canyon	▪ No IRAs are crossed ▪ 0.3 mile of the East Mountain Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities
COUT BAX-E	292.2	▪ Crosses 7.6 miles of the snow kite play areas, Nephi Shooting Range, Church of Jesus Christ of Latter-day Saints (LDS) Church Ephraim Recreation Camp, Labyrinth Canyon and Labyrinth Rims/Gemini Bridges SRMA, Maple Fork non-motorized trails in the Manti-La Sal National Forest, and the Old Spanish National Historic Trail (refer to Alternative COUT BAX-B for details)	▪ Crosses no congressional designations	▪ Crosses 0.7 mile of the North Moroni Conservation Easement ▪ 5.7 miles of the Gordon Creek and Salt Creek WMAs (refer to Alternative COUT BAX-B for details on impacts)	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units ▪ BLM Grand Junction Field Office • 14 acres of Spring Canyon ▪ BLM White River Field Office • 106 acres of Blue Jay Creek (Unit 7) • 16 acres of Coal Ridge (Unit 21) • 22 acres of Gilsonite Hills (Unit 31) • 11 acres of Wild Rose (Unit 35) • 59 acres of Whiskey Creek (Unit 2) ▪ BLM Moab Field Office • 65 acres of Harley Dome • 50 acres of Floy Canyon ▪ BLM Price Field Office • 300 acres of Lost Spring Wash • 206 acres of Never Sweat Wash • 7 acres of Price River • 165 acres of Desolation Canyon	▪ No IRAs are crossed ▪ 1.6 miles of the Oak Creek Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities
Colorado to Utah – U.S. Highway 40 to Central, Utah, to Clover (COUT)						
COUT-A	207.9	▪ Crosses 1.2 miles of the Nephi Shooting Range, Dinosaur Diamond Prehistoric byway, Willow Creek South and French Hollow non-motorized trails in the Uinta National Forest, and Blind Canyon non-motorized trail in the Manti-La Sal National Forest (refer to Alternative COUT BAX-B)	▪ Crosses 4.3 miles of Utah Reclamation Mitigation and Conservation Commission (URMCC) managed lands (a license agreement would need to be granted to cross these areas with the Project)	▪ 7.2 miles of the alternative route crosses Sandwash/Sinkdraw conservation easement (Terms of the agreement for the Sandwash/Sinkdraw conservation easement prohibit new public and private utilities, including electric, over the conservation easement property.) ▪ 16.9 miles of eight WMAs (Birdseye, Currant Creek, Dairy Fork, Lake Fork, Rabbit Gulch, Salt Creek, Spencer Fork, and Tabby Mountain) (refer to Alternative COUT BAX-B)	▪ COUT-A would not cross lands with wilderness characteristics	▪ 0.4 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities, 0.1 mile of the Chipman Creek IRA (418008) crossed in the Uinta National Forest resulting in a low impact, and 0.2 mile of the Willow Creek IRA (418009) crossed in the Uinta National Forest resulting in a low impact ▪ 0.8 mile of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities
COUT-B	218.2	▪ Crosses 3.1 miles of the Nephi Shooting Range, private OHV track, LDS Church Camp Timberlane Recreation Camp, Dinosaur Diamond Prehistoric byway/ Indian Canyon scenic byway, Energy Loop: Huntington/Eccles Canyons scenic byway;	▪ Crosses no congressional designations	▪ Crosses 12.0 miles where the alternative route crosses eight WMAs (refer to COUT-A for details)	▪ COUT-B would not cross lands with wilderness characteristics	▪ 0.4 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities, 9.3 miles of IRA 0401010 crossed in the Ashley

TABLE S-4d
ALTERNATIVE ROUTE COMPARISON – PARKS, PRESERVATION, AND RECREATION; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Parks, Preservation, and Recreation (refer to MV-17)	Congressional Designations (refer to MV-18)	Special Designations and Other Management Areas (refer to MV-18 through MV-20)	Lands with Wilderness Characteristics (refer to MV-19)	Inventoried Roadless Areas and Unroaded/Undeveloped Areas (refer to MV-20)
		Quitchampau non-motorized trail in the Ashley National Forest, and Blind Canyon non-motorized trails in the Manti-La Sal National Forest				National Forest resulting in a moderate impact, and 5.4 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a low impact ▪ 0.8 mile of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities, 8.8 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.4 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact
COUT-C (Agency and Applicant Preferred Alternative)	208.2	▪ Crosses 1.2 miles of the ▪ Nephi shooting range, private OHV track, Dinosaur Diamond Prehistoric byway/Indian Canyon scenic byway, and Nine Mile Canyon backway; semi-primitive non-motorized recreation opportunity spectrum (ROS) category in the Price Field Office; (development could potentially be limited to protect relevant and important values. These areas typically do not allow for road construction)Blind Canyon non-motorized trails in the Manti-La Sal National Forest ▪ Refer to COUT-B for details on the same areas crossed	▪ Crosses 0.8 mile of the suitable section of the Lower Green River Wild and Scenic River (in accordance with the BLM Vernal RMP, future right of ways will be placed at Fourmile Bottom Area when crossing the Green River)	▪ Crosses 0.9 mile of the Lower Green River ACEC (with no surface occupancy allowed within line of sight or up to 0.5 mile from the centerline of the river, whichever is less) ▪ 10.4 miles of the six WMAs ▪ Refer to COUT-A for details	Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units ▪ BLM Vernal Field Office • 7,100 acres of Desolation Canyon • 103 acres of Currant Canyon units ▪ Crosses lands Proposed by the Southern Utah Wilderness Alliance • 217 acres of Badlands Cliff Addition • 37 acres of Desolation Canyon Addition	▪ 0.4 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities ▪ 0.8 mile of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities
COUT-H	200.6	▪ Crosses 4.0 miles of the Nephi shooting range, snow kite play areas, LDS Church Ephraim Recreation Camp, Dinosaur Diamond Prehistoric byway/Indian Canyon byway, Energy Loop: Huntington/Eccles Canyons Scenic byway, and Nine Mile Canyon scenic backway; Maple Fork non-motorized trail and semi-primitive non-motorized ROS category in the Price Field Office (refer to COUT-C for details)	▪ Crosses 0.8 mile of the suitable section of the Lower Green River Wild and Scenic River (in accordance with the BLM Vernal RMP, future right of ways will be placed at Fourmile Bottom Area when crossing the Green River)	▪ Crosses 0.4 mile of the Crawford Farm Conservation Easement and 0.4 mile of the Nuttall Farm Conservation Easement (Terms of the agreement for the Crawford Farm and Nuttall Farm conservation easements prohibits additional utility structures and systems prohibit. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement) ▪ 7.1 miles of the Lower Green River ACEC (refer to COUT-C for details), and Gordon Creek and Salt Creek WMAs (refer to COUT-A for details)	▪ Crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units for the BLM Vernal Field Office the same as COUT-C and COUT-I (refer to COUT-C for details)	▪ No IRAs are crossed ▪ 1.6 miles of the Oak Creek Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities
COUT-I	240.2	▪ Crosses 1.3 miles of the Paradise Creek trailhead, Nephi shooting range, Dinosaur Diamond Prehistoric byway/Indian Canyon byway, Skyline Loop scenic byway, Energy Loop: Huntington/Eccles Canyons scenic byway, and Nine Mile Canyon scenic backway, semi-primitive non-motorized ROS category in the Price Field Office (refer to COUT-C for details) ▪ Booths Canyon non-motorized trails in the Manti-La Sal National Forest (refer to COUT-B for details)	▪ Crosses 0.8 mile of the suitable section of the Lower Green River Wild and Scenic River (in accordance with the BLM Vernal RMP, future right of ways will be placed at Fourmile Bottom Area when crossing the Green River)	▪ Crosses 0.7 mile of the North Moroni Conservation Easement. ▪ 1.9 miles of the Lower Green River ACEC, Fountain Green and Salt Creek WMAs (refer to COUT-H for details)	▪ COUT-I crosses lands with wilderness characteristics and would remove some acres from lands with wilderness characteristics units for the BLM Vernal Field Office the same as COUT-C and COUT-H (refer to COUT-C for details)	▪ No IRAs are crossed ▪ 0.3 mile of East Mountain Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities

NOTES:
[1]State of Colorado acting by and through the Department of Natural Resources for the use and benefit of the Department of Parks and Wildlife and the Parks and Wildlife Commission, Conservation Easement in Gross, granted by RSH Land Company, LLC. September 27, 2012.
Due to overlap of recreation areas with moderate impacts along Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E, the total miles of moderate impacts is less than when individual recreation areas are added together.
MV = Map Volume

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)								
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	▪ Class B – 68.0 ▪ Class C – 138.3	▪ Views within 0.5 mile – 14.5 ▪ Views between 0.5 and 1.0 mile – 16.2	▪ Views within 0.5 mile – 49.2 ▪ Views between 0.5 and 1.0 mile – 46.7	▪ Two areas would not be in compliance with Visual Resource Management (VRM) Class III[1] objectives and would require an amendment of the BLM Rawlins and Little Snake Field Office Resource Management Plans (RMP): • Cherokee Historic Trail crossing • Godiva Rim Proposed Back Country Byway crossing	**Scenery** ▪ No key impacts **Residences** ▪ High impacts on views from dispersed residences in Little Snake River Valley **Travel Routes** ▪ High impacts on views from Hanna Draw Road where the Project traverses steep terrain ▪ The Project would cross the Godiva Rim Proposed Backcountry Byway in a natural landscape setting **Recreation Areas** ▪ High impacts on views from the Continental Divide National Scenic Trail (NST) ▪ High impacts on views from the Overland Historic Trail in an area influenced by oil and gas development ▪ High impacts on views from the Cherokee Historic Trail in a natural landscape setting **Special Designations** ▪ No key impacts	**Inventory** ▪ 2,369 sites identified by the Class I ▪ 91 sites in the Area of Potential Effect (APE) ▪ Key resources include the National Register of Historic Places (NRHP) – listed Fort Fred Steele Historic Site, the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway (Wyoming); and the Old Victory Highway (Colorado). These resources are in the Project APE, except for Fort Fred Steele Historic Site ▪ An unrecorded segment of the Old Victory Highway crosses Link C92 (Colorado) ▪ The Overland Historic Trail (one contributing and one non-contributing segment) is crossed by Link W108 (Wyoming) ▪ The Cherokee Historic Trail (non-contributing segment) is crossed by Link W302 (Wyoming) ▪ Deerlodge Road (issue identified for analysis) is located along Link C173 outside of, but adjacent to the APE (Colorado) **Impacts** ▪ 37.2 miles of high cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-B has the second highest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $4.6 million in the first few years and $463,000 in remaining years ▪ There is one residence within 0.1 mile and four within 0.25 mile with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
WYCO-C	210.0	▪ Class B – 62.2 ▪ Class C – 147.6	▪ Views within 0.5 mile – 14.6 ▪ Views between 0.5 and 1.0 mile – 14.9	▪ Views within 0.5 mile – 46.2 ▪ Views between 0.5 and 1.0 mile – 41.0	▪ Two areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM Rawlins and Little Snake Field Office RMPs: • Cherokee Historic Trail crossing • Godiva Rim Proposed Back Country Byway crossing	**Scenery** ▪ Low impact on landscapes associated with Adobe Town since the Project is colocated with an existing pipeline corridor **Residences** ▪ High impacts on views from dispersed residence in Little Snake River Valley **Travel Routes** ▪ High impacts on views from Hanna Draw Road where the Project traverses steep terrain ▪ The Project would cross the Godiva Rim Proposed Backcountry Byway in a natural landscape setting **Recreation Areas** ▪ High impacts on views from the Continental Divide NST ▪ High impacts on views from the Overland Historic Trail in an area less influenced by oil and gas development than Alternative WYCO-B ▪ High impacts on views from the Cherokee Historic Trail in an area	**Inventory** ▪ 1,943 sites identified by the Class I ▪ 92 sites in the Project APE ▪ Key resources include two NRHP-listed properties (Red Rock Site and Fort Fred Steele Historic Site), the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway (Wyoming); and the Old Victory Highway (Colorado). These resources are in the Project APE, except for the NRHP-listed properties ▪ An unrecorded segment of the Old Victory Highway is crossed by Link C92 (Colorado) ▪ The Overland and the Cherokee historic trails (contributing segments) are crossed by Links W27 and W409, respectively (Wyoming) ▪ Deerlodge Road (issue identified for analysis) is located along Link C173 outside of, but adjacent to the APE (Colorado)	**Impacts** ▪ Same as WYCO-B

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
						influenced by an existing pipeline corridor **Special Designations** ▪ No key impacts	**Impacts** ▪ 58.2 miles of high cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-C has the highest miles of high cultural resource intensity	
WYCO-D	249.4	▪ Class B – 87.2 ▪ Class C – 161.6	▪ Views within 0.5 mile – 80.9 ▪ Views between 0.5 and 1.0 mile – 36.4	▪ Views within 0.5 mile – 97.9 ▪ Views between 0.5 and 1.0 mile – 44.9	▪ One area would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM Little Snake Field Office RMP: • Colorado State Highway 13 parallel condition	**Scenery** ▪ Moderate impacts on the Little Snake River Valley landscape within a largely natural setting **Residences** ▪ High impacts on views from dispersed residences west of Baggs and southeast of Craig due to the proximity of the Project **Travel Routes** ▪ High impacts on views from the Outlaw Trail Scenic Drive (Wyoming Highway 789) due to long duration views ▪ Moderate impacts on views from Lincoln Highway (U.S. Highway 30) where the highway would be crossed twice **Recreation Areas** ▪ High impacts on views from the Continental Divide NST ▪ High impacts on views from the Overland Historic Trail in an area influenced by oil and gas development ▪ High impacts on views from the Cherokee Historic Trail in an area influenced by oil and gas development **Special Designations** ▪ Moderate impacts on views from the Upper Muddy Creek Watershed/Grizzly Wildlife Habitat Management Area due to the proximity of the Project	**Inventory** ▪ 1,787 sites identified by the Class I ▪ 87 sites in the Project APE ▪ Key resources include two NRHP-listed properties (Hanna Community Hall and Fort Fred Steele Historic Site), the Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road (Wyoming); and the Old Victory Highway (Colorado). These resources are in the Project APE, except for the NRHP-listed properties ▪ An unrecorded segment of the Old Victory Highway is crossed by Link C100 (Colorado) ▪ The Overland Historic Trail (contributing segment) and the Cherokee Historic Trail (non-contributing segment) are crossed by Links W110 and W111, respectively (Wyoming) ▪ Ghost town of Carbon (issue identified for analysis) is approximately 10 miles south of Link W22 (Wyoming) ▪ Deerlodge Road (issue identified for analysis) is located along Link C173 outside of, but adjacent to the APE (Colorado) **Impacts** ▪ 17.5 miles of high cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-D has the fewest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $6.4 million in the first few years and $665,000 in remaining years ▪ There are 10 residences within 0.1 mile and 53 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
WYCO-F	218.8	▪ Class B – 62.5 ▪ Class C – 156.3	▪ Views within 0.5 mile – 16.8 ▪ Views between 0.5 and 1.0 mile – 18.7	▪ Views within 0.5 mile – 55.0 ▪ Views between 0.5 and 1.0 mile – 47.8	▪ Two areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM Rawlins and Little Snake Field Office RMPs: • Cherokee Historic Trail crossing • Godiva Rim Proposed Back Country Byway crossing	**Scenery** ▪ No key impacts **Residences** ▪ High impacts on views from dispersed residence in Little Snake River Valley **Travel Routes** ▪ High impacts on views from Hanna Draw Road where the Project traverses steep terrain ▪ The Project would cross the Godiva Rim Proposed Back Country Byway in a natural landscape setting **Recreation Areas** ▪ High impacts on views from the Continental Divide NST ▪ High impacts on views from the Overland Historic Trail in an area influenced by oil and gas development	**Inventory** ▪ 2,553 sites identified by the Class I ▪ 116 sites in the Project APE ▪ Key resources include the NRHP-listed Fort Fred Steele Historic Site, the Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road (Wyoming); and the Old Victory Highway (Colorado). These resources are in the Project APE, except for Fort Fred Steele Historic Site ▪ An unrecorded segment of the Old Victory Highway is crossed by Link C92 (Colorado) ▪ The Overland Historic Trail (two contributing and non-contributing consecutive segments) is crossed by Link W108 (Wyoming)	**Impacts** ▪ Low and temporary impact on employment and population would be the same as WYCO-B Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $7.3 million in the first few years and $728,000 in remaining years ▪ There is one residence within 0.1 mile and four within 0.25 mile with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
						▪ High impacts on views from the Cherokee Historic Trail where the Project would cross the trail three times **Special Designations** ▪ No key impacts	▪ The Cherokee Historic Trail (one contributing and two non-contributing segments) is crossed by Links W120, W124, and W302 (Wyoming) ▪ Deerlodge Road (issue identified for analysis) is located along Link C173 outside of, but adjacent to the APE (Colorado) **Impacts** ▪ 32 miles of high cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-F has the third highest miles of high cultural resource intensity	
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)								
COUT BAX-B	279.9	▪ Class A – 9.0 ▪ Class B – 106.4 ▪ Class C – 164.3	▪ Views within 0.5 mile – 135.2 ▪ Views between 0.5 and 1.0 mile – 60.8	▪ Views within 0.5 mile – 114.0 ▪ Views between 0.5 and 1.0 mile – 50.7	▪ Eight areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM White River, Grand Junction, Moab, and Price Field Office RMPs: • Dinosaur Diamond Scenic Byway crossing in Canyon Pintado National Historic District • Baxter Pass Road parallel condition • Whiskey Canyon residence • Garfield County Road 201 parallel • Old U.S. Highway 6 parallel condition • Interstate 70 (I-70) Harley Dome Rest Area • I-70 parallel condition • Wedge Overlook Scenic Byway parallel condition ▪ Conforms with Manti-La Sal National Forest Land and Resource Management Plan (LRMP)	**Scenery** ▪ High impacts on the Wasatch Plateau Alpine landscape where the Project traverses steep, forested terrain **Residences** ▪ No key impacts **Travel Routes** ▪ High impacts on views from the Skyline Drive Scenic Backway due to the separation between the existing transmission line and the Project ▪ High impacts on views from the Wedge Overlook Scenic Backway where the Project would cross the road multiple times and parallel the road for 3.0 miles ▪ High impacts on views from I-70 due to long duration views of the Project **Recreation Areas** ▪ High impacts on views from the Old Spanish NHT due to the proximity of the Project ▪ High impacts on views from the Indian Creek Campground and Potters Pond where the Project traverses steep, forested terrain **Special Designations** ▪ High impacts on views from the Oil Spring Mountain and Demaree Wilderness Study Areas (WSA) due to the proximity of the Project	**Inventory** ▪ 1,598 sites identified by the Class I ▪ 102 sites in the Project APE ▪ Key resources include two NRHP-listed properties (Canyon Pintado National Historic District and Carrot Men Pictograph Site), the Uintah Railway, the Dragon Douglas Trail, and the Dragon to Rangely Stage/Freight Road (Colorado); the Denver & Rio Grande Western (D&RGW) Railway and the U.S. Highway 6 (Colorado and Utah); and the Old Spanish National Historic Trail (NHT), 26 NRHP-listed properties (including Buckhorn Wash Rock Art Sites), the Buckhorn Flat Railroad, and the Ballard and Thompson Railroad (Utah). These resources are in the Project APE, except for the NRHP-listed properties ▪ Contributing segments of the Old Spanish NHT are crossed at Links U728, U729, and U730; non-contributing segments of the trail are crossed at Links U487, U730, and U732 (Utah) ▪ A known segment of the Old Spanish NHT is in proximity to Link C270 (Colorado) ▪ Designated Areas of Critical Environmental Concern (ACEC) include Big Hole, Cottonwood Canyon, Smith Cabin, and Tidwell Draw (Utah); Big Hole is crossed by Link U730 ▪ One of the five heritage districts (Little Denmark) of the Mormon Pioneer National Heritage Area (MPNHA) is traversed by this alternative route (Utah) **Impacts** ▪ 114.2 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT BAX segment, Alternative	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $7.4 million in the first few years and $746,000 in remaining years ▪ There are 11 residences within 0.1 mile and 107 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
							COUT BAX-B has the highest miles of high cultural resource intensity	
COUT BAX-C	290.4	▪ Class A – 9.0 ▪ Class B – 107.5 ▪ Class C – 173.7	▪ Views within 0.5 mile – 143.3 ▪ Views between 0.5 and 1.0 mile – 65.7	▪ Views within 0.5 mile – 122.3 ▪ Views between 0.5 and 1.0 mile – 51.5	▪ Ten areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM White River, Grand Junction, Moab, and Price Field Office RMPs: • Dinosaur Diamond Scenic Byway crossing in Canyon Pintado National Historic District • Baxter Pass Road parallel condition • Whiskey Canyon residence • Garfield County Road 201 parallel condition • Old U.S. Highway 6 parallel condition • I-70 Harley Dome Rest Area • I-70 parallel condition • Dinosaur Diamond Scenic Byway (U.S. Highway 6) parallel condition • San Rafael Swell Destination Route parallel condition • Wedge Overlook Scenic Byway parallel condition ▪ Conforms with Manti-La Sal National Forest LRMP	**Scenery** ▪ High impacts on the Wasatch Plateau Alpine landscape where the Project traverses steep, forested terrain **Residences** ▪ No key impacts **Travel Routes** ▪ High impacts on views from the Dinosaur Diamond Scenic Byway (U.S. Highway 6) due to long duration views ▪ High impacts on views from the Skyline Drive Scenic Backway due to the separation between the existing transmission line and the Project ▪ High impacts on views from the Wedge Overlook Scenic Backway where the Project would cross the road multiple times and parallel the road for 3.0 miles ▪ High impacts on views from I-70 due to long duration views of the Project ▪ High impacts on views from San Rafael Swell Destination Route where the Project would closely parallel the road **Recreation Areas** ▪ High impacts on views from the Old Spanish NHT due to the proximity of the Project ▪ High impacts on views from the Indian Creek Campground and Potters Pond where the Project traverses steep, forested terrain **Special Designations** ▪ High impacts on views from the Oil Spring Mountain and Demaree WSAs due to the proximity of the Project	**Inventory** ▪ 1,610 sites identified by the Class I ▪ 107 sites in the Project APE ▪ Key resources include two NRHP-listed properties (Canyon Pintado National Historic District and Carrot Men Pictograph Site), the Uintah Railway, the Dragon Douglas Trail, and the Dragon to Rangely Stage/Freight Road (Colorado); the D&RGW Railway and the U.S. Highway 6 (Colorado and Utah); and the Old Spanish NHT, 26 NRHP-listed properties (including Buckhorn Wash Rock Art Sites), the Buckhorn Flat Railroad, and the Ballard and Thompson Railroad (Utah). These resources are in the Project APE, except for the NRHP-listed properties ▪ Non-contributing segments of the Old Spanish NHT are crossed by Links U487, U488, and U732 (Utah) ▪ A known segment of the Old Spanish NHT is in proximity to the Colorado segment of the alternative route (Link C270) ▪ Big Hole ACEC is located outside of the Project APE (Utah) ▪ The Book Cliffs Archaeological Sites and Rock Art are in proximity to the alternative route (Utah) ▪ The Little Denmark Heritage District (part of the MPNHA) is traversed by this alternative route (Utah) **Impacts** ▪ 101.7 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-C has the second highest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $7.6 million in the first few years and $765,000 in remaining years ▪ There are 11 residences within 0.1 mile and 107 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT BAX-E	292.2	▪ Class A – 2.4 ▪ Class B – 106.4 ▪ Class C – 183.3	▪ Views within 0.5 mile – 112.7 ▪ Views between 0.5 and 1.0 mile – 67.8	▪ Views within 0.5 mile – 138.1 ▪ Views between 0.5 and 1.0 mile – 51.3	▪ Eight areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the White River, Grand Junction, BLM Moab, and Price Field Office RMPs: • Dinosaur Diamond Scenic Byway crossing in Canyon Pintado National Historic District • Baxter Pass Road parallel condition • Whiskey Canyon residence • Garfield County Road 201 parallel condition • Old U.S. Highway 6 parallel	**Scenery** ▪ High impacts on the Wasatch Plateau Parks landscape due to few existing cultural modifications **Residences** ▪ No key impacts **Travel Routes** ▪ High impacts on Dinosaur Diamond Scenic Byway (U.S. Highway 6) due to long duration views ▪ High impacts on views from the Energy Loop Scenic Byway where the Project would cross the byway five times ▪ High impacts on views from I-70 due to long duration views of the Project **Recreation Areas**	**Inventory** ▪ 1,856 sites identified by the Class I ▪ 131 sites in the Project APE ▪ Key resources include two NRHP-listed properties (Canyon Pintado National Historic District and Carrot Men Pictograph Site), the Uintah Railway, the Dragon Douglas Trail, and the Dragon to Rangely Stage/Freight Road (Colorado); the D&RGW Railway and the U.S. Highway 6 (Colorado and Utah); and the Old Spanish NHT, 6 NRHP-listed properties, the Buckhorn Flat Railroad, the Utah and Pleasant Valley Railway, the National Coal Railway, and the Ballard and Thompson Railroad (Utah).	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $7.8 million in the first few years and $788,000 in remaining years ▪ There are 14 residences within 0.1 mile and 100 within 0.25 mile with moderate

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
					condition • I-70 Harley Dome Rest Area • I-70 parallel condition • Dinosaur Diamond Scenic Byway (U.S. Highway 6) parallel condition ▪ Conforms with the Manti-La Sal National Forest LRMP	▪ High impacts on views from the Old Spanish NHT due to the proximity of the Project **Special Designations** ▪ High impacts on views from the Oil Spring Mountain and Demaree WSAs due to the proximity of the Project	These resources are in the Project APE, except for the NRHP-listed properties, the Buckhorn Flat Railroad, and the National Coal Railway ▪ Non-contributing segments of the Old Spanish NHT are crossed by Links U487 and U488 (Utah) ▪ A known segment of the Old Spanish NHT is in proximity to the Colorado segment of the alternative route (Link C270) ▪ Grassy Trail ACEC is located outside of the Project APE (Utah) ▪ The Book Cliffs Archaeological Sites and Rock Art are in proximity to the alternative route (Utah) ▪ The Little Denmark Heritage District (part of the MPNHA) is traversed by this alternative route (Utah) **Impacts** ▪ 87.9 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-E has the fewest miles of high cultural resource intensity	adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)								
COUT-A	207.9	▪ Class A – 1.3 ▪ Class B – 118.6 ▪ Class C – 87.3	▪ Views within 0.5 mile – 60.9 ▪ Views between 0.5 and 1.0 mile – 38.9	▪ Views within 0.5 mile – 77.1 ▪ Views between 0.5 and 1.0 mile – 38.9	▪ Compliant with VRM Class III and IV[1] objectives ▪ Conforms to the Uinta National Forest LRMP. One area would not be in conformance with the Manti-La Sal National Forest LRMP. • General big-game winter range management unit adjacent to Birdseye, Utah	**Scenery** ▪ High impacts on the Strawberry River landscape where the Project traverses steep, forested terrain **Residences** ▪ High impacts on residences across the Uinta Basin **Travel Routes** ▪ High impacts on views from the White River/Strawberry Road Scenic Backway where the Project traverses steep, forested terrain **Recreation Areas** ▪ High impacts on views from recreation areas adjacent to Strawberry Reservoir including Strawberry River and Aspen Grove Campground where the Project traverses steep terrain **Special Designations** ▪ Moderate impacts on views from Dinosaur National Monument including views of skylined transmission structures	**Inventory** ▪ 691 sites identified by the Class I ▪ 18 sites in APE ▪ Key resources include the Old Victory Highway (Colorado and Utah); and 6 NRHP-listed properties, 1 designated traditional cultural property (TCP), the U.S. Highway 6, and the Utah and Pleasant Valley Railway (Utah). These resources are outside of the Project APE ▪ One additional key resource is the Sevier Railway/Marysvale Branch of the D&RGW Railway, which is in the Project APE ▪ This alternative route avoids the Old Spanish NHT ▪ The Little Denmark Heritage District (part of the MPNHA) is traversed by this alternative route (Utah) **Impacts** ▪ 3.2 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-A has the fewest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $7.4 million in the first few years and $707,000 in remaining years ▪ There are 45 residences within 0.1 mile and 214 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-B	218.2	▪ Class A – 1.8 ▪ Class B – 121.3 ▪ Class C – 94.0	▪ Views within 0.5 mile – 55.9 ▪ Views between 0.5 and 1.0 mile – 37.5	▪ Views within 0.5 mile – 83.1 ▪ Views between 0.5 and 1.0 mile – 30.7	▪ Compliant with VRM Class III and IV[1] objectives ▪ Conforms with the Ashley and Uinta National Forests LRMPs • General Big-game Winter Range Management unit	**Scenery** ▪ High impacts on the Argyle Canyon landscape where the Project traverses steep, forested terrain **Residences** ▪ High impacts on residences across the	**Inventory** ▪ 809 sites identified by the Class I ▪ 36 sites in the Project APE ▪ Key resources include Old Victory Highway (Colorado and Utah); and 6 NRHP-listed historic properties, 1	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities.

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
					adjacent to Birdseye, Utah	Uinta Basin ▪ High impacts on views from summer cabins in Argyle Canyon where the Project traverses steep, forested terrain ▪ High impacts on views from residences in Solider Summit due to the proximity of the Project **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ Moderate impacts on views from Dinosaur National Monument including views of skylined transmission structures	designated TCP, the Utah and Pleasant Valley Railway, and the Emma Park Road (Utah). These resources, are outside of the Project APE ▪ Two additional key resources are the U.S. Highway 6 and the Sevier Railway/Marysvale Branch of the D&RGW Railway, which are in the Project APE (Utah) ▪ This alternative route avoids the Old Spanish NHT ▪ Argyle Canyon Rock Art is located along Links U431 and U432 adjacent to and in the Project APE (Utah) ▪ The Little Denmark Heritage District (part of the MPNHA) is traversed by this alternative route (Utah) **Impacts** ▪ 6.2 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-B has the third highest miles of high cultural resource intensity	▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $5.2 million in the first few years and $496,000 in remaining years ▪ There are 56 residences within 0.1 mile and 239 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-C (Agency and Applicant Preferred Alternative)	208.2	▪ Class A – 1.8 ▪ Class B – 112.8 ▪ Class C – 93.7	▪ Views within 0.5 mile – 41.3 ▪ Views between 0.5 and 1.0 mile – 41.1	▪ Views within 0.5 mile – 51.0 ▪ Views between 0.5 and 1.0 mile – 21.3	▪ One area would not be in compliance with VRM Class II[1] objectives and three areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM Vernal Field Office RMP: • Fourmile Bottom-Green River • Enron Recreation Area • Nine Mile Canyon Scenic Backway crossing • Argyle Canyon Road parallel condition ▪ Conforms with the Ashley and Uinta National Forests LRMPs • General Big-game Winter Range Management unit adjacent to Birdseye, Utah	**Scenery** ▪ High impacts on the Argyle Canyon landscape due to few existing cultural modifications **Residences** ▪ High impacts on residences in the Argyle Ridge/Canyon area ▪ High impacts on views from residences in Solider Summit due to the proximity of the Project **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ Low impacts on views from the Dinosaur National Monument since views of the Project would be mostly screened by topography ▪ High impacts on views from the Green River Eligible Wild and Scenic River (WSR) where the Project would be skylined on the steep canyon walls	**Inventory** ▪ 1,146 sites identified by the Class I ▪ 41 sites in the Project APE ▪ Key resources include the Old Victory Highway (Colorado and Utah); and 6 NRHP-listed historic properties, 1 designated TCP, the U.S. Highway 6, the Utah and Pleasant Valley Railway, the Sevier Railway/Marysvale Branch of the D&RGW Railway, and the Emma Park Road (Utah). These resources are outside of the Project APE, except for the Sevier Railway/Marysvale Branch of the D&RGW Railway, which is in the Project APE ▪ This alternative route avoids the Old Spanish NHT ▪ Nine Mile Canyon ACEC is located along Links U401 and U413 outside of the Project APE; a portion of this ACEC is situated along Links U400 and U404 in the Project APE (Utah) ▪ Argyle Canyon Rock Art is located along Links U404 and U406 adjacent to and in the Project APE (Utah) ▪ The Little Denmark Heritage District (part of the MPNHA) is traversed by this alternative route (Utah) **Impacts** ▪ 6.1 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-C has the second fewest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $5.0 million in the first few years and $477,000 in remaining years ▪ There are 16 residences within 0.1 mile and 100 within 0.25 mile with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
COUT-H	200.6	▪ Class A – 5.6 ▪ Class B – 86.7 ▪ Class C – 108.0	▪ Views within 0.5 mile – 41.6 ▪ Views between 0.5 and 1.0 mile – 30.1	▪ Views within 0.5 mile – 45.8 ▪ Views between 0.5 and 1.0 mile – 24.1	▪ One area would not be in compliance with VRM Class II[1] objectives and three areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM Vernal Field Office RMP: • Enron Recreation Area • Fourmile Bottom-Green River • Nine Mile Canyon Scenic Backway crossing • Argyle Canyon Road parallel condition ▪ Conforms with the Uinta and Manti-La Sal National Forests LRMPs	**Scenery** ▪ High impacts on the Argyle Canyon and Wasatch Plateau Parks landscapes due to few existing cultural modifications **Residences** ▪ High impacts on views from Helper where the Project would be located within 0.5 mile of residences traversing steep terrain **Travel Routes** ▪ High impacts on views from the Indian Canyon Scenic Byway where the Project would parallel the byway producing long duration views ▪ High impacts on views from the Energy Loop Scenic Byway where the Project would cross the byway five times **Recreation Areas** ▪ No key impacts **Special Designations** ▪ Low impacts on views from Dinosaur National Monument since views of the Project would be mostly screened by topography ▪ High impacts on views from the Green River Eligible WSR where the Project would be skylined on the steep canyon walls	**Inventory** ▪ 1,405 sites identified by the Class I ▪ 91 sites in APE ▪ Key resources include the Old Victory Highway (Colorado); 10 NRHP-listed properties (including the Nephi Mounds), and the Emma Park Road (Utah). These resources are outside of the Project APE ▪ Additional key resources are Heiner (Carbon) Town site, the U.S. Highway 6, the National Coal Railway, and the Utah and Pleasant, which are in the Project APE ▪ This alternative route avoids the Old Spanish NHT ▪ Nine Mile Canyon ACEC is located along Links U401 and U407 outside of the Project APE; a portion of this ACEC is situated along Links U400 and U404 in the Project APE (Utah) ▪ Argyle Canyon Rock Art also is located along Links U404 and U406 adjacent to and in the Project APE (Utah) ▪ The Little Denmark Heritage District is traversed by this alternative route (Utah) **Impacts** ▪ 10.5 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-H has the second highest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $4.8 million in the first few years and $457,000 in remaining years ▪ There are 16 residences within 0.1 mile and 141 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-I	240.2	▪ Class A – 12.2 ▪ Class B – 85.5 ▪ Class C – 142.3	▪ Views within 0.5 mile – 52.2 ▪ Views between 0.5 and 1.0 mile – 34.8	▪ Views within 0.5 mile – 35.3 ▪ Views between 0.5 and 1.0 mile – 27.4	▪ One area would not be in compliance with VRM Class II[1] objectives and three areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the BLM Vernal Field Office RMP: • Enron Recreation Area • Fourmile Bottom-Green River • Nine Mile Canyon Scenic Backway crossing • Argyle Canyon Road parallel condition ▪ Conforms with the Uinta and Manti-La Sal National Forests LRMPs	**Scenery** ▪ High impacts on the Argyle Canyon landscape due to few existing cultural modifications ▪ High impacts on the Wasatch Plateau Alpine landscape where the Project traverses steep, forested terrain **Residences** ▪ No key impacts **Travel Routes** ▪ High impacts on views from the Skyline Drive Scenic Backway due to the separation between the existing transmission line and the Project **Recreation Areas** ▪ High impacts on views from the Indian Creek Campground and Potters Pond where the Project traverses steep, forested terrain **Special Designations** ▪ Low impacts on views from Dinosaur National Monument since views of the Project would be mostly screened by topography ▪ High impacts on views from where the alternative route crosses the Lower	**Inventory** ▪ 1,513 sites identified by the Class I ▪ 70 sites in APE ▪ Key resources include the Old Victory Highway (Colorado and Utah); 24 NRHP-listed properties, the D&RGW Railway, the Buckhorn Flat Railroad, the U.S. Highway 6, and the Emma Park Road (Utah). These resources are outside of the Project APE, except for the U.S. Highway 6, which is in the Project APE ▪ This alternative route avoids the Old Spanish NHT ▪ Nine Mile Canyon ACEC is located along Links U401 and U407 outside of the Project APE; a portion of this ACEC is situated along Links U400 and U404 in the Project APE (Utah) ▪ Argyle Canyon Rock Art is located along Links U404 and U406, adjacent to and in the Project APE (Utah) ▪ The Little Denmark Heritage District (part of the MPNHA) is traversed by this alternative route (Utah)	**Impacts** ▪ Low and temporary impact on employment and population in the broader region, although could be considerably more for smaller communities. ▪ Temporary and adverse impacts on housing resources, ranging from minor to major depending on the availability and capacity of housing and lodging in the area ▪ Increased property taxes of $5.5 million in the first few years and $521,000 in remaining years ▪ There are 12 residences within 0.1 mile and 101 within 0.25 mile with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-4e
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-21 through MV-24)					Cultural Resources	Social and Economic Conditions
		Scenery (miles crossed)	Viewers (miles crossed)		Federal Agency Visual Management Objectives	Summary of Residual Impacts		
			High Concern	Moderate Concern				
						Green River Eligible WSR where the Project would be skylined on the steep canyon walls	**Impacts** ▪ 11.8 miles of high cultural resource intensity. ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-I has the highest miles of high cultural resource intensity	

NOTES:
[1]For descriptions of the four VRM classes, refer to Section 3.2.16.4.
MV = Map Volume

1

TABLE S-5
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE

Alternative Route	Overall Length (miles)	Parallel to Existing Transmission Line (miles [percent])	New Transmission Line Route (miles [percent])	System Reliability	Jurisdiction (miles crossed)					
					Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)										
WYCO-B (Agency and Applicant Preferred Alternative)	206.3	46.3 (22%)	160 (78%)	▪ 0.6 mile parallel to transmission lines within 300 feet[1] ▪ 45.7 miles parallel to transmission lines between 300 to 2,000 feet[1] ▪ Crosses Miners to Sinclair 230kV transmission line once, Bears Ears to Bonanza 345kV transmission line three times, and Hayden to Artesia 138kV three times ▪ 12.0 miles parallel to pipelines within 300 feet ▪ 45.8 miles parallel to pipelines between 300 to 2,000 feet	129.9	0.0	0.0	13.3	0.0	63.9
WYCO-C	210.0	50.4 (24%)	159.6 (76%)	▪ 0.6 mile parallel to transmission lines within 300 feet[1] ▪ 49.7 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Miners to Sinclair 230kV transmission line once, Bears Ears to Bonanza 345kV transmission line three times, and Hayden to Artesia 138kV three times ▪ 29.2 miles parallel to pipelines within 300 feet ▪ 66.2 miles parallel to pipelines between 300 to 2,000 feet	127.9	0.0	0.0	12.8	0.0	68.7
WYCO-D	249.4	156.1 (63%)	92.0 (37%)	▪ 17.3 miles parallel to transmission lines within 300 feet[1] ▪ 138.8 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Miners to Sinclair 230kV transmission line once, Bears Ears to Bonanza 345kV transmission line three times, and Hayden to Artesia 138kV three times (one of the three crossings occurs near Craig, Colorado where these two lines are on the same double-circuit structures) ▪ 15.3 miles parallel to pipelines within 300 feet ▪ 61.3 miles parallel to pipelines between 300 to 2,000 feet	106.5	0.0	0.0	23.7	0.0	119.2
WYCO-F	218.8	46.3 (21%)	172.5 (79%)	▪ 0.6 mile parallel to transmission lines within 300 feet[1] ▪ 45.7 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Miners to Sinclair 230kV transmission line once, Bears Ears to Bonanza 345kV transmission line three times, and Hayden to Artesia 138kV three times ▪ 12.1 miles parallel to pipelines within 300 feet ▪ 47.1 miles parallel to pipelines between 300 to 2,000 feet	141.8	0.0	0.0	13.4	0.0	63.6
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)										
COUT BAX-B	279.9	120.4 (43%)	159.5 (57%)	▪ 7.5 miles parallel to transmission lines within 300 feet[1] ▪ 112.9 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses the Rangely to Meeker 138kV transmission line once, the Mounds SW Park to Moab 138kV transmission line once, Huntington to Pinto 345kV transmission line once, the Huntington to Emery 345kV transmission line once, Mona to Huntington 345kV transmission line three times, Jerusalem to Nebo 138kV transmission line once, Nebo to Martin Marietta 138kV transmission line once, Spanish Fork to Emery 345kV transmission line once, and the Mona to Bonanza 345kV transmission line once ▪ 14.9 miles parallel to pipelines within 300 feet ▪ 24.5 miles parallel to pipelines between 300 to 2,000 feet	172.8	16.9	0.0	30.7	0.0	59.5
COUT BAX-C	290.4	110.4 (38%)	180.0 (62%)	▪ 17.3 miles parallel to linear facilities within 300 feet[1] ▪ 93.0 miles parallel to linear facilities between 300 to 2,000 feet[1] • Crosses the Rangely to Meeker 138kV transmission line once, the Mounds SW Park to Moab 138kV transmission line twice, Huntington to Pinto 345kV transmission line once, the Huntington to Emery 345kV transmission line once, Mona to Huntington 345kV transmission line three times, Jerusalem to Nebo 138kV transmission line once, Nebo to Martin Marietta 138kV transmission line once, Spanish Fork to Emery 345kV transmission line once, and the Mona to Bonanza 345kV transmission line once ▪ 14.9 miles parallel to pipelines within 300 feet ▪ 24.5 miles parallel to pipelines between 300 to 2,000 feet	179.4	16.9	0.0	34.6	0.0	59.5

TABLE S-5
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE

Alternative Route	Overall Length (miles)	Parallel to Existing Transmission Line (miles [percent])	New Transmission Line Route (miles [percent])	System Reliability	Jurisdiction (miles crossed)					
					Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private
COUT BAX-E	292.2	78.3 (27%)	213.6 (73%)	▪ 33.7 miles parallel to transmission lines within 300 feet[1] ▪ 44.6 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses the Rangely to Meeker 138kV transmission line once, the Mounds SW Park to Moab 138kV transmission line three times, Spanish Fork to Emery 345kV transmission line once, Spanish Fork to Huntington 345kV transmission line once, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, Nebo to Martin Marietta 138kV transmission line once, and the Mona to Bonanza 345kV transmission line once ▪ 15.1 miles parallel to pipelines within 300 feet ▪ 30.4 miles parallel to pipelines between 300 to 2,000 feet	191.1	7.7	0.0	26.9	0.0	66.5
Colorado to Utah – U.S. Highway 40 to Central, Utah, to Clover (COUT)										
COUT-A	207.9	158.4 (76%)	49.5 (24%)	▪ 16.2 miles parallel to transmission lines within 300 feet[1] ▪ 142.1 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Artesia to Vernal 138kV transmission line once, Bonanza to Vernal 138kV transmission line once, Mona to Bonanza 345kV transmission line 7 times, Upalco to Ashley 138kV transmission line once, Spanish Fork to Emery 345kV transmission line once, Spanish Fork to Huntington 345kV transmission line once, Mona to Huntington 345kV transmission line once, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 1.9 miles parallel to pipelines within 300 feet ▪ 10.5 miles parallel to pipelines between 300 to 2,000 feet	55.2	19.5	0.0	22.9	0.0	110.3
COUT-B	218.2	202.6 (93%)	15.6 (7%)	▪ 53.1 miles parallel to transmission lines within 300 feet[1] ▪ 149.5 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Rangely to Artesia 138kV transmission line once, Bonanza to Vernal 138kV transmission line once, Mona to Bonanza 345kV transmission line six times, Upalco to Panther 138kV transmission line 15 times, Spanish Fork to Carbon 138kV transmission line twice, Spanish Fork to Emery 345kV transmission line once, Spanish Fork to Huntington 345kV transmission line once, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 1.9 miles parallel to pipelines within 300 feet ▪ 10.3 miles parallel to pipelines between 300 to 2,000 feet	55.7	18.3	0.0	24.8	7.8	111.6
COUT-C (Agency and Applicant Preferred Alternative)	208.2	134.8 (63%)	80.3 (37%)	▪ 11.6 miles parallel to transmission lines within 300 feet[1] ▪ 123.2 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line twice, Rangely to Artesia 138kV transmission line once, Bonanza to Rangely 138kV transmission line once, Upalco to Panther 138kV transmission line once, Spanish Fork to Carbon 138kV transmission line twice, Spanish Fork to Emery 345kV transmission line once, Spanish Fork to Huntington 345kV transmission line once, Mona to Bonanza 345kV transmission line two times, Mona to Huntington 345kV transmission line once, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.4 miles parallel to pipelines within 300 feet ▪ 16.3 miles parallel to pipelines between 300 to 2,000 feet	98.0	8.4	0.0	35.3	1.6	71.8

TABLE S-5
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE

Alternative Route	Overall Length (miles)	Parallel to Existing Transmission Line (miles [percent])	New Transmission Line Route (miles [percent])	System Reliability	Jurisdiction (miles crossed)					
					Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private
COUT-H	200.6	90.0 (45%)	110.6 (55%)	▪ 28.6 miles parallel to transmission lines within 300 feet[1] ▪ 61.4 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line twice, Rangely to Artesia 138kV transmission line once, Bonanza to Rangely 138kV transmission line once, Upalco to Panther 138kV transmission line twice, Carbon to Helper 138kV transmission line once, Spanish Fork to Emery 345kV transmission line once, Spanish Fork to Huntington 345kV transmission line once, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, Nebo to Martin Marietta 138kV transmission line once, and Mona to Bonanza 345kV transmission line once. ▪ 2.0 miles parallel to pipelines within 300 feet ▪ 23.3 miles parallel to pipelines between 300 to 2,000 feet	95.2	7.7	0.0	70.5	1.6	70.5
COUT-I	240.2	127.5 (53%)	112.7 (47%)	▪ 26.7 miles parallel to transmission lines within 300 feet[1] ▪ 100.7 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line twice, Rangely to Artesia 138kV transmission line once, Bonanza to Rangely 138kV transmission line once, Mounds SW Park to Helper 138kV transmission line once, Spanish Fork to Emery 345kV transmission line once, Spanish Fork to Huntington 345kV transmission line twice, McFadden to Huntington Plant 138kV transmission line once, Huntington to Pinto 345kV transmission line once, Huntington to Emery 345kV transmission line once, Mona to Huntington 345kV transmission line three times, Jerusalem to Nebo 138kV transmission line once, Nebo to Martin Marietta 138kV transmission line once, and Mona to Bonanza 345kV transmission line once. ▪ 2.0 miles parallel to pipelines within 300 feet ▪ 15.6 miles parallel to pipelines between 300 to 2,000 feet	122.1	16.9	0.0	36.0	1.6	63.6

NOTES:
[1]Transmission lines include 138kV, 230kV, 345kV, and 500kV transmission lines.
kV = kilovolt

1

TABLE S-6
SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS

Alternative Route	Temporary Disturbance (acres)[1, 4]	Permanent Disturbance (acres)[2, 4]	Total Disturbance (acres)	Transmission-line Right-of-way Vegetation Clearing (acres)[3, 4]	Access Roads	
					Existing[5]	New[6]
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)						
WYCO-B (Agency and Applicant Preferred Alternative)	2,296	959	3,255	325	132	74
WYCO-C	2,338	972	3,310	296	138	72
WYCO-D	2,776	1,106	3,882	258	174	76
WYCO-F	2,436	999	3,434	305	133	86
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)						
COUT BAX-B	3,116	1,577	4,693	2,288	160	120
COUT BAX-C	3,233	1,605	4,837	2,358	173	118
COUT BAX-E	3,253	1,575	4,828	2,253	181	111
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)						
COUT-A	2,318	1,370	3,689	1,855	115	93
COUT-B	2,478	1,303	3,781	2,081	133	86
COUT-C (Agency and Applicant Preferred Alternative)	2,320	1,592	3,912	2,313	129	79
COUT-H	2,233	1,396	3,629	2,090	122	78
COUT-I	2,674	1,605	4,279	2,241	140	101

SOURCE: Assumptions for the calculations are derived from the Applicant's description of the Project (Appendix B).

NOTES:

[1]Temporary Disturbance: Estimated area of disturbance associated with structure work areas (250 by 250 feet per structure), wire tensioning/pulling sites (250 by 400 feet; two every 3-5 miles), wire splicing sites (100 by 100 feet every 9,000 feet), multipurpose construction yards (30-acre site located approximately every 20 miles), helicopter fly yards (15-acre site; located approximately every 5 miles), guard structures (150 by 75 feet; approximately 1.4 structures per 1 mile), and temporary access roads (refer to Table 2-1).

[2]Permanent Disturbance: Estimated area of disturbance associated with the area occupied by structures (pads) (0.08 acre per structure), communication regeneration stations (100 by 100 feet, one station approximately every 55 miles), series compensation stations, and permanent access roads refer to Table 2-1, 2-2, and 2-3.

[3]Right-of-way Vegetation Clearing: vegetation clearing has been estimated in the transmission line right-of-way only. Calculations only include vegetation types with the potential to grow more than 5 feet tall (aspen, mountain forest, mountain shrub, pinyon-juniper, and riparian), and overlap with other disturbance in the Project right-of-way. Vegetation clearing was not calculated for access roads due to the access road design not being available for the alternative routes at this time and is required to accurately identify locations of temporary and permanent access roads. Temporary and permanent disturbance calculations include estimated disturbance for all access roads.

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, they may not sum exactly.

[5]Miles of the reference centerline that are anticipated to use existing and/or improved existing access roads.

[6]Miles of the reference centerline that are anticipated to use newly constructed and/or overland access.