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, the Applicant) to the Bureau of Land Management (BLM) (Case File No. WYW 174597) 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, October 11, 2010, and January 15, 2013, 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. 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 1,425 miles of alternative routes, through 13 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, and Manti-La Sal). Also, depending on the route selected for construction of the transmission line, land within 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 that 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.

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 regarding future transmission needs.

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 special-use authorization for land administered by the USFS. 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 RMP and/or LRMP 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-kilvolt (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 planned Clover Substation (currently being 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 to meet current and forecasted needs of the Applicant's customers as identified in the Applicant's 2013 Integrated Resource Plan.

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 existing 345kV transmission lines (Segments 1 and 2) 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 3), 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.

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.

Since 1996, the population in the counties served by PacifiCorp (the Applicant) has grown substantially. While near-term economic conditions have slowed, the Applicant's service territory continues to grow in all customer segments, and currently forecasts an increase overall energy usage across its system at an average of 2.3 percent per year over the next 5 years and by 2 percent each year over the next 10 years. The Applicant currently has approximately 12,500 MW of existing resources, and its 10-year planning forecast predicts it will need approximately 15,000 MW by 2020.

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…"[1]

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

- 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 at all times, taking into account scheduled and unscheduled system outages
- Allow the Applicant to access energy available from existing markets and to sell excess generation to those existing markets when it is economic to do so for customers
- Support options for generation resource development, including economically feasible renewable generation as specified in the Applicant's current and future Integrated Resource Plans
- Meet the current and reasonably anticipated energy-supply requirements, policies, rules and laws at the federal level and in the states the Applicant serves

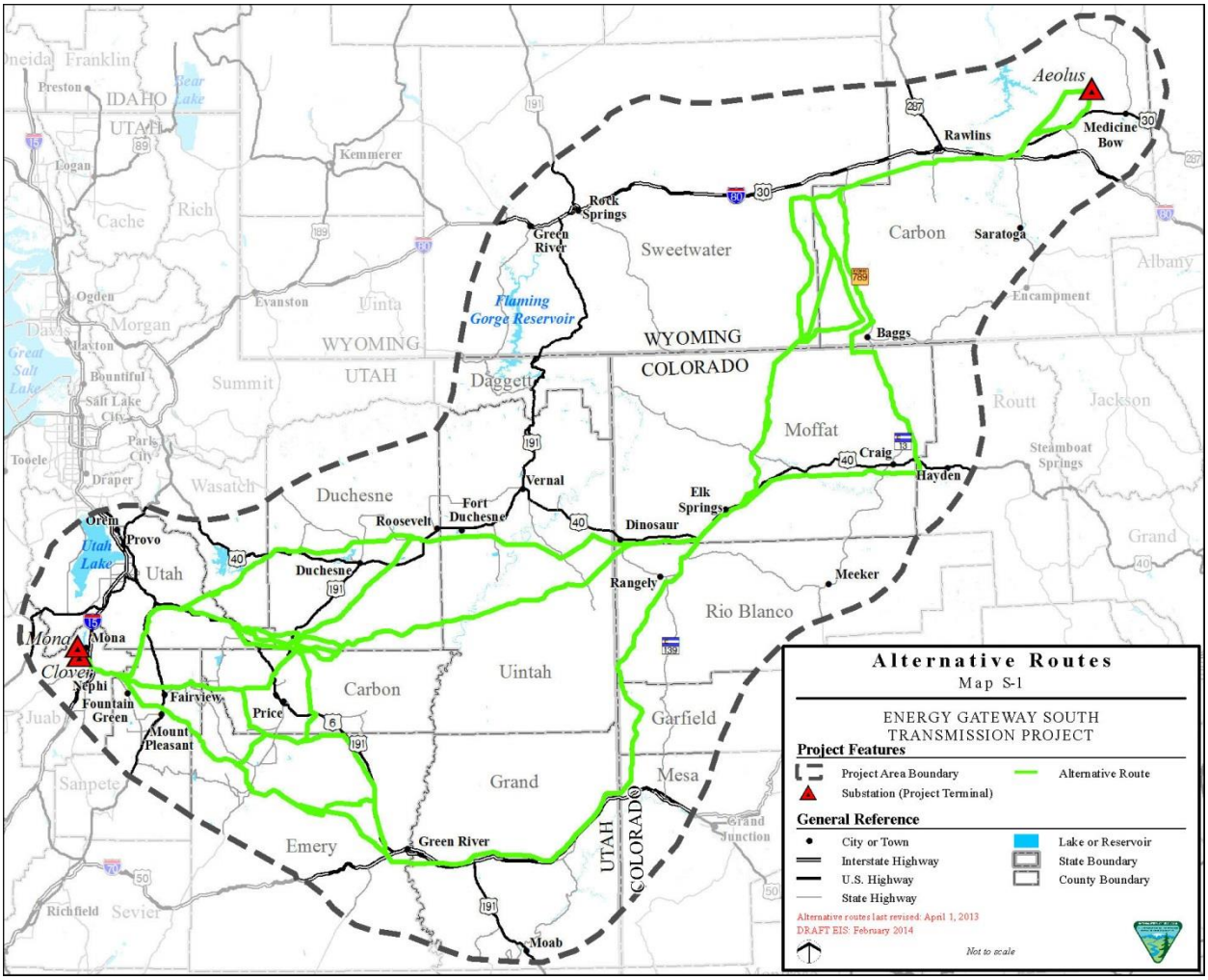
In particular, the Project is needed to fulfill the following key responsibilities of the Applicant:

- **Serve Native Load.** The Applicant is responsible for providing electric service to 1.7 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 to the degree 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.

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 (EPG 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.



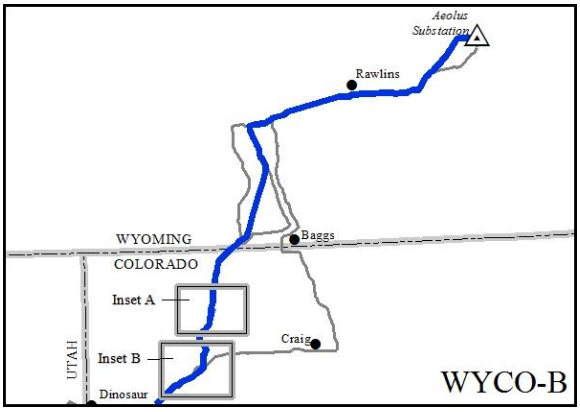
The 500kV transmission line alternative routes are organized in three primary groupings, one grouping in the northern portion of the Project area and two in the southern portion of the Project area. Each of the groupings has multiple alternative routes and some of the alternative routes have route variations. 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 alternatives in each grouping, and route variations that may be associated with each alternative. The Agency Preferred Alternative and Applicant Preferred Alternative are indicated.

TABLE S-1 500-KILOVOLT TRANSMISSION LINE ALTERNATIVE ROUTES AND ROUTE VARIATIONS	
Alternative	**Route Variation**
Northern	
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)	
WYCO-B (Applicant Preferred Alternative)	WYCO-B-1 WYCO-B-2 (Agency Preferred Alternative) WYCO-B-3
WYCO-C	WYCO-C-1 WYCO-C-2 WYCO-C-3
WYCO-D	WYCO-D-1
WYCO-F	WYCO-F-1 WYCO-F-2 WYCO-F-3
Southern	
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)	
COUT BAX-B	Not applicable
COUT BAX-C	Not applicable
COUT BAX-E	Not applicable
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)	
COUT-A	COUT-A-1
COUT-B	COUT-B-1 COUT-B-2 COUT-B-3 COUT-B-4 COUT-B-5
COUT-C	COUT-C-1 COUT-C-2 COUT-C-3 (Agency Preferred Alternative) COUT-C-4 COUT-C-5
COUT-H (Applicant Preferred Alternative)	Not applicable
COUT-I	Not applicable

A description of each alternative and route variation 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.

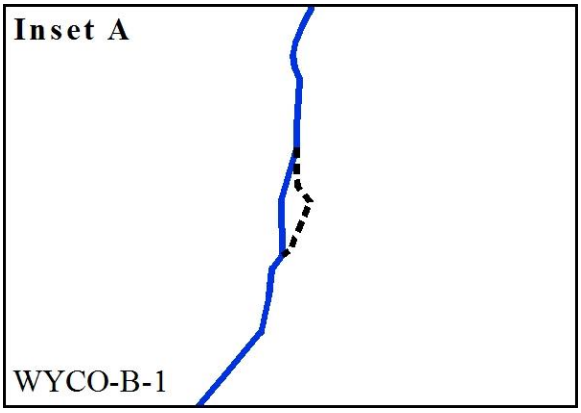
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Alternative WYCO-B (Applicant Preferred Alternative)



Alternative WYCO-B exits the planned Aeolus Substation to the southwest and 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 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 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.



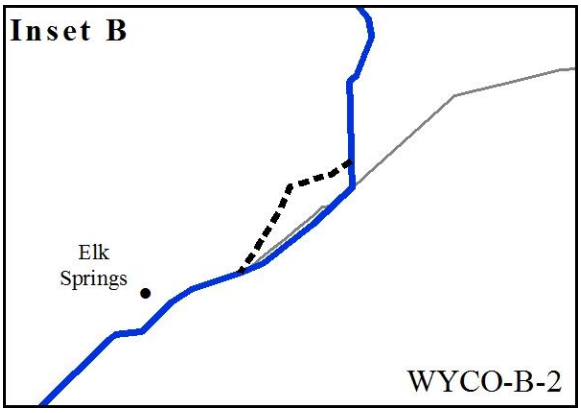
From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover alternative routes to reach the Clover Substation terminus of the Project.

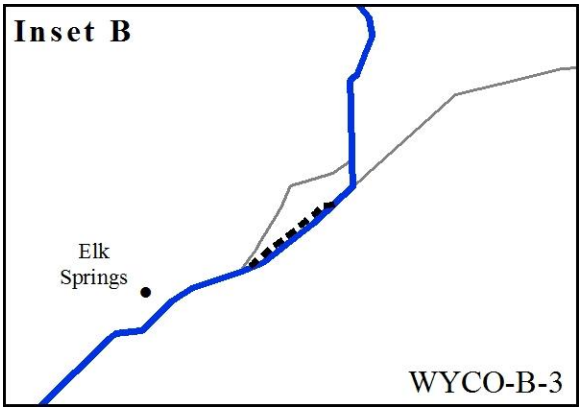
Route Variation WYCO-B-1

A localized variation to the Alternative WYCO-B is approximately 14 miles northwest of Maybell, Colorado, in the Little Snake River valley. This route variation is east of Alternative WYCO-B for a distance of approximately 5 miles, limiting land-use conflicts and engineering constraints by crossing the Little Snake River north of where Alternative WYCO-B crosses the river.

Route Variation WYCO-B-2 (Agency Preferred Alternative)

A localized variation to the Alternative WYCO-B is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids the Tuttle Ranch Conservation Easement, occurring north of Alternative WYCO-B for a distance of approximately 6 miles paralleling U.S. Highway 40 and crossing the Deerlodge Road entrance to Dinosaur National Monument.



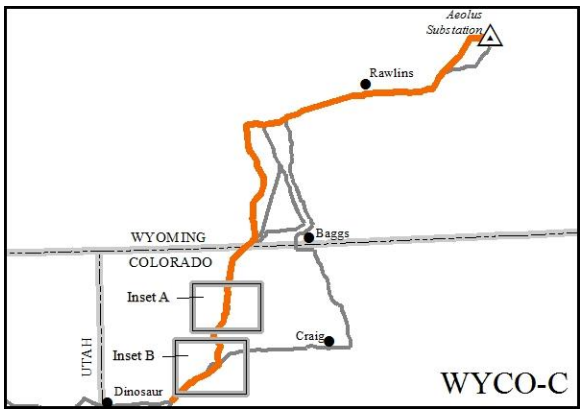


Route Variation WYCO-B-3

A localized variation to the Alternative WYCO-B is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids crossing Deerlodge Road and parallels closer to the existing transmission line through the Tuttle Ranch Conservation Easement than Alternative WYCO-B for a distance of approximately 5 miles.

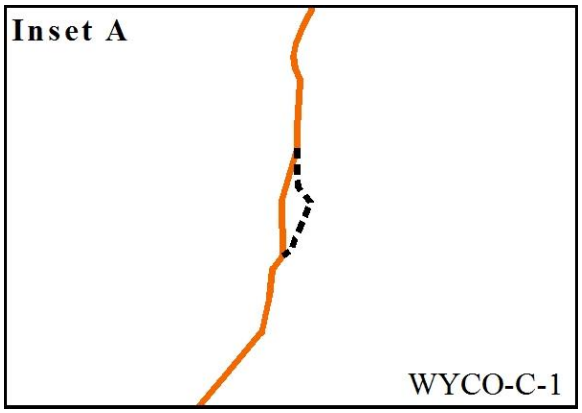
Alternative WYCO-C

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 turning 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 alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover alternative routes to reach the Clover Substation terminus of the Project.

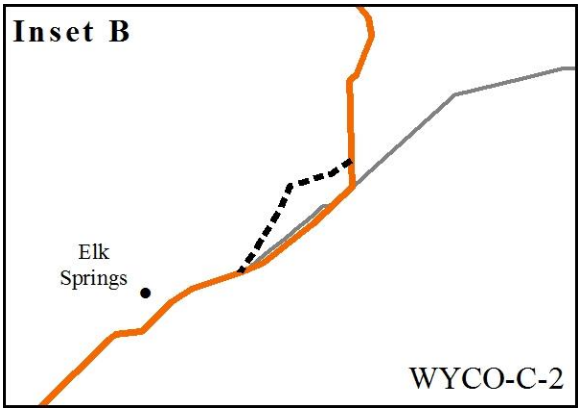


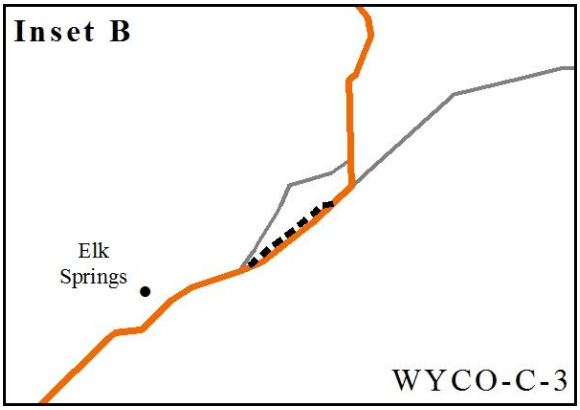
Route Variation WYCO-C-1

A localized variation to the Alternative WYCO-C is approximately 14 miles northwest of Maybell, Colorado in the Little Snake River valley. This route variation is east of Alternative WYCO-C for a distance of approximately 5 miles, limiting land-use conflicts and engineering constraints by crossing the Little Snake River north of where Alternative WYCO-C crosses the river.

Route Variation WYCO-C-2

A localized variation to the Alternative WYCO-C is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids the Tuttle Ranch Conservation Easement, occurring north of Alternative WYCO-C for a distance of approximately 6 miles paralleling U.S. Highway 40 and crossing the Deerlodge Road entrance to Dinosaur National Monument.



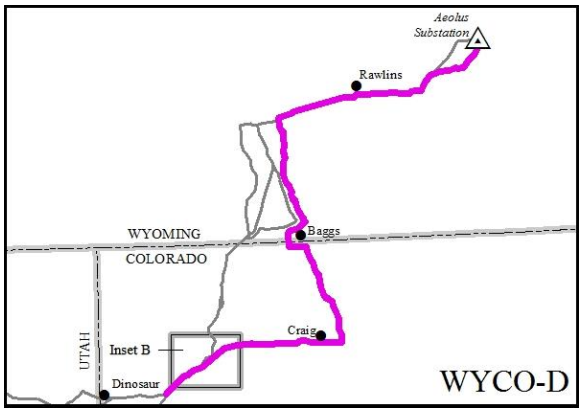


Route Variation WYCO-C-3

A localized variation to the Alternative WYCO-C is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids crossing Deerlodge Road and parallels closer to the existing transmission line through the Tuttle Ranch Conservation Easement than Alternative WYCO-C for a distance of approximately 4.5 miles.

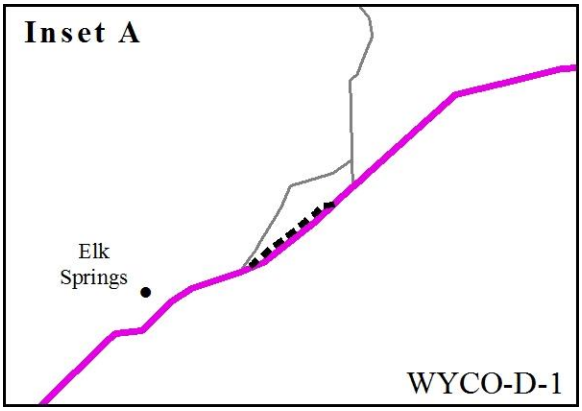
Alternative WYCO-D

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 345kVtransmission 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 alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover alternative routes to reach the Clover Substation terminus of the Project.



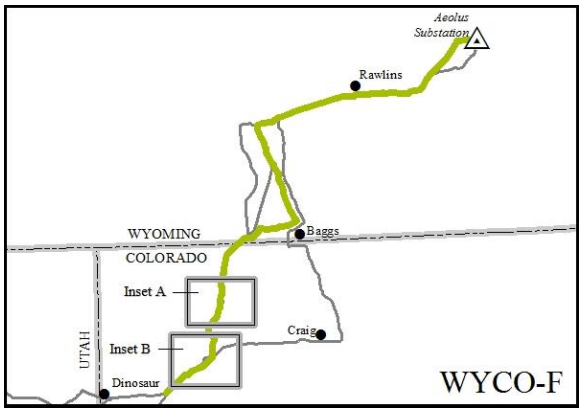
Route Variation WYCO-D-1

A localized variation to the Alternative WYCO-D is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids crossing Deerlodge Road and parallels closer to the existing transmission line through the Tuttle Ranch Conservation Easement than Alternative WYCO-D for a distance of approximately 4.5 miles.

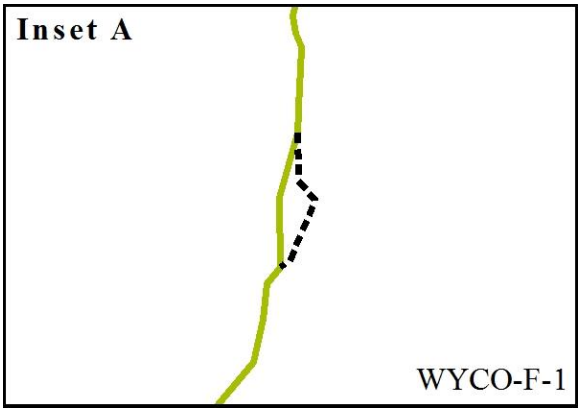
Alternative WYCO-F

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 alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover alternative routes to reach the Clover Substation terminus of the Project.

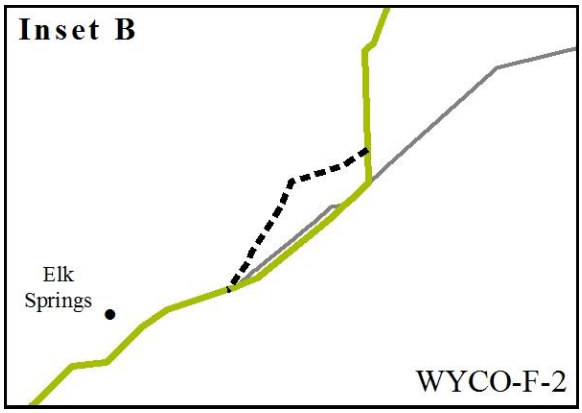


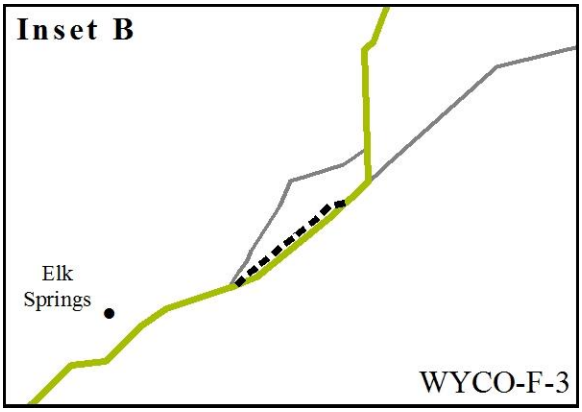
Route Variation WYCO-F-1

A localized variation to the Alternative WYCO-F is approximately 14 miles northwest of Maybell, Colorado in the Little Snake River valley. This route variation is east of Alternative WYCO-F for a distance of approximately 5 miles, limiting land-use conflicts and engineering constraints by crossing the Little Snake River north of where Alternative WYCO-F crosses the river.

Route Variation WYCO-F-2

A localized variation to the Alternative WYCO-F is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids the Tuttle Ranch Conservation Easement, occurring north of Alternative WYCO-F for a distance of approximately 6 miles paralleling U.S. Highway 40 and crossing the Deerlodge Road entrance to Dinosaur National Monument.



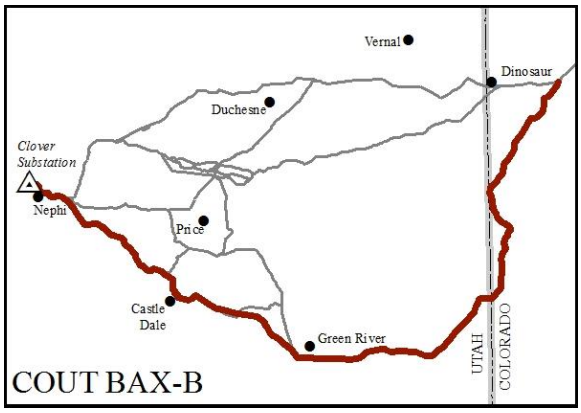


Route Variation WYCO-F-3

A localized variation to the Alternative WYCO-F is approximately 12 miles southwest of Maybell, Colorado. This route variation avoids crossing Deerlodge Road and parallels closer to the existing transmission line through the Tuttle Ranch Conservation Easement than Alternative WYCO-F for a distance of approximately 4.5 miles.

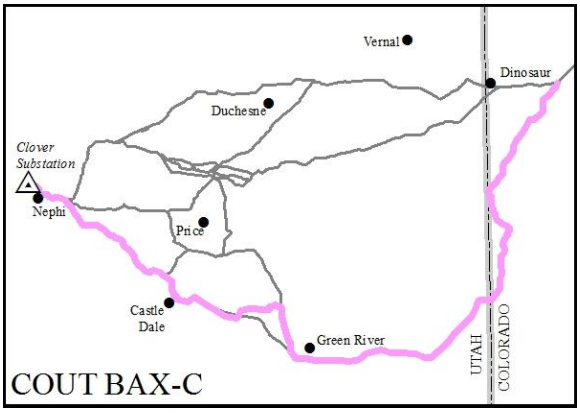
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

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 continuing 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 345kVtransmission 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

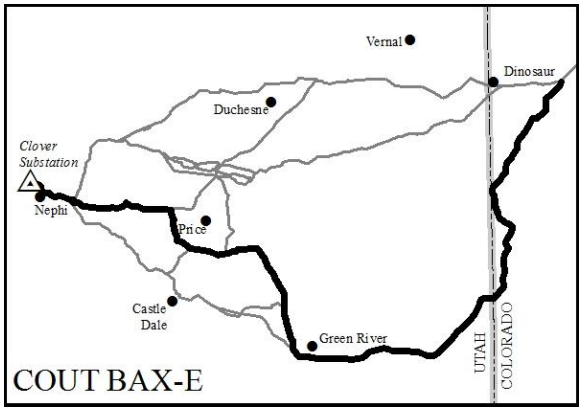
Alternative COUT BAX-C begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route moves southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then 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 Huntington 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

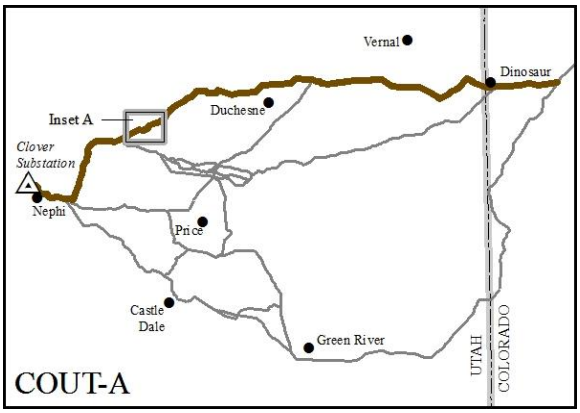
Alternative COUT BAX-E begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this starting point, the alternative heads southwest toward the Rangely to Meeker 138kV transmission line. The alternative route 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.

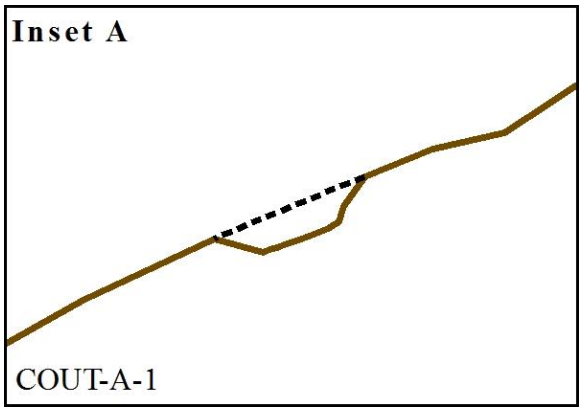
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

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.

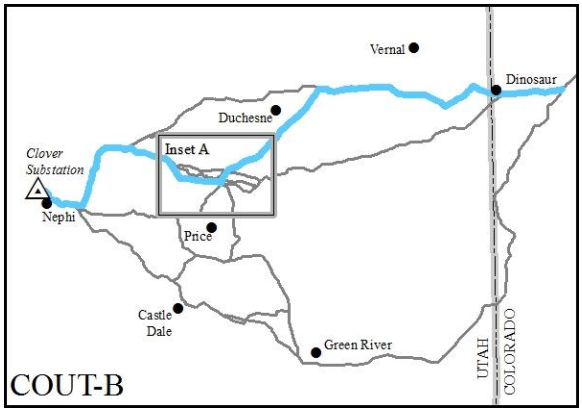
The alternative route parallels the existing Bonanza to Mona 345kV transmission line west in the Uinta Basin, south of Roosevelt, Utah and north of Duchesne, Utah, continuing through the Fruitland, Utah, area. From there it continues southwest through the Uinta National Forest south of Strawberry Reservoir (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.



Route Variation COUT-A-1

A localized variation to the Alternative COUT-A is approximately 6 miles southwest of the Strawberry Reservoir. The alternative route variation maintains paralleling on the northern side of the Bonanza to Mona 345kV transmission line while avoiding two crossings of the line. It crosses through the Chipman Creek IRA (Uinta National Forest Roadless Area #418008) for a distance of approximately 3.4 miles.

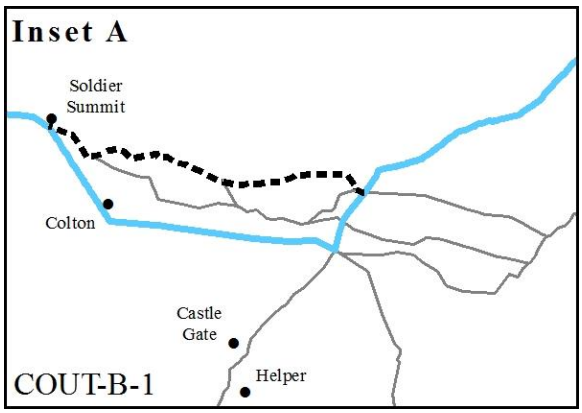
Alternative COUT-B



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.

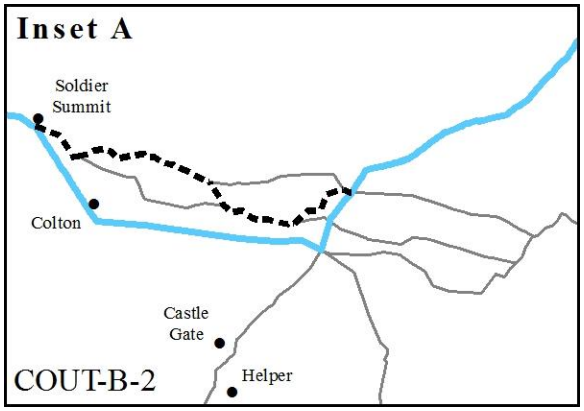


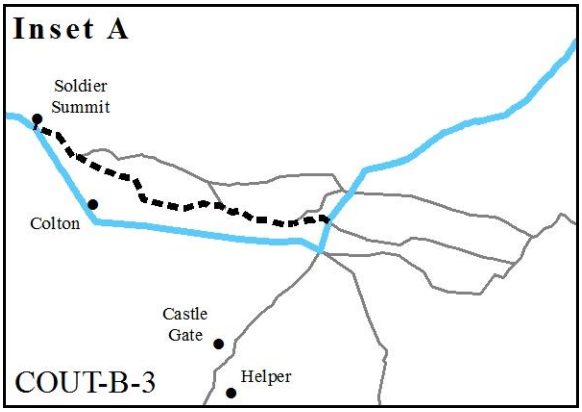
Route Variation COUT-B-1

A localized variation to the Alternative COUT-B is in the Emma Park area approximately 13 miles north of Helper, Utah. This route variation deviates from Alternative COUT-B on Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B, where it traverses Reservation Ridge following the Reservation Ridge Scenic Backway toward Soldier Summit for a distance of approximately 18 miles where it integrates back into Alternative COUT-B.

Route Variation COUT-B-2

A localized variation to the Alternative COUT-B is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-B on Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B, dropping southwest toward U.S. Highway191 where it follows the highway through Indian Canyon for approximately 2 miles; it then crosses the highway continuing northwest for approximately 6 miles toward Reservation Ridge where it traverses the western end of the ridge following the Reservation Ridge Scenic Backway toward Solder Summit for a distance of approximately 12 miles where it integrates back into Alternative COUT-B.





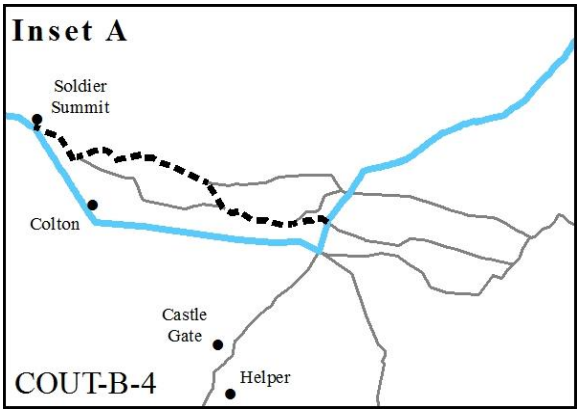
Route Variation COUT-B-3

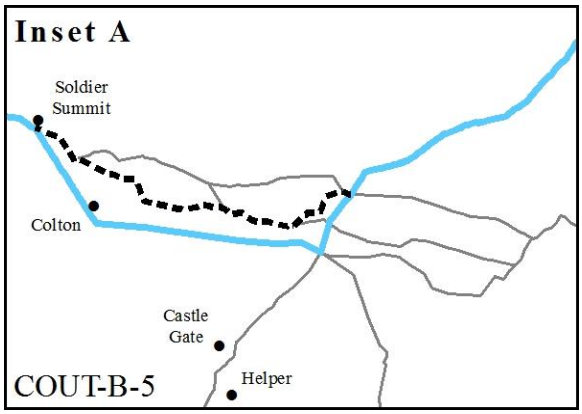
A localized variation to the Alternative COUT-B is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-B to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B and to avoid Reservation Ridge associated with comparable links of Route Variations COUT-B-1 and COUT-B-2. The variation is south of Argyle Ridge crossing U.S. Highway 191 heading

west/northwest toward Solder Summit for a distance of approximately 21 miles where it integrates back into Alternative COUT-B.

Route Variation COUT-B-4

A localized variation to the Alternative COUT-B is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-B south of Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B, crossing U.S. Highway 191 heading northwest for approximately 6 miles toward Reservation Ridge where it then traverses the western end of the ridge following the Reservation Ridge Scenic Backway toward Solder Summit for a distance of approximately 12 miles where it integrates back into Alternative COUT-B.





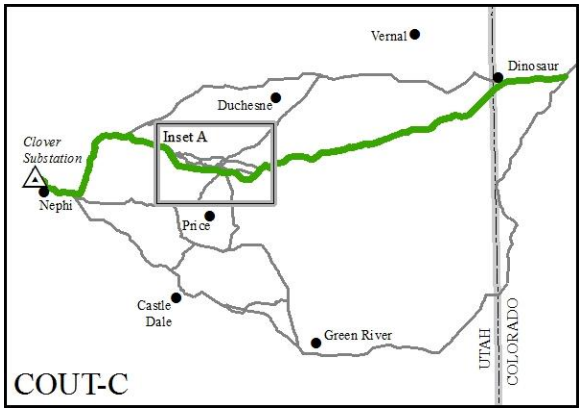
Route Variation COUT-B-5

A localized variation to the Alternative COUT-B is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-B on Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B, dropping southwest toward U.S. Highway 191 where it follows the highway through Indian Canyon for approximately 2 miles. It then crosses U.S. Highway 191 headed west/northwest toward Solder Summit for a distance of approximately 18 miles where it integrates back into Alternative COUT-B.

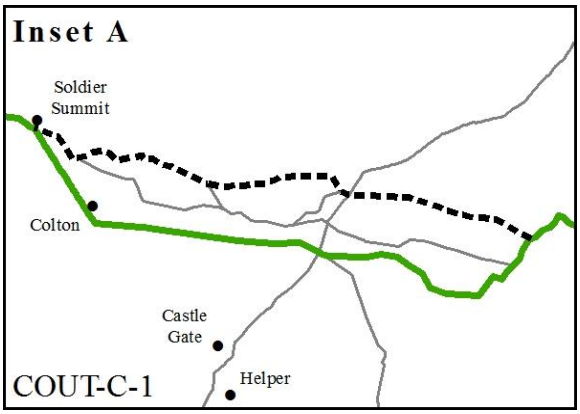
Alternative COUT-C

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 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 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.

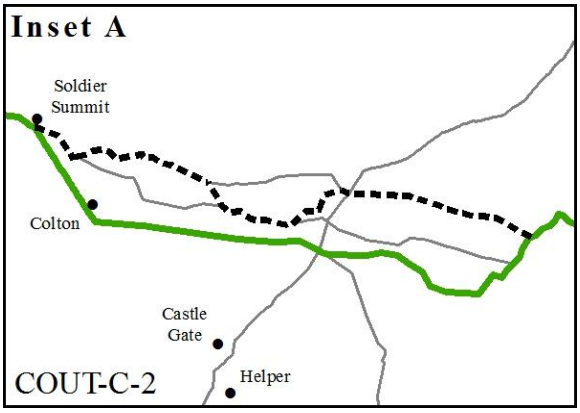


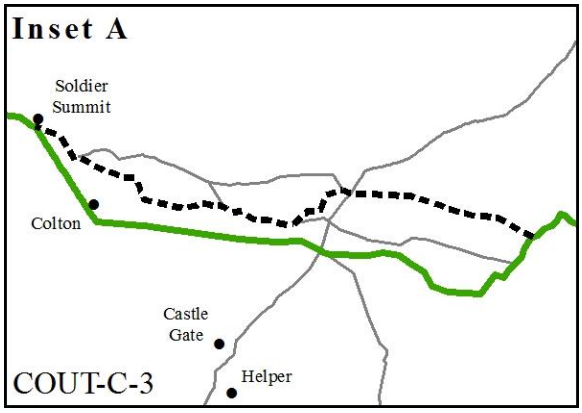
Route Variation COUT-C-1

A localized variation to the Alternative COUT-C is in the Argyle Ridge and Emma Park areas approximately 13 miles north of Helper, Utah. This route variation deviates from Alternative COUT-C traversing Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-C for approximately 12 miles, and then traverses Reservation Ridge following the Reservation Ridge Scenic Backway toward Soldier Summit for a distance of approximately 18 miles where it integrates back into Alternative COUT-C.

Route Variation COUT-C-2

A localized variation to the Alternative COUT-C is in the Argyle Ridge and Emma Park areas approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-C traversing Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-C for approximately 13 miles, and then dropping southwest toward U.S. Highway 191 where it follows the highway through Indian Canyon for approximately 2 miles. It then crosses the highway continuing northwest for approximately 6 miles toward Reservation Ridge where it traverses the western end of the ridge following the Reservation Ridge Scenic Backway toward Solder Summit for a distance of approximately 12 miles where it integrates back into Alternative COUT-C.





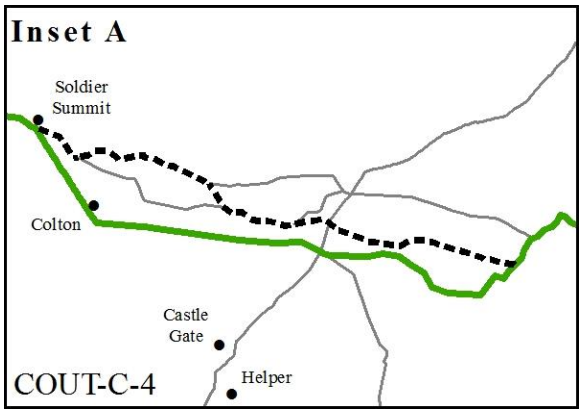
Route Variation COUT-C-3 (Agency Preferred Alternative)

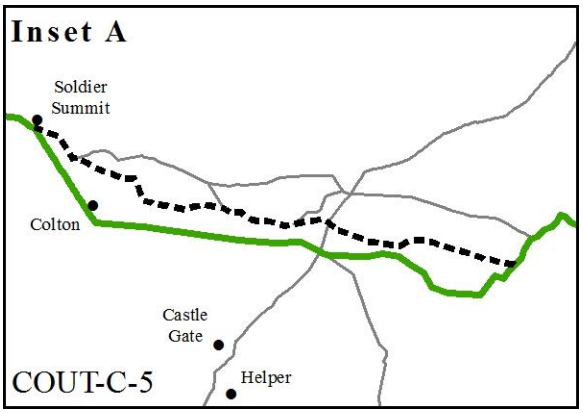
A localized variation to the Alternative COUT-C is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-C to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B and to avoid Reservation Ridge associated with comparable links of route variations COUT-C-1 and COUT-C-2. The variation traverses Argyle Ridge for approximately 12 miles, then 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 toward Solder Summit for a distance of approximately 21 miles where it integrates back into Alternative COUT-C.

Route Variation COUT-C-4

A localized variation to the Alternative COUT-C is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-C south of Argyle Ridge to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B, heading west toward U.S. Highway 191 for approximately 14 miles. It then continue northwest for approximately 6 miles toward Reservation Ridge where it traverses the western end of the ridge following the Reservation Ridge Scenic Backway toward Solder Summit for a distance of approximately 12 miles where it integrates back into Alternative COUT-C.



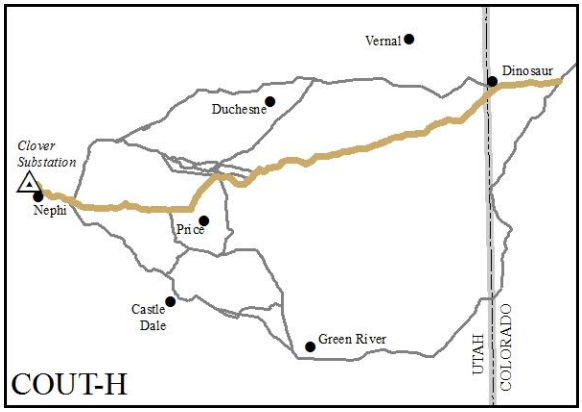


Route Variation COUT-C-5

A localized variation to the Alternative COUT-C is in the Emma Park area approximately 11 miles north of Helper, Utah. This route variation deviates from Alternative COUT-C to avoid sage-grouse habitat associated with comparable links of Alternative COUT-B and to avoid Reservation Ridge associated with comparable links of route variations COUT-C-1 and COUT-C-2. The variation traverses south of Argyle Ridge heading west toward U.S. Highway 191 for approximately 14 miles. It continues west/northwest toward Solder Summit for a distance of approximately 18 miles where it integrates back into Alternative COUT-C.

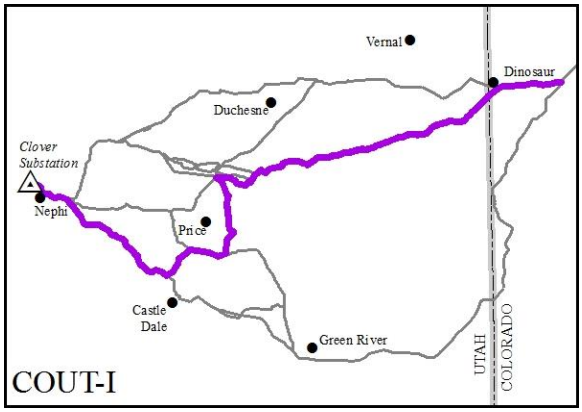
Alternative COUT-H (Applicant Preferred Alternative)

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 that 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, -A1, COUT-B, and COUT-C and route variations 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 that 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 that are highly susceptible to landslides.

Soil Resources

The potential for the Project to affect sensitive soil resources including, soils that are moderately or highly susceptible to water erosion, soils that are 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 including, 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 is 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 differ greatly in the Project area relative to the diversity of the landscape. Issues surrounding the Project and potential effects from construction, operation, and maintenance related activities focused on the 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 is of public and environmental concern.

Quantitative analysis has shown that the alternative routes in Utah would affect the most water resources, followed by those routes in Colorado and then Wyoming. Following implementation of design features of the Proposed Action and selective mitigation measures impacts on water resources were largely avoided or mitigated. Very few moderate residual impacts are expected and mostly low and no identifiable residual impacts would 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 route grouping, and then the WYCO route grouping. Based on results of the impact analysis in addition to the cumulative effects analysis; residual impacts from the Project and other past, present, and reasonably foreseeable future actions (RFFA) show that route groupings and 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.

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. Within the WYCO route grouping, the results of the effects analysis on riparian and wetland vegetation indicate similar impacts among alternative routes with Alternative WYCO-D affecting a slightly lesser extent of wetland vegetation than other alternative routes. Within the COUT BAX route grouping, the results of the effects analysis on riparian and wetland vegetation indicate similar impacts among alternative routes. Within the COUT route grouping, Alternatives COUT-A and COUT-B would affect greater extents of riparian vegetation than Alternatives COUT-C, COUT-H, and COUT-I. Alternatives COUT-C, COUT-H and COUT-I are the only routes that would affect wetland vegetation.

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, 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 within the cumulative impacts 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 within the CIAA.

Special Status Plants

Impacts on federally listed plants and their habitats were identified as a key issue during scoping. All alternative routes considered in the WYCO route grouping 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. Within the COUT BAX route grouping, all 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 alternative routes in the COUT route grouping. Alternative COUT-A would affect potential habitat for 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, present, and RFFAs. For most of the plant species analyzed, the Project would have only a minor contribution to the cumulative effects of past, present, 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 and their route variations would cross Level 1 and Level 2 *Sclerocactus* core areas, which have been affected previously by oil and gas development. The FWS currently recommends no new surface disturbance be authorized within the Level 1 core areas. Alternatives COUT-C, COUT-H, and COUT-I and their route variations could not be implemented without surface-disturbing activities occurring in Level 1 and Level 2 *Sclerocactus* core areas and 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.

Wildlife

All alternative routes would cross similar wildlife habitats and have similar types and extents of past, present, and RFFAs within the CIAA. The Project, in addition to past, present, 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, present, 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 identified as priority species for conservation actions are present along all alternative routes, and the Project would contribute to the incremental 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 short-distance and neotropical migratory species. Implementation of design features and mitigation measures would help avoid or minimize these effects. On a larger scale, range-wide populations and distribution of migratory birds are not expected to be substantially affected by the Project and other past, present, and RFFAs in the CIAA.

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 and other past and present actions, and RFFAs would be similar compared to the total available habitat within the CIAA for each alternative route. The cumulative disturbance from all actions considered could limit the availability of big game crucial/severe habitat within 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, present, 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 within the CIAA.

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 associated 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 considered would affect southwestern willow flycatcher habitat. In Utah, all COUT BAX alternative routes could affect potential southwestern willow flycatcher habitat. There would not be substantial differences in the amount of southwestern willow flycatcher potential habitat crossed by the COUT BAX alternative routes.

Yellow-billed Cuckoo Potential Habitat

All alternative routes and route variations considered for the Project cross potential yellow-billed cuckoo potential habitat. There would not be major differences in the amount of yellow-billed cuckoo potential habitat crossed between the alternative routes considered in each group, though Alternative WYCO-D, COUT BAX-E, and COUT-A and their route variations would affect the most habitat in each route grouping.

Mexican Spotted Owl Potential Habitat

Alternative WYCO-D and Route Variation WYCO-D-1 are the only WYCO alternative routes that would cross potential Mexican spotted owl habitats. The habitats crossed are not known to currently support the species. All COUT BAX alternatives would cross the same potential Mexican spotted owl habitats in Colorado. In Utah, Alternative Route COUT BAX-C would cross the most potential Mexican spotted owl habitat and more potential habitats of higher value for the species compared to the other COUT BAX alternative routes. Alternatives COUT-C, COUT-H, and COUT-I and their route variations all cross potential Mexican spotted owl habitats in the Argyle Canyon area. BLM conducts periodic Mexican spotted owl surveys in these habitats and no owls have been detected. Alternatives COUT-A and COUT-B and their route variations do not cross potential Mexican spotted owl habitats.

Mountain Plover Potential Habitat

All alternative routes and route variations considered for the Project would cross potential mountain plover habitat. Of the WYCO alternatives, Alternative WYCO-C and route variations would affect the most potential habitat for this species compared to the other WYCO alternative routes and route variations. All COUT BAX alternative routes would affect similar amounts of mountain plover potential habitat. The COUT BAX alternative routes would affect less potential mountain plover 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 and their route variations would affect more mountain plover potential habitat compared to other COUT alternative routes.

Black-footed Ferret Management Areas

All alternative routes and route variations 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, and COUT BAX alternative routes and route variations would affect similar amounts of the Wolf Creek black-footed ferret management area. In Utah, Alternatives COUT-C, COUT-H, and COUT-I and their route variations would affect the Coyote Basin black-footed ferret management area and Alternatives COUT-A, and COUT-B and their route variations would affect the Snake John Reef black-footed ferret management area. Alternatives COUT-C, COUT-H, and COUT-I and their route variations would be located adjacent to an existing 345kV steel-lattice transmission line in the management area but would be located within the black-footed ferret management area for a longer distance than Alternatives COUT-A and COUT-B and their route variations.

Pygmy Rabbit Potential Habitat

All WYCO alternative routes and associated route variations would cross potential pygmy rabbit habitat in Wyoming and Colorado. In Wyoming, Alternatives WYCO-B and WYCO-C and their route variations would affect less potential pygmy rabbit compared to Alternatives WYCO-D and WYCO-F and their route variations. In Colorado, Alternatives WYCO-B, WYCO-C, and WYCO-F and their route variations would affect similar amounts of potential pygmy rabbit habitats. Alternative WYCO-D and Route Variation WYCO-D-1 would affect the least amount amounts of potential pygmy rabbit habitat of the WYCO alternatives in Colorado. None of the COUT BAX or COUT alternative routes would cross potential pygmy rabbit potential habitat.

White-tailed Prairie Dog Potential Habitat

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

Greater Sage-grouse

Potential effects of the Project on sage-grouse were identified as a key issue during scoping. Sage-grouse habitat is widespread in the Project area and all alternative routes would cross sage-grouse habitat. As described in Appendix F, Section F.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 Applicant is preparing a voluntary sage-grouse conservation and mitigation plan, including a Habitat Equivalency Analysis, which would outline actions that would be taken to offset unavoidable effects on sage-grouse.

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 and route variation WYCO-D-1 are the only routes 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 their 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 their route variations.

In Colorado, Alternative WYCO-D and Route Variation WYCO-D-1 would cross substantially more preliminary priority sage-grouse habitat and sage-grouse habitats within 4 miles of leks attended by substantially more sage-grouse than all other WYCO alternative routes and route variations. Alternatives WYCO-B, WYCO-C, and WYCO-F and their route variations all cross similar amounts of preliminary priority sage-grouse habitat and sage-grouse lek attendance at leks within 4 miles of these routes and their route variations 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 their route variations. Additionally, the COUT BAX alternative routes would not cross habitats within 4 miles of sage-grouse leks. Alternatives COUT-A, COUT-A-1, COUT-B, COUT-C, COUT-H, and COUT-I 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. Alternatives COUT-B-1, COUT-B-2, COUT-B-3, COUT-B-4, COUT-B-5, COUT-C-1, COUT-C-2, COUT-C-3, COUT-C-4, and COUT-C-5 would avoid the majority of sage-grouse habitat associated with populations that have been identified as a priority for conservation actions and sage-grouse habitat within 4 miles of leks in Utah.

Fish and Aquatic Resources

Fish and aquatic resources in the Project area vary extensively depending on the eco-region 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, initial impacts would be largely mitigated. Low residual impacts would occur but would be limited to where the Project would cross designated critical habitat. The larger discussion of potential impacts was developed from a qualitative standpoint where Project effects were mainly assessed based on the proximity of habitats potentially supporting special status fish and aquatic resources and known locations of special status species. In general, the COUT and COUT BAX route groupings would affect the most habitats based on the large number of available habitats in Utah. Overall, alternative routes in the COUT route grouping 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, present, and RFFAs indicate that alternative routes in route groups 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.

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 agriculture, and/or farm complexes), existing and authorized residential land uses, 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 1 would result in 13.4 miles of moderate impacts resulting from conflicts with agriculture (irrigated and center-pivot agriculture), and a residential mixed use subdivision (authorized) in Duchesne County. Alternative COUT B would result in 11.7 miles of moderate impacts resulting from conflicts with the Ioka cemetery, irrigated agriculture, residential and residential mixed use subdivisions (authorized) in Utah and Duchesne counties. Alternative COUT-C would result in 1.5 miles of moderate impacts resulting from conflicts with irrigated agriculture, residential, and residential mixed use subdivisions (authorized) in Utah County.

Other alternative routes would be anticipated to have fewer miles of moderate and low impacts (Section 3.2.10.5). The results of the cumulative effects analysis indicate that similar impacts on existing land use would occur regardless of the alternative route 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 selected.

Zoning and General Plan Management Direction

Moderate or low residual impacts on zoning and general plan management direction would be anticipated for all alternative routes. Moderate impacts would result from conflict with lands zoned for residential use. The largest area of moderate impacts (14.2 miles) would be associated with the Alternatives COUT BAX-B, COUT BAX-C, and COUT BAX-E.

Parks, Preservation, and Recreation

Moderate or low residual impacts on parks and recreation resources would be anticipated for all alternative routes considered. Moderate impacts would be associated with the Project crossing trails (i.e., National Scenic trails, National Historic trails, and non-motorized trails), Special Recreation Management Areas, and recreation sites. The results of the effects analysis indicate that implementation of Alternatives WYCO-D, COUT BAX-B, and COUT-H would have the largest extent of moderate impacts on parks and recreation resources. A high impact would be anticipated if the Project were to cross a semi-primitive non-motorized Recreation Opportunity Spectrum classification area in the BLM Price Field Office for 1.3 miles (Alternatives COUT-C including Route Variations COUT-C-4 and COUT-C-5; COUT-H; and COUT-I). Typically, development of permanent roads or other facilities is not allowed under the category. 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, special recreation management areas, and recreation sites 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 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 selected.

Special Designations and Other Management Areas

Moderate or low impacts on the management prescribed for specially designated areas and other management areas would be anticipated for all alternative routes considered. Moderate impacts occur where the Project crosses Wildlife Habitat Management Areas, State Wildlife Areas, Wildlife Management Areas, Land and Water Conservation Fund sites, the Deerlodge Road entrance to Dinosaur National Monument, Areas of Critical Environmental Concern, and lands managed by the URMCC. The results of the effects analysis indicate that Alternatives WYCO-D, COUT BAX-E, and COUT-A would result in the greatest extent of moderate impacts on the management prescribed for special designations and other management areas. High impacts would occur where Alternatives WYCO-B-3, WYCO-C-3, and WYCO-D-1 cross the Tuttle Ranch Conservation Easement (an exclusion area for utilities); Alternative COUT BAX-B crosses the Big Hole Area of Critical Environmental Concern (an exclusion area for utilities); Alternatives COUT BAX-C and COUT-I crosses the North Moroni Conservation Easement (an exclusion area for utilities); and Alternatives COUT-C, COUT-H, and COUT-1 cross the Lower Green River suitable Wild and Scenic River segment (i.e., the Project could affect the suitable

designation). Overall, less than 1 percent of the alternative routes considered would affect special designations or other management areas. The greatest extent of cumulative effects of the Project and past, present, and other RFFAs on special designation and other management areas would be associated with Alternatives WYCO-D, COUT BAX-B, COUT BAX-C, and COUT-A.

Wilderness Areas, Wilderness Study Areas, and Non-wilderness Study Area Lands with Wilderness Characteristics

The Project would not directly affect any wilderness areas or WSAs. Non-wilderness study area (non-WSA) lands with wilderness characteristics identified within the 2-mile-wide alternative route study corridor were in the BLM Little Snake, White River, Grand Junction, Moab, and Price Field Offices. The BLM Rawlins Field Office conducted an inventory to determine areas with wilderness characteristics but chose not to carry the analysis of wilderness characteristics into the RMP because valid existing lease rights prohibited implementation of management actions to protect the wilderness characteristics identified. The Project would not cross any non-WSA lands with wilderness characteristics protected and managed by a BLM field office RMP including areas identified as natural areas.

Alternative WYCO-D (and route variation) would have the least impact on these inventoried areas as none of these areas would be traversed by Project alternative routes. The other alternatives routes in this route grouping would have similar levels of impacts on non-WSA lands with wilderness characteristics. The COUT BAX alternative routes would have similar effects on non-WSA lands with wilderness characteristics 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 non-WSA lands with wilderness characteristics since this alternative route traverses the boundary between two areas that form the eastern entrance to the northern portion of the San Rafael Swell and does not parallel an existing transmission line. The COUT alternative routes would have the same impact on non-WSA lands with wilderness characteristics since they share the same alignment in Colorado where the Coal Oil Gulch inventoried area is traversed by the Project adjacent to two existing transmission lines.

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 low impacts on the characteristics and qualities of the Cedar Knoll IRA. Alternative COUT-A's impact on IRAs in the Uinta National Forest would be low; whereas, Route Variation COUT-A-1 would have a moderate impact on the characteristics and qualities of the Chipman Creek IRA. 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. Route Variations COUT-B-1 and COUT-C-1, and to a lesser degree the other route variations of these alternatives except COUT-B-3 and COUT-C-3, would further affect IRAs on the Ashley and Uinta National Forests.

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. Route Variations COUT-B-1 and COUT-C-1, and to a lesser degree the other route variations on

these alternatives except COUT-B-3 and COUT-C-3, would further affect unroaded/undeveloped areas on the Ashley National Forest.

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 in each route groupings 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; and Route Variations COUT-B-1 and COUT-C-1 traverse Reservation Ridge through steep terrain in an area with limited existing cultural modifications producing modifications that may dominate the landscape character. Cumulative effects on scenery also would be similar among the alternative routes in each route grouping, 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, with the exceptions of: 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; Route Variations WYCO-B-2, WYCO-C-2, and WYCO-F-2 would highly affect views for a short period when entering the Dinosaur National Monument from the east entrance; Alternative COUT BAX-C 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; and Route Variations COUT-B-1 and COUT-C-1 would highly affect views from the Reservation Ridge Scenic Backway as the route parallels this scenic route for 12 miles.

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 whereas 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; Route Variations COUT-B-1 and COUT-C-1 would require a land-use plan amendment associated with the BLM VRM Class III lands in the BLM Vernal Field Office and the partial retention and retention of Visual Quality Objectives on the Ashley National Forest in proximity to the Reservation Ridge Scenic Backway; and Alternatives COUT-C, COUT-H, and COUT-I would require a land-use plan amendment 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.

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 alternative routes in the COUT route grouping or in Colorado for the WYCO route groupings 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 alternative in the WYCO route grouping since they share the same alignment adjacent to the National Scenic Trail. Effects on the Overland Historic Trail are similar among the alternative routes considered in the WYCO route grouping 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; therefore, increasing impacts on this trail's resources. Cumulative effects on the Overland Historic Trail would be similar among all the alternative routes in the WYCO route grouping. Impacts on the Cherokee Historic Trail would be similar among the alternative routes considered in the WYCO route grouping 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, and 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 alternative routes considered in the COUT BAX route grouping 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 COUT BAX alternative route 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 in all alternative route groupings. 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 visual impacts on visually sensitive cultural resource sites. Development would introduce visual, atmospheric, and audible elements that could detract from the cultural significance of designated or potential traditional cultural properties and adversely affect cultural resource sites that are eligible, or have been listed in the National Register of Historic Places (NRHP). The introduction of additional development could alter the setting and feeling of numerous NRHP-eligible archaeological sites (e.g., habitation structures, ceremonial sites, and rock art), as well as significant historic properties.

As a result of the presence of past, present, and other RFFAs, including but not limited to the TransWest Express Transmission Project, numerous known cultural resources and potentially significant cultural resources could be affected throughout this portion of the Project area. If colocated, the TransWest Express Transmission Project could have an 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 other RFFAs would result in a greater potential for cumulative effects on numerous known culturally significant resources and other potentially significant cultural resources or historic properties that could be considered NRHP-eligible, or could be determined as eligible for listing in the NRHP. The extent of

cumulative effects on cultural resources would 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 for mitigating impacts on archaeological and historical sites is strong. 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, and it is also likely that a portion of the construction workforce closest to the Wasatch Front would commute from their residences.

Permanent and temporary housing and lodging would be adequate in the region to house temporary residents, with temporary and small impacts on available housing across the region. On a more local level, many of the towns in southwestern Wyoming, northwestern Colorado and eastern and central Utah are small and remote with limited housing resources. Construction efforts and schedules associated with present and future cumulative actions and projects may coincide with the Project schedule, with moderate adverse effects on housing availability and public services in proximate communities. Housing resources would be expected to be more prevalent in the relatively larger communities along the 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 alternative routes and move along the route depending on the location of the work. Therefore, it is not anticipated that 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 from $4.6 million to $7.8 million in the first years of operation and $463,000 to $788,000 in following years the line is in operation. The counties would each receive their proportional share of such tax revenues.

Proximate 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 moderately adversely affect 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 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.

Within 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, while the other alternative routes in this region would have minimal impacts. Colorado-Utah routes have between 99 and 214 residences located within 0.25 mile of the alternative routes and the siting of these routes would have adverse impacts on these proximate 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 proximate 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 10 to 18 residences within 0.10 mile and 106 to 147 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 route locations, it does not appear that 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 informed the Authorized Officers in making the selection of an Agency Preferred Alternative on federal lands. Tables S-3a through S-3d provide a detailed comparative analysis of the resources for each alternative route. The tables identify key resource inventories and associated impacts for each resource based on the analysis presented in Chapter 3. Table S-4 list jurisdiction and the existing linear facilities that would be parallel to the proposed 500kV transmission line along each alternative route and route variation. A summary of estimated disturbance and miles of access roads associated with each alternative route is presented in Table S-5.

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 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 Route Variation WYCO-B-2 and Route Variation COUT-C-3.

Applicant's Preferred Alternative

Alternative WYCO-B and Alternative COUT-H represent the Applicant's Preferred Alternative. Alternative WYCO-B and Alternative COUT-H 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 are 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

TABLE S-2 LIST OF AGENCY WORK SESSIONS	
Date	**Agencies**
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
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, and 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
  - U.S. Forest Service, Intermountain Region
- Department of Defense
  - U.S. Army Corps of Engineers
  - U.S. Army Environmental Center
  - U.S. Navy Region Southwest
- Department of the Interior
  - Bureau of Indian Affairs
  - U.S. Fish and Wildlife Service
  - 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, 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 U.S. Fish and Wildlife Service (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 and candidate species occurring 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 Biological Resources Task Group 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, will prepare 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 route. The BLM will work collaboratively with the FWS to ensure that the FWS has 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.

Additionally, the Applicant has convened a group of sage-grouse biologists from the BLM and cooperating agencies (the Habitat Equivalency Assessment [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.

Cultural Resources

Section 106 (16 U.S.C. 470f) of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effect of their undertakings on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP, historic properties, including those listed on, or eligible for, 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 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, three SHPOs, and ACHP. Additional signatory parties, invited signatory parties (e.g., the Applicant), and concurring parties have yet to be determined.

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 the tribes potentially affected by the undertaking and give those 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[2]. 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 tribes have been contacted.
- Four tribes (Eastern Shoshone Tribe of the Wind River Reservation, Hopi Tribe, Pueblo of Santa Clara, and Ute Mountain Tribe of the Ute Mountain Reservation) have requested consultations and have been included in the development of the Programmatic Agreement as consulting parties.
- One 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.

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

Scoping Process

The Council of 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 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

[2] 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

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*, which is available for review on the BLM Project website (http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html).

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-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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)					
Alternative WYCO-B and Route Variations					
WYCO-B (Applicant Preferred Route)	204.5	**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: 24,172.0 tons (conventional steel erection), 22,159.8 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 78.6 miles of areas with moderate landslide susceptibility ▪ Crosses 9.5 miles of active mines or producing wells and 69.8 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 miles of soils highly susceptible to wind erosion, and 15.7 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.6 miles of moderate impacts anticipated on soil resources	**Inventory** ▪ Crosses high and very high Potential Fossil Yield Classification (PFYC) formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 97.4 miles of high and very high PFYC formations and 88.9 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 47.9 percent of route crosses high and very high PFYC formations and 43.6 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 1 outstanding waters ▪ 34 impaired waters ▪ 32 wetlands and riparian areas ▪ 8 perennial streams **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, 0.8 mile of moderate residual impacts on water resources anticipated
WYCO-B-1	204.9	**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: 24,172.0 tons (conventional steel erection), 22,159.8 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 79.0 miles of areas with moderate landslide susceptibility ▪ Crosses 9.5 miles of active mines or producing wells and 71.6 miles permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 mile of soils highly susceptible to wind erosion, and 13.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.6 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Same as WYCO-B **Impacts** ▪ Crosses 107.3 miles of high and very high PFYC formations and 81.2 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 52.3 percent of route crosses high and very high PFYC formations and 39.6 percent crosses moderate/unknown PFYC formations in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-B **Impacts** ▪ Similar to WYCO-B (with mitigation, 0.7 mile of moderate residual impacts on water resources anticipated)

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-B-2 (Agency Preferred Alternative)	204.5	**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: 24,172.0 tons (conventional steel erection), 22,159.8 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 0.0 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 76.4 miles of areas with moderate landslide susceptibility ▪ Crosses 9.5 miles of active mines or producing wells and 69.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.3 mile soils highly susceptible to wind erosion, and 13.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Same as WYCO-B **Impacts** ▪ Crosses 107.8 miles of high and very high PFYC formations and 80 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 52.7 percent of route crosses high and very high PFYC formations and 39.1 percent crosses moderate/unknown PFYC formations in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-B **Impacts** ▪ Same as WYCO-B
WYCO-B-3	204.5	**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: 24,172.0 tons (conventional steel erection), 22,159.8 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.0 mile from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of area with high landslide susceptibility and 77.5 miles of moderate landslide susceptibility ▪ Crosses 9.5 miles of active mines or producing wells and 70.0 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.3 miles of soils highly susceptible to wind erosion, and 15.4 miles Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Same as WYCO-B **Impacts** ▪ Crosses 107.5 miles of high and very high PFYC formations and 80.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 52.6 percent of route crosses high and very high PFYC formations and 39.3 percent crosses moderate/unknown PFYC formations in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-B **Impacts** ▪ Same as WYCO-B

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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)
Alternative WYCO-C and Route Variations					
WYCO-C	210.4	**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: 24,869.3 tons (conventional steel erection), 22,799.1 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 9.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 mile of areas with high landslide susceptibility and 73.9 miles of areas with moderate landslide susceptibility ▪ Crosses 9.3 miles of active mines or producing wells and 74.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 mile of soils highly susceptible to wind erosion, and 15.7 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts on the Project and on mineral resources anticipated ▪ With mitigation, 1.6 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 107.7 miles of high and very high PFYC formations and 84.5 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 51.6 percent of WYCO-C crosses high and very high PFYC formations and 40.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 1 outstanding waters ▪ 34 impaired waters ▪ 28 wetlands and riparian areas ▪ 8 perennial streams **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, 1.0 mile of moderate residual impacts on water resources anticipated
WYCO-C-1	210.8	**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: 24,869.3 tons (conventional steel erection), 22,799.1 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 9.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 74.3 miles of areas with moderate landslide susceptibility ▪ Crosses 9.3 miles of active mines or producing wells and 76.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 mile of soils highly susceptible to wind erosion, and 13.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.6 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 113.7 miles of high and very high PFYC formations and 81.2 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 54 percent of route crosses high and very high PFYC formations and 38.5 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-C **Impacts** ▪ Same as WYCO-C

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-C-2	210.4	**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: 24,869.3 tons (conventional steel erection), 22,799.1 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ No Class I (pristine) area near transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 9.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 71.7 miles of areas with moderate landslide susceptibility ▪ Crosses 9.3 miles of active mines or producing wells and 76.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.3 mile of soils highly susceptible to wind erosion, and 15.3 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 114.2 miles of high and very high PFYC formations and 80.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 53.8 percent of route crosses high and very high PFYC formations and 37.8 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-C **Impacts** ▪ Same as WYCO-C
WYCO-C-3	210.4	**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: 24,869.3 tons (conventional steel erection), 22,799.1 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.0 mile from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 9.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 72.8 miles of areas with moderate landslide susceptibility ▪ Crosses 9.3 miles of active mines or producing wells and 75.1 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 mile of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 113.9 miles of high and very high PFYC formations and 80.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 54.1 percent of route crosses high and very high PFYC formations and 38.2 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-C **Impacts** ▪ Same as WYCO-C

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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)
Alternative WYCO-D and Route Variation					
WYCO-D	250.0	**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: 29,550.1 tons (conventional steel erection), 27,090.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.3 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 9.8 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 8.6 miles of areas with high landslide susceptibility and 120.4 miles of areas with moderate landslide susceptibility (the greatest distance of the WYCO routes) ▪ Crosses 7.0 miles of active mines or producing wells and 83.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.8 mile of soils highly susceptible to water erosion, 1.1 miles of soils highly susceptible to wind erosion, and 26.2 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts on the Project and on mineral resources anticipated ▪ With mitigation, 1.9 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.3 miles of high known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 127.7 miles of high and very high PFYC formations and 96.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 51.3 percent of route crosses high and very high PFYC formations and 38.7 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 1 outstanding waters ▪ 36 impaired waters ▪ 37 wetlands and riparian areas ▪ 21 perennial streams **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, 2.7 miles of moderate residual impacts on water resources anticipated
WYCO-D-1	250.0	**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: 29,550.1 tons (conventional steel erection), 27,090.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.0 mile from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.3 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 9.8 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 8.6 miles of areas with high landslide susceptibility, and 118.3 miles of moderate landslide susceptibility ▪ Crosses 7.0 miles of active mines or producing wells and 83.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.8 mile of soils highly susceptible to water erosion, 1.0 mile of soils highly susceptible to wind erosion, and 25.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.8 mile of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.3 miles of high known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 132.5 miles of high and very high PFYC formations and 96.0 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 53 percent of route crosses high and very high PFYC formations and 38.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-D **Impacts** ▪ Same as WYCO-D

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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)
Alternative WYCO-F and Route Variations					
WYCO-F	218.9	**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: 25,874.0 tons (conventional steel erection), 23,720.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 mile of areas with high landslide susceptibility and 86.4 miles of areas with moderate landslide susceptibility ▪ Crosses 9.6 miles of active mines or producing wells and 59.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 miles of soils highly susceptible to wind erosion, and 15.7 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.6 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 105.6 miles of high and very high PFYC formations and 96.2 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 48.6 percent of route crosses high and very high PFYC formations and 44.1 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 1 outstanding waters ▪ 34 impaired waters ▪ 33 wetlands and riparian areas ▪ 8 perennial streams **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 the Little Snake and the main stem 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, 1.0 mile of moderate residual impacts on water resources anticipated
WYCO-F-1	219.3	**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: 25,874.0 tons (conventional steel erection), 23,720.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 86.8 miles of areas with moderate landslide susceptibility ▪ Crosses 9.6 miles of active mines or producing wells and 61.5 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.4 miles of soils highly susceptible to wind erosion, and 13.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources are anticipated ▪ With mitigation, 1.6 miles of moderate impacts on soils resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 123.2 miles of high and very high PFYC formations and 81.2 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 56.2 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** ▪ Same as WYCO-F **Impacts** ▪ Same as WYCO-F

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-F-2	218.9	**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: 25,874.0 tons (conventional steel erection), 23,720.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ No Class I (pristine) area near transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 84.2 miles of areas with moderate landslide susceptibility ▪ Crosses 9.6 miles of active mines or producing wells and 59.3 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.3 miles of soils highly susceptible to wind erosion, and 15.3 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 123.7 miles of high and very high PFYC formations and 80 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 56.5 percent of route crosses high and very high PFYC formations and 36.5 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-F **Impacts** ▪ Same as WYCO- F
WYCO-F-3	218.9	**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: 25,874.0 tons (conventional steel erection), 23,720.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.0 mile from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 6.9 miles of areas with potential mine subsidence in the Hanna, Wyoming area and 8.6 miles of area with moderate potential for flooding near the various rivers, streams, and drainages, 2.7 miles of areas with high landslide susceptibility and 85.3 miles of areas with moderate landslide susceptibility ▪ Crosses 9.6 miles of active mines or producing wells and 59.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.2 mile of soils highly susceptible to water erosion, 1.3 miles of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, only low impacts from geologic hazards on the Project and on mineral resources anticipated ▪ With mitigation, 1.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.9 miles of high known locality density and 0.3 mile of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 123.4 miles of high and very high PFYC formations and 80.3 miles of moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ 56.4 percent of route crosses high and very high PFYC formations and 36.7 percent crosses moderate/unknown PFYC formations requiring mitigation in Wyoming and Colorado ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ Same as WYCO-F **Impacts** ▪ Same as WYCO- F

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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	279.2	**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: 39,930.8 tons (conventional steel erection), 37,632.2 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 8.2 miles from transmission line (Arches National Park) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 2.1 miles of areas with potential mine subsidence, 1.5 miles of Quaternary faults and 45.6 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 47.1 miles of areas with high landslide susceptibility and 131.0 miles of areas with moderate landslide susceptibility ▪ Crosses 13.5 miles of active mines or producing wells and 154.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.9 mile of soils highly susceptible to water erosion, 1.6 miles of soils highly susceptible to wind erosion, and 28.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 15.5 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 2.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ 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 79.6 miles of high and very high PFYC formations and 129.7 miles of moderate/undetermined PFYC formations requiring mitigation in Colorado and Utah ▪ 28.3 percent of route crosses high and very high PFYC formations and 46.1 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 32 outstanding waters ▪ 166 impaired waters ▪ 28 wetlands and riparian areas ▪ 23 perennial streams **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, sedimentation, and altered soil infiltration rates ▪ 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, 4.3 miles of moderate residual impacts on water resources anticipated
COUT BAX-C	289.7	**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: 41,432.5 tons (conventional steel erection), 39,047.4 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 8.2 miles from transmission line (Arches National Park) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 2.1 miles of areas with potential mine subsidence, 1.5 miles of Quaternary faults and 41.1 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 46.5 miles of areas with high landslide susceptibility and 122.9 miles of areas with moderate landslide susceptibility ▪ Crosses 13.7 miles of active mines or producing wells and 159.2 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.9 mile of soils highly susceptible to water erosion, 1.0 mile of soils highly susceptible to wind erosion, and 28.9 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 15.5 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 1.9 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ 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 80.9 miles of high and very high PFYC formations and 138.5 miles of moderate/undetermined PFYC formations requiring mitigation in Colorado and Utah ▪ 27.7 percent of route crosses high and very high PFYC formations and 47.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 32 outstanding waters ▪ 173 impaired waters ▪ 29 wetlands and riparian areas ▪ 23 perennial streams **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, sedimentation, and altered soil infiltration rates ▪ 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, 4.3 miles of moderate residual impacts on water resources anticipated (same extent as COUT BAX-B)

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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	291.5	**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: 41,690.0 tons (conventional steel erection), 39,290.1 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 8.2 miles from transmission line (Arches National Park) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 5.6 miles of areas with potential mine subsidence, 1.8 miles of Quaternary faults and 44.3 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 38.6 miles of areas with high landslide susceptibility and 121.2 miles of areas with moderate landslide susceptibility ▪ Crosses 19.0 miles of active mines or producing wells and 159.5 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 0.9 mile of soils highly susceptible to water erosion and 32.5 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 14.4 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts and on mineral resources anticipated ▪ With mitigation, 0.9 mile of moderate impacts on soil resources anticipated	**Inventory** ▪ 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 85.6 miles of high and very high PFYC formations and 142.1 miles of moderate/undetermined PFYC formations requiring mitigation in Colorado and Utah ▪ 29.1 percent of route crosses high and very high PFYC formations and 48.3 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 26 outstanding waters ▪ 225 impaired waters ▪ 34 wetlands and riparian areas ▪ 39 perennial streams **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, 5.2 miles of moderate residual impacts on water resources anticipated
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)					
Alternative COUT-A and Route Variation					
COUT-A	206.0	**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: 29,461.9 tons (conventional steel erection), 27,765.9 tons (helicopter steel erection) **Impacts** ▪ 29.5 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 53.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 32.3 miles of areas with high landslide susceptibility and 44.6 miles of areas with moderate landslide susceptibility ▪ Crosses 11.2 miles of active mines or producing wells and 66.5 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 8.3 miles of soils highly susceptible to water erosion; 0.3 mile of soils highly susceptible to wind erosion; and 14.8 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 23.2 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 8.6 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 121.3 miles of high and very high PFYC formations and 18.9 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 56.2 percent of route crosses high and very high PFYC formations and 9.5 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 57 outstanding waters ▪ 196 impaired waters ▪ 44 wetlands and riparian areas ▪ 43 perennial streams **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 ▪ With mitigation, 4.4 miles of moderate residual impacts on water resources anticipated

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-A-1	205.6	**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: 29,461.9 tons (conventional steel erection), 27,765.9 tons (helicopter steel erection) **Impacts** ▪ 29.7 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 0.5 mile of Quaternary faults, 53.5 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 33.1 miles of areas with high landslide susceptibility, and 44.2 miles of areas with moderate landslide susceptibility ▪ Crosses 11.1 miles of active mines or producing wells and 66.2 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 8.5 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 14.8 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 23.1 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts and on mineral resources anticipated ▪ With mitigation, 8.8 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Same as COUT-A **Impacts** ▪ Same as COUT-A	**Inventory** ▪ 56 outstanding waters ▪ 196 impaired waters ▪ 44 wetlands and riparian areas ▪ 44 perennial streams **Impacts** ▪ Similar to COUT-A (with mitigation, 4.4 miles of moderate residual impacts on water resources anticipated)
Alternative COUT-B and Route Variations					
COUT-B	216.0	**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: 30,892.0 tons (conventional steel erection), 29,113.7 tons (helicopter steel erection) **Impacts** ▪ 49.2 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 433) ▪ Crosses 0.8 mile of Quaternary faults and 43.5 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 32.9 miles of areas with high landslide susceptibility and 67.1 miles of areas with moderate landslide susceptibility ▪ Crosses 13.6 miles of active mines or producing wells and 76.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 10.8 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 13.3 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 11.1 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 138.4 miles of high and very high PFYC formations and 18.9 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 63.3 percent of route crosses high and very high PFYC formations and 9.2 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 82 outstanding waters ▪ 244 impaired waters ▪ 42 wetlands and riparian areas ▪ 68 perennial streams **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, 8.5 miles of moderate residual impacts on water resources anticipated

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-B-1	212.7	**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: 30,892.0 tons (conventional steel erection), 29,113.7 tons (helicopter steel erection) **Impacts** ▪ 45.6 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 433) ▪ Crosses 0.8 mile of Quaternary faults and 47.9 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 38.3 miles of areas with high landslide susceptibility and 66.9 miles of areas with moderate landslide susceptibility ▪ Crosses 13.0 miles of active mines or producing wells and 71.2 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 12.6 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 17.2 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts and on mineral resources anticipated ▪ With mitigation, 12.9 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 140.3 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 66 percent of route crosses high and very high PFYC formations and 6.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 88 outstanding waters ▪ 210 impaired waters ▪ 42 wetlands and riparian areas ▪ 58 perennial streams **Impacts** ▪ Similar to COUT-B (with mitigation, 8.6 miles of moderate residual impacts on water resources anticipated)
COUT-B-2	214.2	**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: 30,892.0 tons (conventional steel erection), 29,113.7 tons (helicopter steel erection) **Impacts** ▪ 46.4 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 433) ▪ Crosses 0.8 mile of Quaternary faults and 46.1 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 41.9 miles of areas with high landslide susceptibility and 66.0 miles of areas with moderate landslide susceptibility ▪ Crosses 13.0 miles of active mines or producing wells and 72.0 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 12.4 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 15.8 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 12.7 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 141.8 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 66 percent of route crosses high and very high PFYC formations and 6.3 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 88 outstanding waters ▪ 225 impaired waters ▪ 43 wetlands and riparian areas ▪ 67 perennial streams **Impacts** ▪ Similar to COUT-B (with mitigation, 9.2 miles of moderate residual impacts on water resources anticipated)

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-B-3	213.9	**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: 30,892.0 tons (conventional steel erection), 29,113.7 tons (helicopter steel erection) **Impacts** ▪ 47.2 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 433) ▪ Crosses 0.8 mile of Quaternary faults and 46.8 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 41.2 miles of areas with high landslide susceptibility and 66.3 miles of areas with moderate landslide susceptibility ▪ Crosses 13.0 miles of active mines or producing wells and 70.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 10.8 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 16.4 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 11.1 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations, and Flagstaff Formation ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 141.5 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 66 percent of route crosses high and very high PFYC formations and 6.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 81 outstanding waters ▪ 215 impaired waters ▪ 40 wetlands and riparian areas ▪ 66 perennial streams **Impacts** ▪ Similar to COUT-B (with mitigation, 8.8 miles of moderate residual impacts on water resources anticipated)
COUT-B-4	214.2	**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: 30,892.0 tons (conventional steel erection), 29,113.7 tons (helicopter steel erection) **Impacts** ▪ 46.4 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 433) ▪ Crosses 0.8 mile of Quaternary faults and 46.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 41.7 miles of areas with high landslide susceptibility and 66.2 miles of areas with moderate landslide susceptibility ▪ Crosses 13.0 miles of active mines or producing wells and 72.5 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 12.4 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 16.1 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 12.7 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 141.8 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 66.2 percent of route crosses high and very high PFYC formations and 6.3 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 88 outstanding waters ▪ 218 impaired waters ▪ 42 wetlands and riparian areas ▪ 64 perennial streams **Impacts** ▪ Similar to COUT-B (with mitigation, 9.0 miles of moderate residual impacts on water resources anticipated)

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-B-5	213.9	**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: 30,892.0 tons (conventional steel erection), 29,113.7 tons (helicopter steel erection) **Impacts** ▪ 47.2 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.1 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses 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 433) ▪ Crosses 0.8 mile of Quaternary faults and 46.5 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 41.4 miles of areas with high landslide susceptibility and 66.1 miles of areas with moderate landslide susceptibility ▪ Crosses 13.0 miles of active mines or producing wells and 70.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 10.8 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 15.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 16.1 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 11.1 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.5 miles of high known locality density and 2.6 miles of moderate known locality density within 1.0 mile of the centerline **Impacts** ▪ Crosses 141.5 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 63.2 percent of route crosses high and very high PFYC formations and 6.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 81 outstanding waters ▪ 222 impaired waters ▪ 41 wetlands and riparian areas ▪ 69 perennial streams **Impacts** ▪ Similar to COUT-B (with mitigation, 9.0 miles of moderate residual impacts on water resources anticipated)
Alternative COUT-C and Route Variations					
COUT-C	209.8	**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: 30,005.3 tons (conventional steel erection), 28,278.1 tons (helicopter steel erection) **Impacts** ▪ 49.2 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ Crosses 0.3 mile of Quaternary faults and 26.1 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 35.1 miles of areas with high landslide susceptibility and 67.5 miles of areas with moderate landslide susceptibility ▪ Crosses 21.1 miles of active mines or producing wells and 103.6 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 7.4 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 7.2 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 19.7 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 7.7 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 152.2 miles of high and very high PFYC formations and 20.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 71.3 percent of route crosses high and very high PFYC formations and 11.1 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 40 outstanding waters ▪ 87 impaired water ▪ 21 wetland and riparian areas ▪ 43 perennial streams **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 water quality ▪ With mitigation, 3.2 miles of moderate residual impacts on water resources anticipated

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-C-1	206.4	**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: 30,005.3 tons (conventional steel erection), 28,278.1 tons (helicopter steel erection) **Impacts** ▪ 45.6 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ Crosses 0.3 mile of Quaternary faults, 34.7 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 47.8 miles of areas with high landslide susceptibility, and 59.7 miles of areas with moderate landslide susceptibility ▪ Crosses 20.4 miles of active mines or producing wells and 97.5 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 9.2 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 6.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 26.6 miles of moderate impacts from geologic hazards to the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 9.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 153.7 miles of high and very high PFYC formations and 15.3 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 74.5 percent of route crosses high and very high PFYC formations and 7.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 46 outstanding waters ▪ 55 impaired water ▪ 20 wetland and riparian areas ▪ 31 perennial streams **Impacts** ▪ Same as COUT-C
COUT-C-2	207.9	**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: 30,005.3 tons (conventional steel erection), 28,278.1 tons (helicopter steel erection) **Impacts** ▪ 46.4 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ Crosses 0.3 mile of Quaternary faults, 32.9 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 51.4 miles of areas with high landslide susceptibility, and 58.8 miles of areas with moderate landslide susceptibility ▪ Crosses 20.4 miles of active mines or producing wells and 98.3 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 9.0 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 6.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 25.2 miles of moderate impacts from geologic hazards to the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 9.3 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses154.9 miles of high and very high PFYC formations and 15.3 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 74.5 percent of route crosses high and very high PFYC formations and 7.4 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 46 outstanding waters ▪ 70 impaired water ▪ 21 wetland and riparian areas ▪ 40 perennial streams **Impacts** ▪ Similar to COUT-C (with mitigation, 3.8 miles of moderate residual impacts on water resources anticipated)

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-C-3 (Agency Preferred Alternative)	207.6	**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: 30,005.3 tons (conventional steel erection), 28,278.1 tons (helicopter steel erection) **Impacts** ▪ 47.2 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ Crosses 0.3 mile of Quaternary faults, 33.3 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 50.9 miles of areas with high landslide susceptibility, and 58.9 miles of areas with moderate landslide susceptibility ▪ Crosses 20.4 miles of active mines or producing wells and 96.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 7.4 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 6.4 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 25.5 miles of moderate impacts from geologic hazards to the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 7.7 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 154.6 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 74.5 percent of route crosses high and very high PFYC formations and 6.6 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 39 outstanding waters ▪ 67 impaired water ▪ 19 wetland and riparian areas ▪ 42 perennial streams **Impacts** ▪ Similar to COUT-C (with mitigation, 3.6 miles of moderate residual impacts on water resources anticipated)
COUT-C-4	207.9	**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: 30,005.3 tons (conventional steel erection), 28,278.1 tons (helicopter steel erection) **Impacts** ▪ 46.4 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ Crosses 0.3 mile of Quaternary faults, 35.7 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 51.8 miles of areas with high landslide susceptibility, and 59.4 miles of areas with moderate landslide susceptibility ▪ Crosses 20.2 miles of active mines or producing wells and 99.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 9.0 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 6.6 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 29.1 miles of moderate impacts from geologic hazards to the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 9.3 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 154.9 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 74.5 percent of route crosses high and very high PFYC formations and 6.5 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 46 outstanding waters ▪ 67 impaired water ▪ 20 wetland and riparian areas ▪ 40 perennial streams **Impacts** ▪ Similar to COUT-C (with mitigation, 3.8 miles of moderate residual impacts on water resources anticipated)

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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-C-5	207.6	**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: 30,005.3 tons (conventional steel erection), 28,278.1 tons (helicopter steel erection) **Impacts** ▪ 47.2 miles of transmission line would traverse the Utah County, Utah PM_{10} nonattainment area. Modeling shows ambient PM_{10} standards should not be violated due to this Project. ▪ A conformity determination would be required if this alternative is chosen ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Soil erosion issues present on the Ashley National Forest where soils derived from the Green River Formation (Link 433) ▪ Crosses 0.3 mile of Quaternary faults, 36.1 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 21.3 miles of areas with high landslide susceptibility, and 59.5 miles of areas with moderate landslide susceptibility ▪ Crosses 20.2 miles of active mines or producing wells and 97.8 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 7.4 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 6.6 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 29.4 miles of moderate impacts from geologic hazards to the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 7.7 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of 207.6 moderate/unknown PFYC formations **Impacts** ▪ Crosses 154.6 miles of high and very high PFYC formations and 13.6 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 74.5 percent of route crosses high and very high PFYC formations and 6.6 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 39 outstanding waters ▪ 64 impaired water ▪ 18 wetland and riparian areas ▪ 42 perennial streams **Impacts** ▪ Similar to COUT-C (with mitigation, 3.6 miles of moderate residual impacts on water resources anticipated)
Alternatives COUT-H and COUT-I					
COUT-H (Applicant Preferred Route)	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: 28,689.6 tons (conventional steel erection), 27,038.0 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument). ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses potential for mine subsidence in the Huntington, Utah area ▪ Crosses Uinta Basin oil fields that have large numbers of producing wells ▪ Crosses 7.3 mile of area with potential mine subsidence, 0.7 mile of Quaternary faults and 24.8 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 37.1 miles of areas with high landslide susceptibility and 50.6 miles of areas with moderate landslide susceptibility ▪ Crosses 23.8 miles of active mines or producing wells and 98.9 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 1.4 miles of soils highly susceptible to water erosion, 0.3 mile of soils highly susceptible to wind erosion, and 12.0 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 21.0 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 1.7 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 141.1 miles of high and very high PFYC formations and 31.0 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 69.2 percent of route crosses high and very high PFYC formations and 15.9 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 27 outstanding waters ▪ 97 impaired waters ▪ 19 wetlands and riparian areas ▪ 44 perennial streams **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, 2.6 miles of moderate residual impacts on water resources anticipated

TABLE S-3a
ALTERNATIVE ROUTE COMPARISON – WATER RESOURCES, GEOLOGY, AND SOILS; PALEONTOLOGY; AND AIR QUALITY

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: 221.4 tons (conventional steel erection), 213.7 tons (helicopter steel erection) • NOx: 143.8 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: 1.4 tons (conventional steel erection), 1.6 tons (helicopter steel erection) • VOC: 22.6 tons (conventional steel erection), 22.7 tons (helicopter steel erection) • CO_2e: 34,353.1 tons (conventional steel erection), 32,375.5 tons (helicopter steel erection) **Impacts** ▪ Would not traverse any nonattainment or maintenance areas ▪ Nearest Class I (pristine) area is 1.2 miles from transmission line (Dinosaur National Monument) ▪ Impacts below all ambient standards except potentially 1-hour NO_2	**Inventory** ▪ Crosses potential geologic hazards, including Quaternary faults and landslide areas along Link U630 ▪ Crosses potential for mine subsidence in the Huntington, Utah area ▪ Crosses the Uinta Basin oil fields that have large numbers of producing wells ▪ Crosses 1.1 miles of area with potential mine subsidence, 0.8 mile of Quaternary faults and 26.4 miles of areas with moderate potential for flooding near the various rivers, streams, and drainages, 44.3 miles of areas with high landslide susceptibility and 53.4 miles of areas with moderate landslide susceptibility ▪ Crosses 26.4 miles of active mines or producing wells and 145.2 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases ▪ Crosses 1.2 miles of soils highly susceptible to water erosion, 1.3 miles of soils highly susceptible to wind erosion, and 13.0 miles of Prime or Unique Farmland **Impacts** ▪ With mitigation, 21.0 miles of moderate impacts from geologic hazards on the Project anticipated ▪ With mitigation, only low impacts on mineral resources anticipated ▪ With mitigation, 2.5 miles of moderate impacts on soil resources anticipated	**Inventory** ▪ Crosses high and very high PFYC formations ▪ Crosses 1.6 miles of high known locality density and 14.0 miles of moderate/unknown PFYC formations **Impacts** ▪ Crosses 132.6 miles of high and very high PFYC formations and 53.0 miles of moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ 54.5 percent of route crosses high and very high PFYC formations and 21.8 percent crosses moderate/unknown PFYC formations requiring mitigation in Colorado and Utah ▪ With mitigation, only low impacts on paleontological resources anticipated	**Inventory** ▪ 33 outstanding waters ▪ 145 impaired waters ▪ 21 wetlands and riparian areas ▪ 39 perennial streams **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, 3.8 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
$PM_{2.5}$ = 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-3b
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)						
Alternative WYCO-B and Route Variations						
WYCO-B (Applicant Preferred Alternative)	204.5	**Inventory** Crosses: ▪ 4.6 miles of barren/sparsely vegetated vegetation communities ▪ 2.5 miles of grassland vegetation communities ▪ 2.1 miles of riparian vegetation communities ▪ 0.2 mile of water communities ▪ 1.9 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within wire and border zones would alter vegetative structure and function as habitat ▪ Disturbance in riparian, water, and wetland areas would affect water quality and the ability of these areas to provide water filtration and groundwater recharge ▪ With mitigation, 118.2 miles of moderate impacts and 2.1 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-55)	**Inventory** Crosses**:** ▪ 0.2 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 (Table 3-55)	**Inventory** Crosses**:** ▪ 58.3 miles of elk substantial habitat ▪ 138.2 miles of mule deer substantial habitat ▪ 164.1 miles of pronghorn substantial habitat ▪ 8.3 miles of moose substantial habitat ▪ 10.4 miles of elk calving grounds ▪ 10.4 miles of elk summer concentration areas ▪ 25.0 miles of elk winter range ▪ 1.7 miles of elk year-long habitat ▪ 3.5 miles of elk migration corridors ▪ 25.0 miles of mule deer winter range ▪ 23.2 miles of mule deer year-long habitat ▪ 4.1 miles of mule deer migration corridors ▪ 15.7 miles of pronghorn winter range ▪ 30.1 miles of pronghorn year-long habitat ▪ 10.3 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 (Tables 3-85 and 3-86)	**Inventory** Crosses**:** ▪ 19.7 miles of black-footed ferret management area ▪ 10.2 miles of white-tailed prairie dog potential habitat ▪ 96.5 miles of pygmy rabbit potential habitat ▪ 51.0 miles of mountain plover potential habitat ▪ 51.9 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 51 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 101.8 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 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 409 aquatic habitats ▪ 4 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-B-1	204.9	**Inventory** Same as WYCO-B, except crosses: ▪ 4.8 miles of barren/sparsely vegetated vegetation communities **Impacts** ▪ With mitigation, 119.5 miles of moderate impacts and 2.1 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-B **Impacts** Same as WYCO-B	**Inventory** Compared to WYCO-B, crosses: ▪ 0.4 more miles of elk substantial habitat ▪ 0.8 more miles of mule deer substantial habitat ▪ 0.4 more miles of pronghorn substantial habitat ▪ 0.7 more miles of elk winter range ▪ 1.1 fewer miles of mule deer winter range ▪ 1.4 more miles of pronghorn winter range **Impacts** ▪ High and moderate impacts anticipated are same as WYCO-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-85 and 3-86)	**Inventory** Compared to WYCO-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer miles of white-tailed prairie dog potential habitat ▪ 1.1 more miles of pygmy rabbit potential habitat ▪ 0.7 fewer miles of mountain plover potential habitat ▪ 0.1 more miles of yellow-billed cuckoo potential habitat ▪ 0.2 more miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ No difference in greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.6 additional miles of moderate, and 0.2 additional miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 411 aquatic habitats ▪ 4 element occurrences **Impacts** Same as WYCO-B

TABLE S-3b
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)
WYCO-B-2 (Agency Preferred Alternative)	204.5	**Inventory** Same as WYCO-B, except crosses: ▪ 1.8 miles of grassland vegetation communities **Impacts** ▪ With mitigation, 118.6 miles of moderate impacts and 2.1 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-B **Impacts** Same as WYCO-B	**Inventory** Compared to WYCO-B, crosses: ▪ 3.3 fewer miles of elk substantial habitat ▪ 0.7 more miles of mule deer substantial habitat ▪ 1.4 fewer miles of elk winter range crossed ▪ 2.8 more miles of mule deer winter range ▪ 0.1 fewer miles of pronghorn winter range **Impacts** ▪ High and moderate impacts anticipated are same as WYCO-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-85 and 3-86)	**Inventory** Compared to WYCO-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 1.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ 0.3 fewer miles of mountain plover potential habitat ▪ 0.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 1.2 fewer miles of moderate, and 0.4 additional miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 418 aquatic habitats ▪ 4 element occurrences **Impacts** Same as WYCO-B
WYCO-B-3	204.5	**Inventory** Same as WYCO-B, except crosses: ▪ 2.1 miles of grassland vegetation communities **Impacts** Same as WYCO-B, except: ▪ With mitigation, 118.6 miles of moderate impacts and 2.1 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-B **Impacts** Same as WYCO-B	**Inventory** Compared to WYCO-B, crosses: ▪ 0.3 more miles of elk winter range **Impacts** ▪ Same as WYCO-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-85 and 3-86)	**Inventory** Compared to WYCO-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ 0.2 fewer miles of mountain plover potential habitat ▪ 1.1 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.3 fewer miles of moderate, and 0.7 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 408 aquatic habitats ▪ 4 element occurrences **Impacts** Same as WYCO-B

TABLE S-3b 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)**
Alternative WYCO-C and Route Variations						
WYCO-C	210.4	**Inventory** Crosses: ▪ 2.4 miles of barren/sparsely vegetated communities ▪ 2.5 miles of grassland vegetation communities ▪ 1.6 miles of riparian vegetation communities ▪ 0.2 mile of water communities ▪ 2.7 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within wire and border zones would alter vegetative structure and function as habitat ▪ Disturbance in riparian, water, and wetland areas would affect water quality and the ability of these areas to provide water filtration and groundwater recharge ▪ With mitigation, 115.8 miles of moderate impacts and 1.6 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-55)	**Inventory** Crosses**:** ▪ 0.2 mile of Ute ladies'-tresses potential habitat crossed **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 (Table 3-55)	**Inventory** Crosses**:** ▪ 60.0 miles of elk substantial habitat crossed ▪ 144.1 miles of mule deer substantial habitat crossed ▪ 171.3 miles of pronghorn substantial habitat crossed ▪ 8.3 miles of moose substantial habitat crossed ▪ 10.4 miles of elk calving grounds crossed ▪ 10.4 miles of elk summer concentration areas crossed ▪ 25.0 miles of elk winter range crossed ▪ 1.7 miles of elk year-long habitat crossed ▪ 3.5 miles of elk migration corridors crossed ▪ 25.0 miles of mule deer winter range crossed ▪ 23.2 miles of mule deer year-long habitat crossed ▪ 4.2 miles of mule deer migration corridors crossed ▪ 15.7 miles of pronghorn winter range crossed ▪ 28.8 miles of pronghorn year-long habitat crossed ▪ 8.5 miles of pronghorn migration corridors crossed **Impacts** ▪ Combined residual impacts on elk, mule deer and pronghorn after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Crosses**:** ▪ 19.7 miles of black-footed ferret management area crossed ▪ 9.9 miles of white-tailed prairie dog potential habitat crossed ▪ 95.2 miles of pygmy rabbit potential habitat crossed ▪ 59.8 miles of mountain plover potential habitat crossed ▪ 51.9 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 50 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 35.6 miles of low, 104.9 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 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 448 aquatic habitats ▪ 0 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
WYCO-C-1	210.8	**Inventory** Same as WYCO-C, except crosses: ▪ 2.6 miles of barren/sparsely vegetated communities **Impacts** Same as WYCO-B, except: ▪ With mitigation, 117.1 miles of moderate impacts and 1.6 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-C **Impacts** Same as WYCO-C	**Inventory** Compared to WYCO-C, crosses: ▪ 0.4 more miles of elk substantial habitat ▪ 0.8 more miles of mule deer substantial habitat ▪ 0.4 more miles of pronghorn substantial habitat ▪ 0.7 more miles of elk winter range ▪ 1.1 fewer miles of mule deer winter range ▪ 1.4 more miles of pronghorn winter range **Impacts** ▪ Same as WYCO-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Compared to WYCO-C, crosses**:** ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer miles of white-tailed prairie dog potential habitat ▪ 1.1 more miles of pygmy rabbit potential habitat ▪ 0.7 fewer miles of mountain plover potential habitat ▪ 0.1 more miles of southwestern willow flycatcher potential habitat ▪ 0.2 more miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ No difference in greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.6 additional miles of moderate and 0.2 additional miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 450 aquatic habitats ▪ 0 element occurrences **Impacts** Same as WYCO-C

TABLE S-3b
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)
WYCO-C-2	210.4	**Inventory** Same as WYCO-C, except crosses: ▪ 1.8 miles of grassland communities **Impacts** Same as WYCO-B, except: ▪ With mitigation, 116.2 miles of moderate impacts and 1.6 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-C **Impacts** Same as WYCO-C	**Inventory** Compared to WYCO-C, crosses: ▪ 3.3 fewer miles of elk substantial habitat ▪ 0.7 more miles of mule deer substantial habitat ▪ 1.4 fewer miles of elk winter range ▪ 2.8 more miles of mule deer winter range ▪ 0.1 fewer miles of pronghorn winter range **Impacts** ▪ Same as WYCO-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Compared to WYCO-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 1.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ 0.3 fewer miles of mountain plover potential habitat ▪ 0.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 1.2 fewer miles of moderate and 0.4 additional miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 457 aquatic habitats ▪ 0 element occurrences **Impacts** Same as WYCO-C
WYCO-C-3	210.4	**Inventory** Same as WYCO-C, except crosses: ▪ 2.1 miles of grassland communities **Impacts** Same as WYCO-B, except: ▪ With mitigation, 116.2 miles of moderate impacts and 1.6 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-C **Impacts** Same as WYCO-C	**Inventory** Compared to WYCO-C, would not cross additional miles of big game substantial or crucial habitat **Impacts** ▪ Same as WYCO-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Compared to WYCO-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ 0.2 fewer miles of mountain plover potential habitat ▪ 1.1 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.3 fewer miles of moderate and 0.7 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 447 aquatic habitats ▪ 0 element occurrences **Impacts** Same as WYCO-C

TABLE S-3b 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)**
Alternative WYCO-D and Route Variation						
WYCO-D	250.0	**Inventory** Crosses: ▪ 0.3 mile of barren/sparsely vegetated communities ▪ 7.9 miles of grassland vegetation communities ▪ 0.2 mile of mountain shrub vegetation communities ▪ 3.3 miles of riparian vegetation communities ▪ 0.3 mile of water communities ▪ 2.0 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 176.9 miles of moderate impacts and 3.3 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-55).	**Inventory** Crosses: ▪ 1.5 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 (Table 3-55)	**Inventory** Crosses: ▪ 126.5 miles of elk substantial habitat ▪ 141.1 miles of mule deer substantial habitat ▪ 179.3 miles of pronghorn substantial habitat ▪ 13.2 miles of moose substantial habitat ▪ 94.6 miles of elk winter range ▪ 35.8 miles of elk migration corridors ▪ 56.7 miles of mule deer winter range ▪ 49.0 miles of mule deer year-long habitat ▪ 11.3 miles of mule deer migration corridors ▪ 42.4 miles of pronghorn winter range ▪ 45.6 miles of pronghorn year-long habitat ▪ 6.3 miles of pronghorn migration corridors **Impacts** ▪ Combined residual impacts on elk, mule deer and pronghorn after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Crosses: ▪ 21.9 miles of black-footed ferret management area ▪ 11.7 miles of white-tailed prairie dog potential habitat ▪ 100.4 miles of pygmy rabbit potential habitat ▪ 36.3 miles of mountain plover potential habitat ▪ 1.2 Mexican spotted owl potential habitat ▪ 0.8 mile of yellow-billed cuckoo potential habitat ▪ 110.3 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 79 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 91.9 miles of moderate and 122.0 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 5 critical habitats ▪ 532 aquatic habitats ▪ 19 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-D-1	250.0	**Inventory** Same as WYCO-D, except crosses: ▪ 7.5 miles of grassland communities **Impacts** Same as WYCO-D, except: ▪ With mitigation, 177.3 miles of moderate impacts and 3.3 miles of high impacts anticipated	**Inventory** Same as WYCO-D **Impacts** Same as WYCO-D	**Inventory** Same as WYCO-D **Impacts** ▪ Same as WYCO-D ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-85 and 3-86)	**Inventory** Compared to WYCO-D, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ No difference in miles of Mexican spotted owl potential habitat ▪ No difference in miles of yellow-billed cuckoo potential habitat ▪ 1.1 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.3 fewer miles of moderate and 0.7 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 5 critical habitats ▪ 531 aquatic habitats ▪ 19 element occurrences **Impacts** Same as WYCO-D

TABLE S-3b
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)
Alternative WYCO-F and Route Variations						
WYCO-F	218.9	**Inventory** Crosses: ▪ 1.9 miles of barren/sparsely vegetated communities ▪ 2.5 miles of grassland vegetation communities ▪ 2.0 miles of riparian vegetation communities ▪ 0.2 mile of water communities ▪ 1.9 miles of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 135.9 miles of moderate impacts and 2.0 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-55)	**Inventory** Crosses: ▪ 0.5 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 (Table 3-55)	**Inventory** Crosses: ▪ 57.8 miles of elk substantial habitat ▪ 141.8 miles of mule deer substantial habitat ▪ 169.6 miles of pronghorn substantial habitat ▪ 8.3 miles of moose substantial habitat ▪ 10.4 miles of elk calving grounds ▪ 10.4 miles of elk summer concentration areas ▪ 25.0 miles of elk winter range ▪ 1.7 miles of elk year-long habitat ▪ 3.5 miles of elk migration corridors ▪ 25.0 miles of mule deer winter range ▪ 34.0 miles of mule deer year-long habitat ▪ 14.0 miles of mule deer migration corridors ▪ 15.7 miles of pronghorn winter range ▪ 39.0 miles of pronghorn year-long habitat ▪ 12.3 miles of pronghorn migration corridors **Impacts** ▪ Combined residual impacts on elk, mule deer and pronghorn after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Crosses: ▪ 19.7 miles of black-footed ferret management area ▪ 10.4 miles of white-tailed prairie dog potential habitat ▪ 115.1 miles of pygmy rabbit potential habitat ▪ 64.0 miles of mountain plover potential habitat ▪ 51.9 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 57 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 120.6 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 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 445 aquatic habitats ▪ 7 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-1	219.3	**Inventory** Same as WYCO-F, except crosses: ▪ 2.1 miles of barren/sparsely vegetated communities **Impacts** Same as WYCO-F, except: ▪ With mitigation, 137.2 miles of moderate impacts and 2.0 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-F **Impacts** Same as WYCO-F	**Inventory** Compared to WYCO-F, crosses: ▪ 0.4 more miles of elk substantial habitat ▪ 0.8 more miles of mule deer substantial habitat ▪ 0.4 more miles of pronghorn substantial habitat ▪ 0.7 more miles of elk winter range ▪ 1.1 fewer miles of mule deer winter range ▪ 1.4 more miles of pronghorn winter range **Impacts** ▪ Same as WYCO-F ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Compared to WYCO-F, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer miles of white-tailed prairie dog potential habitat ▪ 1.1 difference in miles of pygmy rabbit potential habitat ▪ 0.7 fewer miles of mountain plover potential habitat ▪ 0.1 more miles of yellow-billed cuckoo potential habitat ▪ 0.2 more miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ No difference in greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.6 additional miles of moderate and 0.2 additional miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 447 aquatic habitats ▪ 7 element occurrences **Impacts** Same as WYCO-F

TABLE S-3b
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)
WYCO-F-2	218.9	**Inventory** Same as WYCO-F, except crosses: ▪ 1.8 miles of grassland communities **Impacts** Same as WYCO-F, except: ▪ With mitigation, 136.3 miles of moderate impacts and 2.0 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-F **Impacts** Same as WYCO-F	**Inventory** Compared to WYCO-F, crosses: ▪ 3.3 fewer miles of elk substantial habitat ▪ 2.8 more miles of mule deer substantial habitat ▪ 1.4 fewer miles of elk winter range ▪ 2.8 more miles of mule deer winter range ▪ 0.1 fewer miles of pronghorn winter range **Impacts** ▪ Same as WYCO-F ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Compared to WYCO-F, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 1.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ 0.3 fewer miles of mountain plover potential habitat ▪ No difference in miles of yellow-billed cuckoo potential habitat ▪ 0.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 1.2 fewer miles of moderate and 0.4 additional miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112).	**Inventory** Crosses: ▪ 1 critical habitat ▪ 454 aquatic habitats ▪ 7 element occurrences **Impacts** Same as WYCO-F
WYCO-F-3	218.9	**Inventory** Same as WYCO-F, except crosses: ▪ 2.1 miles of grassland communities **Impacts** Same as WYCO-F, except: ▪ With mitigation, 136.3 miles of moderate impacts and 2.0 miles of moderate-high impacts anticipated	**Inventory** Same as WYCO-F **Impacts** Same as WYCO-F	**Inventory** Compared to WYCO-F, crosses: ▪ 0.3 more miles of elk winter range **Impacts** ▪ Same as WYCO-F ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-87 and 3-88)	**Inventory** Compared to WYCO-F, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.3 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of pygmy rabbit potential habitat ▪ 0.2 fewer miles of mountain plover potential habitat ▪ No difference in miles of yellow-billed cuckoo potential habitat ▪ 1.1 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.3 fewer miles of moderate and 0.7 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-112)	**Inventory** Crosses: ▪ 1 critical habitat ▪ 444 aquatic habitats ▪ 7 element occurrences **Impacts** Same as WYCO-F

TABLE S-3b 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)**
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)						
COUT BAX-B	279.2	**Inventory** Crosses: ▪ 0.5 mile of alpine vegetation communities ▪ 8.2 miles of aspen vegetation communities ▪ 19.5 miles of barren/sparsely vegetated communities ▪ 6.5 miles of grassland vegetation communities ▪ 7.5 miles of montane forest vegetation communities ▪ 12.5 miles of mountain shrub vegetation communities ▪ 1.3 miles of riparian vegetation communities ▪ 0.2 mile of water vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 101.9 miles of moderate impacts and 1.3 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-55)	**Inventory** Crosses: ▪ 1.4 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, 30.7 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-60)	**Inventory** Crosses: ▪ 32.6 miles of elk substantial habitat ▪ 28.8 miles of mule deer substantial habitat ▪ 46.1 miles of pronghorn substantial habitat ▪ 17.6 miles of moose substantial habitat ▪ 5.3 miles of desert bighorn substantial habitat ▪ 4.8 miles of elk calving grounds ▪ 29.5 miles of elk summer concentration areas ▪ 40.6 miles of elk winter range ▪ 3.6 miles of mule deer spring/fall habitat ▪ 15.8 miles of mule deer summer concentration areas ▪ 69.2 miles of mule deer winter range ▪ 3.0 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** ▪ Combined residual impacts on elk, mule deer, pronghorn and moose after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-92 and 3-93)	**Inventory** Crosses: ▪ 1.5 miles of black-footed ferret management area ▪ 5.2 miles of white-tailed prairie dog potential habitat ▪ 0.7 mile of mountain plover potential habitat ▪ 19.5 miles of Mexican spotted owl potential habitat ▪ 0.1 southwestern willow flycatcher potential habitat ▪ No sage-grouse habitat within 4 miles of leks located in core areas or priority habitat **Impacts** ▪ With mitigation, 24.4 miles of moderate and 11.8 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-118)	**Inventory** Crosses: ▪ 9 critical habitats ▪ 587 aquatic habitats ▪ 21 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-C	289.7	**Inventory** Crosses: ▪ 0.5 mile of alpine vegetation communities ▪ 8.2 miles of aspen vegetation communities ▪ 19.3 miles of barren/sparsely vegetated communities ▪ 6.7 miles of grassland vegetation communities ▪ 7.5 miles of montane forest vegetation communities ▪ 12.5 miles of mountain shrub vegetation communities ▪ 1.8 miles of riparian vegetation communities ▪ 0.2 mile of water vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 104.0 miles of moderate impacts and 1.8 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-60)	**Inventory** Crosses: ▪ 1.4 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, 30.7 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-60)	**Inventory** Crosses: ▪ 32.6 miles of elk substantial habitat ▪ 28.8 miles of mule deer substantial habitat ▪ 55.8 miles of pronghorn substantial habitat ▪ 17.6 miles of moose substantial habitat ▪ 5.3 miles of desert bighorn substantial habitat ▪ 4.8 miles of elk calving grounds ▪ 29.5 miles of elk summer concentration areas ▪ 40.6 miles of elk winter range ▪ 3.6 miles of mule deer spring/fall habitat ▪ 15.8 miles of mule deer summer concentration areas ▪ 69.2 miles of mule deer winter range ▪ 3.0 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** ▪ Combined residual impacts on elk, mule deer, pronghorn and moose after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-92 and 3-93)	**Inventory** Crosses: ▪ 1.5 miles of black-footed ferret management area ▪ 6.0 miles of white-tailed prairie dog potential habitat ▪ 0.7 mile of mountain plover potential habitat ▪ 22.9 miles of Mexican spotted owl potential habitat ▪ 0.6 miles of southwestern willow flycatcher potential habitat ▪ 1.1 miles of yellow-billed cuckoo potential habitat ▪ No sage-grouse habitat within 4 miles of leks located in core areas or priority habitat **Impacts** ▪ With mitigation, 29.1 miles of moderate and 11.8 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-118)	**Inventory** Crosses: ▪ 9 critical habitats ▪ 607 aquatic habitats ▪ 21 element occurrences **Impacts** ▪ Same as COUT BAX-B

TABLE S-3b 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-E	291.5	**Inventory** Crosses: ▪ 0.3 mile of alpine vegetation communities ▪ 10.5 miles of aspen vegetation communities ▪ 18.5 miles of barren/sparsely vegetated communities ▪ 5.3 miles of grassland vegetation communities ▪ 2.8 miles of montane forest vegetation communities ▪ 15.6 miles of mountain shrub vegetation communities ▪ 1.7 miles of riparian vegetation communities ▪ 0.3 mile of water vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 102.9 miles of moderate impacts and 1.7 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-60)	**Inventory** Crosses: ▪ 1.2 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 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, 30.7 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-60)	**Inventory** Crosses: ▪ 28.0 miles of elk substantial habitat ▪ 32.5 miles of mule deer substantial habitat ▪ 50.1 miles of pronghorn substantial habitat ▪ 23.1 miles of moose substantial habitat ▪ 5.3 miles of desert bighorn substantial habitat ▪ 4.8 miles of elk calving grounds ▪ 25.9 miles of elk summer concentration areas ▪ 63.8 miles of elk winter range ▪ 2.7 miles of mule deer spring/fall habitat ▪ 14.8 miles of mule deer summer concentration areas ▪ 77.1 miles of mule deer winter range ▪ 5.9 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** ▪ Combined residual impacts on elk, mule deer, pronghorn and moose after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-92 and 3-93)	**Inventory** Crosses: ▪ 1.5 miles of black-footed ferret management area ▪ 3.4 miles of white-tailed prairie dog potential habitat ▪ 0.7 mile of pygmy rabbit potential habitat ▪ 0.7 mile of mountain plover potential habitat ▪ 19.1miles Mexican spotted owl potential habitat ▪ 0.8 mile southwestern willow flycatcher potential habitat ▪ 1.4 miles of yellow-billed cuckoo potential habitat ▪ No sage-grouse habitat within 4 miles of leks located in core areas or priority habitat **Impacts** ▪ With mitigation, 23.0 miles of moderate and 21.3 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-118)	**Inventory** Crosses: ▪ 9 critical habitats ▪ 600 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
Colorado to Utah – U.S. Highway 40 to Central, Utah, to Clover (COUT)						
Alternative COUT-A and Route Variation						
COUT-A	206.0	**Inventory** Crosses: ▪ 0.6 mile of alpine vegetation communities ▪ 6.4 miles of aspen vegetation communities ▪ 6.1 miles of barren/sparsely vegetated communities ▪ 0.9 mile of grassland vegetation communities ▪ 3.4 miles of montane forest vegetation communities ▪ 17.9 miles of mountain shrub vegetation communities ▪ 4.0 miles of riparian vegetation communities ▪ 2.8 miles of water vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 38.1 miles of moderate impacts and 4.0 miles of moderate-high impacts anticipated ▪ For total acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 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 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, 0.1 mile of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 19.8 miles of elk substantial habitat ▪ 41.6 miles of mule deer substantial habitat ▪ 28.1 miles of pronghorn substantial habitat ▪ 45.6 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 ▪ 68.2 miles of elk winter range ▪ 2.8 miles of elk year-long habitat ▪ 4.3 miles of mule deer spring/fall habitat ▪ 19.0 miles of mule deer summer concentration areas ▪ 67.0 miles of mule deer winter range ▪ 28.8 miles of mule deer winter/spring habitat ▪ 3.9 miles of mule deer year-long habitat ▪ 38.9 miles of pronghorn fawning areas ▪ 38.9 miles of pronghorn year-long habitat ▪ 14.2 miles of moose spring/fall habitat ▪ 14.7 miles of moose winter range **Impacts** ▪ Combined residual impacts on elk, mule deer, pronghorn and moose after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98).	**Inventory** Crosses: ▪ 5.9 miles of black-footed ferret management area ▪ 8.7 miles of white-tailed prairie dog potential habitat ▪ 17.5 miles of mountain plover potential habitat ▪ 3.1 miles of yellow-billed cuckoo potential habitat ▪ 29.2 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 6 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 7.8 miles of moderate and 55.6 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 434 aquatic habitats ▪ 17 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

TABLE S-3b
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-A-1	205.6	**Inventory** Same as COUT-A, except crosses: ▪ 0.4 mile of alpine vegetation communities ▪ 7.0 miles of aspen vegetation communities ▪ 6.2 miles of barren/sparsely vegetated communities ▪ 0.9 mile of grassland vegetation communities ▪ 3.8 miles of montane forest vegetation communities ▪ 17.9 miles of mountain shrub vegetation communities ▪ 4.4 miles of riparian vegetation communities ▪ 2.8 miles of water vegetation communities **Impacts** Same as COUT-A, except: ▪ With mitigation, 39.0 miles of moderate impacts and 4.4 miles of moderate-high impacts anticipated	**Inventory** Same as COUT-A **Impacts** Same as COUT-A	**Inventory** Compared to COUT-A, crosses: ▪ 0.4 fewer miles of elk spring/fall habitat ▪ 0.4 fewer miles of mule deer summer concentration ▪ 0.4 fewer miles of moose spring/fall habitat **Impacts** ▪ Same as COUT-A ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-A, crosses: ▪ No difference in miles of black-footed ferret management area ▪ No difference in miles of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ No difference in miles of yellow-billed cuckoo potential habitat ▪ No difference in miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ No difference in greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ Same as COUT-A ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 433 aquatic habitats ▪ 17 element occurrences **Impacts** Same as COUT-A
Alternative COUT-B and Route Variations						
COUT-B	216.0	**Inventory** Crosses: ▪ 1.5 miles of alpine vegetation communities ▪ 3.5 miles of aspen vegetation communities ▪ 8.2 miles of barren/sparsely vegetated communities ▪ 3.7 miles of grassland vegetation communities ▪ 4.1 miles of montane forest vegetation communities ▪ 20.5 miles of mountain shrub vegetation communities ▪ 3.1 miles of riparian vegetation communities ▪ 3.2 miles of water vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 44.7 miles of moderate impacts and 3.1 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-60)	**Inventory** Crosses: ▪ 6.0 miles of Ute ladies'-tresses potential habitat ▪ 0.9 mile of clay phacelia habitat ▪ 13.8 miles of White River beardtongue and Graham's beardtongue habitat **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, 0.7 mile of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 25.1 miles of elk substantial habitat ▪ 62.8 miles of mule deer substantial habitat ▪ 37.0 miles of pronghorn substantial habitat ▪ 60.9 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 ▪ 71.7 miles of elk winter range ▪ 11.5 miles of elk year-long habitat ▪ 4.3 miles of mule deer spring/fall habitat ▪ 24.1 miles of mule deer summer concentration areas ▪ 60.4 miles of mule deer winter range ▪ 24.1 miles of mule deer winter/spring habitat ▪ 5.2 miles of mule deer year-long habitat ▪ 38.9 miles of pronghorn fawning areas ▪ 38.9 miles of pronghorn year-long habitat ▪ 5.2 miles of moose calving grounds ▪ 25.8 miles of moose winter range ▪ 5.2 miles of moose year-long habitat **Impacts** ▪ Combined residual impacts on elk, mule deer, pronghorn and moose after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Crosses: ▪ 5.9 miles of black-footed ferret management area ▪ 8.8 miles of white-tailed prairie dog potential habitat ▪ 20.5 miles of mountain plover potential habitat ▪ 9.6 miles of Mexican spotted owl potential habitat ▪ 2.9 miles of yellow-billed cuckoo potential habitat ▪ 23.5 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 12 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 15.8 miles of moderate and 57.9 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 495 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

TABLE S-3b
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-B-1	212.7	**Inventory** Same as COUT-B, except crosses: ▪ 1.1 miles of alpine vegetation communities ▪ 4.7 miles of aspen vegetation communities ▪ 7.8 miles of barren/sparsely vegetated communities ▪ 3.9 miles of grassland vegetation communities ▪ 8.1 miles of montane forest vegetation communities ▪ 21.6 miles of mountain shrub vegetation communities ▪ 2.9 miles of riparian vegetation communities **Impacts** Same as COUT-B, except: ▪ With mitigation, 50.4 miles of moderate impacts and 2.9 miles of moderate-high impacts anticipated	**Inventory** Same as COUT-B, except crosses: ▪ 15.1 miles of White River beardtongue and Graham's beardtongue habitat **Impacts** Same as COUT-B	**Inventory** Compared to COUT-B, crosses: ▪ 11.0 more miles of elk substantial habitat ▪ 2.9 more miles of moose substantial habitat ▪ 0.3 fewer miles of elk summer concentration ▪ 6.9 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 2.5 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 2.0 fewer miles of moose calving grounds ▪ 4.2 fewer miles of moose winter range **Impacts** ▪ Same as COUT-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 2.2 fewer miles of Mexican spotted owl potential habitat ▪ 0.2 fewer miles of yellow-billed cuckoo potential habitat ▪ 17.6 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 6 fewer greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 2.2 fewer miles of moderate and 18.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 465 aquatic habitats ▪ 21 element occurrences **Impacts** Same as COUT-B
COUT-B-2	214.2	**Inventory** Same as COUT-B, except crosses: ▪ 1.1 miles of alpine vegetation communities ▪ 6.5 miles of aspen vegetation communities ▪ 8.3 miles of barren/sparsely vegetated communities ▪ 3.9 miles of grassland vegetation communities ▪ 6.1 miles of montane forest vegetation communities ▪ 22.8 miles of mountain shrub vegetation communities ▪ 2.9 miles of riparian vegetation communities **Impacts** Same as COUT-B, except: ▪ With mitigation, 51.9 miles of moderate impacts and 2.9 miles of moderate-high impacts anticipated	**Inventory** Same as COUT-B, except crosses: ▪ 13.9 miles of White River beardtongue and Graham's beardtongue habitat **Impacts** Same as COUT-B	**Inventory** Compared to COUT-B, crosses: ▪ 8.6 more miles of elk substantial habitat ▪ 2.2 more miles of moose substantial habitat ▪ 1.0 fewer mile of elk summer concentration ▪ 2.3 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 4.0 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 2.0 fewer miles of moose calving grounds ▪ 2.0 fewer miles of moose winter range ▪ 2.0 fewer miles of moose year-long habitat **Impacts** ▪ Same as COUT-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 1.1 fewer miles of Mexican spotted owl potential habitat ▪ 0.2 fewer miles of yellow-billed cuckoo potential habitat ▪ 17.6 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 1.1 fewer miles of moderate and 18.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 483 aquatic habitats ▪ 20 element occurrences **Impacts** Same as COUT-B

TABLE S-3b
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-B-3	213.9	**Inventory** Same as COUT-B, except crosses: ▪ 1.1 miles of alpine vegetation communities ▪ 10.1 miles of aspen vegetation communities ▪ 7.9 miles of barren/sparsely vegetated communities ▪ 3.5 miles of grassland vegetation communities ▪ 5.2 miles of montane forest vegetation communities ▪ 22.1 miles of mountain shrub vegetation communities ▪ 2.9 miles of riparian vegetation communities **Impacts** Same as COUT-B, except: ▪ With mitigation, 53.1 miles of moderate impacts and 2.9 miles of moderate-high impacts anticipated	**Inventory** Same as COUT-B **Impacts** Same as COUT-B	**Inventory** Compared to COUT-B, crosses: ▪ 9.4 more miles of elk substantial habitat ▪ 3.2 fewer miles of elk summer concentration ▪ 1.2 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 3.7 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 0.4 fewer mile of moose calving grounds ▪ 1.7 fewer miles of moose winter range ▪ 0.4 fewer mile of moose year-long habitat **Impacts** ▪ Same as COUT-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 2.1 more miles of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 17.6 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ No additional greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.1 fewer mile of moderate and 18.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 466 aquatic habitats ▪ 20 element occurrences **Impacts** Same as COUT-B
COUT-B-4	214.2	**Inventory** Same as COUT-B, except crosses: ▪ 1.1 miles of alpine vegetation communities ▪ 7.4 miles of aspen vegetation communities ▪ 7.9 miles of barren/sparsely vegetated communities ▪ 4.0 miles of grassland vegetation communities ▪ 6.1 miles of montane forest vegetation communities ▪ 21.8 miles of mountain shrub vegetation communities ▪ 2.9 miles of riparian vegetation communities **Impacts** Same as COUT-B, except: ▪ With mitigation, 51.5 miles of moderate impacts and 2.9 miles of moderate-high impacts anticipated	**Inventory** Same as COUT-B **Impacts** Same as COUT-B	**Inventory** Compared to COUT-B, crosses: ▪ 8.2 more miles of elk substantial habitat ▪ 2.2 more miles of moose substantial habitat ▪ 1.0 fewer mile of elk summer concentration ▪ 1.9 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 4.0 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 2.0 fewer miles of moose calving grounds ▪ 2.0 fewer miles of moose winter range ▪ 2.0 fewer miles of moose year-long habitat **Impacts** ▪ Same as COUT-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 0.1 more mile of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 17.6 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ No additional greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 0.1 more mile of moderate, and 18.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 474 aquatic habitats ▪ 20 element occurrences **Impacts** Same as COUT-B

TABLE S-3b
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-B-5	213.9	**Inventory** Same as COUT-B, except crosses: ▪ 1.1 miles of alpine vegetation communities ▪ 9.2 miles of aspen vegetation communities ▪ 8.3 miles of barren/sparsely vegetated communities ▪ 3.4 miles of grassland vegetation communities ▪ 5.2 miles of montane forest vegetation communities ▪ 23.1 miles of mountain shrub vegetation communities ▪ 2.9 miles of riparian vegetation communities **Impacts** Same as COUT-B, except: ▪ With mitigation, 53.5 miles of moderate impacts and 2.9 miles of moderate-high impacts anticipated	**Inventory** Same as COUT-B, except crosses: ▪ 13.9 miles of White River beardtongue and Graham's beardtongue habitat **Impacts** Same as COUT-B	**Inventory** Compared to COUT-B, crosses: ▪ 9.8 more miles of elk substantial habitat ▪ 3.2 fewer miles of elk summer concentration ▪ 1.6 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 3.7 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 0.4 fewer mile of moose calving grounds ▪ 1.7 fewer miles of moose winter range ▪ 0.4 fewer mile of moose year-long habitat **Impacts** ▪ Same as COUT-B ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-B, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer miles of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 1.1 fewer miles of Mexican spotted owl potential habitat ▪ 0.2 fewer miles of yellow-billed cuckoo potential habitat 17.6 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 1 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 1.1 fewer miles of moderate and 18.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 7 critical habitats ▪ 476 aquatic habitats ▪ 20 element occurrences **Impacts** Same as COUT-B
Alternative COUT-C and Route Variations						
COUT-C	209.8	**Inventory** Crosses: ▪ 0.6 mile of alpine vegetation communities ▪ 8.3 miles of aspen vegetation communities ▪ 8.6 miles of barren/sparsely vegetated communities ▪ 3.4 miles of grassland vegetation communities ▪ 2.4 miles of montane forest vegetation communities ▪ 20.9 miles of mountain shrub vegetation communities ▪ 1.1 miles of riparian vegetation communities ▪ 0.3 mile of water vegetation communities ▪ 0.1 mile of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 44.6 miles of moderate impacts and 1.1 miles of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 0.9 mile of Ute ladies'-tresses potential habitat ▪ 0.9 mile of clay phacelia habitat ▪ 6.0 miles of White River beardtongue and Graham's beardtongue habitat ▪ 0.6 mile of clay reed-mustard habitat ▪ 36.1 miles of Uinta Basin hookless cactus habitat ▪ 3.4 miles of Level 1 *Sclerocactus* core habitat ▪ 9.0 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, 4.6 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 39.4 miles of elk substantial habitat ▪ 41.2 miles of mule deer substantial habitat ▪ 23.3 miles of pronghorn substantial habitat ▪ 50.9 miles of moose substantial habitat ▪ 10.1 miles of Rocky Mountain bighorn sheep substantial habitat ▪ 7.6 miles of elk calving grounds ▪ 2.2 miles of elk spring/fall habitat ▪ 3.2 miles of elk summer concentration areas ▪ 66.9 miles of elk winter range ▪ 16.9 miles of elk year-long habitat ▪ 5.1 miles of mule deer spring/fall habitat ▪ 28.1 miles of mule deer summer concentration areas ▪ 53.2 miles of mule deer winter range ▪ 24.1 miles of mule deer winter/spring habitat ▪ 2.7 miles of mule deer year-long habitat ▪ 57.1 miles of pronghorn fawning areas ▪ 57.1 miles of pronghorn year-long habitat ▪ 5.2 miles of moose calving grounds ▪ 39.6 miles of moose winter range ▪ 5.2 miles of moose year-long habitat **Impacts** ▪ Combined residual impacts on elk, mule deer, pronghorn, moose and Rocky Mountain bighorn sheep after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Crosses: ▪ 8.0 miles of black-footed ferret management area ▪ 7.8 miles of white-tailed prairie dog potential habitat ▪ 30.6 miles of mountain plover potential habitat ▪ 9.6 miles of Mexican spotted owl potential habitat ▪ 0.9 mile of yellow-billed cuckoo potential habitat ▪ 23.5 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 13 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 19.8 miles of moderate and 46.6 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 8 critical habitats ▪ 410 aquatic habitats ▪ 22 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-3b
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-C-1	206.4	**Inventory** Same as COUT-C, except crosses: ▪ 0.0 mile of alpine vegetation communities ▪ 7.6 miles of aspen vegetation communities ▪ 7.9 miles of barren/sparsely vegetated communities ▪ 3.9 miles of grassland vegetation communities ▪ 11.3 miles of montane forest vegetation communities ▪ 21.2 miles of mountain shrub vegetation communities ▪ 0.9 mile of riparian vegetation communities **Impacts** Same as COUT-C, except: ▪ With mitigation, 52.3 miles of moderate impacts and 0.9 mile of moderate-high impacts anticipated	**Inventory** Same as COUT-C, except crosses: ▪ 17.3 miles of White River beardtongue and Graham's beardtongue habitat **Impacts** Same as COUT-C	**Inventory** Compared to COUT-C, crosses: ▪ 14.7 more miles of elk substantial habitat ▪ 2.5 fewer miles of mule deer substantial habitat ▪ 2.9 more miles of moose substantial habitat ▪ 0.3 fewer mile of elk summer concentration ▪ 10.7 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 0.8 fewer mile of mule deer spring/fall habitat ▪ 4.7 more miles of mule deer summer concentration ▪ 4.8 fewer miles of mule deer winter range ▪ 2.0 fewer miles of moose calving grounds ▪ 4.3 fewer miles of moose winter range ▪ 2.0 fewer miles of moose year-long habitat **Impacts** ▪ Same as COUT-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 1.1 more miles of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 19.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 10 fewer greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 1.1 more miles of moderate and 21.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 8 critical habitats ▪ 380 aquatic habitats ▪ 23 element occurrences **Impacts** Same as COUT-C
COUT-C-2	207.9	**Inventory** Same as COUT-C, except crosses: ▪ 0.0 mile of alpine vegetation communities ▪ 9.4 miles of aspen vegetation communities ▪ 8.4 miles of barren/sparsely vegetated communities ▪ 3.9 miles of grassland vegetation communities ▪ 9.3 miles of montane forest vegetation communities ▪ 22.4 miles of mountain shrub vegetation communities ▪ 0.9 mile of riparian vegetation communities **Impacts** Same as COUT-C, except: ▪ With mitigation, 53.8 miles of moderate impacts and 0.9 mile of moderate-high impacts anticipated	**Inventory** Same as COUT-C, except crosses: ▪ 16.1 miles of White River beardtongue and Graham's beardtongue habitat **Impacts** Same as COUT-C	**Inventory** Compared to COUT-C, crosses: ▪ 12.3 more miles of elk substantial habitat ▪ 2.5 fewer miles of mule deer substantial habitat ▪ 2.9 more miles of moose substantial habitat ▪ 1.0 fewer mile of elk summer concentration ▪ 6.1 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 0.8 fewer mile of mule deer spring/fall habitat ▪ 6.2 more miles of mule deer summer concentration ▪ 4.8 fewer miles of mule deer winter range ▪ 2.0 fewer miles of moose calving grounds ▪ 2.1 fewer miles of moose winter range ▪ 2.0 fewer miles of moose year-long habitat **Impacts** ▪ Same as COUT-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 2.2 more miles of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 19.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 5 fewer greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 2.2 more miles of moderate and 21.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 8 critical habitats ▪ 399 aquatic habitats ▪ 22 element occurrences **Impacts** Same as COUT-C

TABLE S-3b
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-C-3 (Agency Preferred Alternative)	207.6	**Inventory** Same as COUT-C, except crosses: ▪ 0.0 mile of alpine vegetation communities ▪ 12.1 miles of aspen vegetation communities ▪ 8.4 miles of barren/sparsely vegetated communities ▪ 3.4 miles of grassland vegetation communities ▪ 8.4 miles of montane forest vegetation communities ▪ 22.7 miles of mountain shrub vegetation communities ▪ 0.9 mile of riparian vegetation communities **Impacts** Same as COUT-C, except: ▪ With mitigation, 55.4 miles of moderate impacts and 0.9 mile of moderate-high impacts anticipated	**Inventory** Same as COUT-C, except crosses: ▪ 16.1 miles of White River beardtongue and Graham's beardtongue habitat **Impacts** Same as COUT-C	**Inventory** Compared to COUT-C, crosses: ▪ 13.5 more miles of elk substantial habitat ▪ 2.5 fewer miles of mule deer substantial habitat ▪ 3.2 fewer miles of elk summer concentration ▪ 5.4 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 0.8 fewer mile of mule deer spring/fall habitat ▪ 5.9 more miles of mule deer summer concentration ▪ 4.8 fewer miles of mule deer winter range ▪ 0.4 fewer mile of moose calving grounds ▪ 1.8 fewer miles of moose winter range ▪ 0.4 fewer mile of moose year-long habitat **Impacts** ▪ Same as COUT-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 2.2 more miles of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 19.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 5 fewer greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 2.2 more miles of moderate and 21.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127).	**Inventory** Crosses: ▪ 8 critical habitats ▪ 391 aquatic habitats ▪ 22 element occurrences **Impacts** Same as COUT-C
COUT-C-4	207.9	**Inventory** Same as COUT-C, except crosses: ▪ 0.2 mile of alpine vegetation communities ▪ 8.5 miles of aspen vegetation communities ▪ 8.8 miles of barren/sparsely vegetated communities ▪ 3.8 miles of grassland vegetation communities ▪ 6.3 miles of montane forest vegetation communities ▪ 22.0 miles of mountain shrub vegetation communities ▪ 0.9 mile of riparian vegetation communities **Impacts** Same as COUT-C, except: ▪ With mitigation, 50.0 miles of moderate impacts and 0.9 mile of moderate-high impacts anticipated	**Inventory** Same as COUT-C **Impacts** Same as COUT-C	**Inventory** Compared to COUT-C, crosses: ▪ 8.3 more miles of elk substantial habitat ▪ 0.8 more mile of mule deer substantial habitat ▪ 2.2 more miles of moose substantial habitat ▪ 1.0 fewer mile of elk summer concentration ▪ 2.1 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 0.8 fewer mile of mule deer spring/fall habitat ▪ 3.9 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 2.0 fewer miles of moose calving grounds ▪ 2.1 fewer miles of moose winter range ▪ 2.0 fewer miles of moose year-long habitat **Impacts** ▪ Same as COUT-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-45 and 3-46)	**Inventory** Compared to COUT-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 3.5 more miles of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 19.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 2 fewer greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 3.5 more miles of moderate and 21.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127).	**Inventory** Crosses: ▪ 8 critical habitats ▪ 400 aquatic habitats ▪ 22 element occurrences **Impacts** Same as COUT-C

TABLE S-3b
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-C-5	207.6	**Inventory** Same as COUT-C, except crosses: ▪ 0.2 mile of alpine vegetation communities ▪ 11.2 miles of aspen vegetation communities ▪ 8.8 miles of barren/sparsely vegetated communities ▪ 3.3 miles of grassland vegetation communities ▪ 5.4 miles of montane forest vegetation communities ▪ 22.3 miles of mountain shrub vegetation communities ▪ 0.9 mile of riparian vegetation communities **Impacts** Same as COUT-C, except: ▪ With mitigation, 51.6 miles of moderate impacts and 0.9 mile of moderate-high impacts anticipated	**Inventory** Same as COUT-C **Impacts** Same as COUT-C	**Inventory** Compared to COUT-C, crosses: ▪ 9.5 more miles of elk substantial habitat ▪ 0.8 more mile of mule deer substantial habitat ▪ 3.2 fewer mile of elk summer concentration ▪ 1.5 fewer miles of elk winter range ▪ 7.1 fewer miles of elk year-long habitat ▪ 0.8 fewer mile of mule deer spring/fall habitat ▪ 3.6 more miles of mule deer summer concentration ▪ 5.8 fewer miles of mule deer winter range ▪ 0.4 fewer mile of moose calving grounds ▪ 1.8 fewer miles of moose winter range ▪ 0.4 fewer mile of moose year-long habitat **Impacts** ▪ Same as COUT-C ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Compared to COUT-C, crosses: ▪ No difference in miles of black-footed ferret management area ▪ 0.8 fewer mile of white-tailed prairie dog potential habitat ▪ No difference in miles of mountain plover potential habitat ▪ 3.5 more miles of Mexican spotted owl potential habitat ▪ 0.2 fewer mile of yellow-billed cuckoo potential habitat ▪ 19.2 fewer miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 2 more greater sage-grouse lek located within 4 miles of centerline **Impacts** ▪ With mitigation, 3.5 more miles of moderate and 21.5 fewer miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 8 critical habitats ▪ 392 aquatic habitats ▪ 22 element occurrences **Impacts** Same as COUT-C
Alternatives COUT-H and COUT-I						
COUT-H (Applicant Preferred Alternative)	200.6	**Inventory** Crosses: ▪ 0.5 mile of alpine vegetation communities ▪ 16.1 miles of aspen vegetation communities ▪ 8.2 miles of barren/sparsely vegetated communities ▪ 4.0 miles of grassland vegetation communities ▪ 6.6 miles of montane forest vegetation communities ▪ 11.8 miles of mountain shrub vegetation communities ▪ 0.6 mile of riparian vegetation communities ▪ 0.4 mile of water vegetation communities ▪ 0.2 mile of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 47.8 miles of moderate impacts and 0.6 mile of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 0.9 mile of Ute ladies'-tresses potential habitat ▪ 6.0 miles of White River beardtongue and Graham's beardtongue habitat ▪ 0.6 mile of clay reed-mustard habitat ▪ 36.1 miles of Uinta Basin hookless cactus habitat ▪ 3.4 miles of Level 1 *Sclerocactus* core habitat ▪ 9.0 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, 3.9 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 44.7 miles of elk substantial habitat ▪ 46.2 miles of mule deer substantial habitat ▪ 23.3 miles of pronghorn substantial habitat ▪ 23.1 miles of moose substantial habitat ▪ 10.1 miles of Rocky Mountain bighorn sheep substantial habitat ▪ 5.4 miles of elk calving grounds ▪ 18.9 miles of elk summer concentration areas ▪ 43.6 miles of elk winter range ▪ 5.4 miles of elk year-long habitat ▪ 3.5 miles of mule deer spring/fall habitat ▪ 31.6 miles of mule deer summer concentration areas ▪ 54.5 miles of mule deer winter range ▪ 5.9 miles of mule deer winter/spring habitat ▪ 2.7 miles of mule deer year-long habitat ▪ 57.1 miles of pronghorn fawning areas ▪ 57.1 miles of pronghorn year-long habitat ▪ 1.0 mile of moose calving grounds ▪ 46.0 miles of moose winter range ▪ 1.0 mile of moose year-long habitat **Impacts** ▪ Combined residual impacts on elk, mule deer, pronghorn, moose and Rocky Mountain bighorn sheep after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Table3 3-97 and 3-98)	**Inventory** Crosses: ▪ 8.0 miles of black-footed ferret management area ▪ 7.1 miles of white-tailed prairie dog potential habitat ▪ 30.6 miles of mountain plover potential habitat ▪ 9.6 miles of Mexican spotted owl potential habitat ▪ 0.9 mile of yellow-billed cuckoo potential habitat ▪ 9.0 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 10 sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 11.5 miles of moderate and 42.7 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127)	**Inventory** Crosses: ▪ 8 critical habitats ▪ 389 aquatic habitats ▪ 16 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-3b
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-I	240.2	**Inventory** Crosses: ▪ 1.6 miles of alpine vegetation communities ▪ 14.0 miles of aspen vegetation communities ▪ 9.6 miles of barren/sparsely vegetated communities ▪ 5.4 miles of grassland vegetation communities ▪ 9.6 miles of montane forest vegetation communities ▪ 9.6 miles of mountain shrub vegetation communities ▪ 0.6 mile of riparian vegetation communities ▪ 0.3 mile of water vegetation communities ▪ 0.1 mile of wetland vegetation communities **Impacts** ▪ Clearing of trees and other tall vegetation within 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 and groundwater recharge ▪ With mitigation, 50.2 miles of moderate impacts and 0.6 mile of moderate-high impacts anticipated ▪ For acres of disturbance to vegetation communities, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 1.0 mile of Ute ladies'-tresses potential habitat ▪ 6.0 miles of White River beardtongue and Graham's beardtongue habitat ▪ 0.6 mile of clay reed-mustard habitat ▪ 36.1 miles of Uinta Basin hookless cactus habitat ▪ 3.4 miles of Level 1 *Sclerocactus* core habitat ▪ 9.0 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 is not possible to span or avoid these areas ▪ With mitigation, 3.9 miles of moderate impacts anticipated ▪ For acres of disturbance to special status plant habitat, refer to Section 3.2.5 (Table 3-65)	**Inventory** Crosses: ▪ 47.5 miles of elk substantial habitat ▪ 54.7 miles of mule deer substantial habitat ▪ 32.0 miles of pronghorn substantial habitat ▪ 17.6 miles of moose substantial habitat ▪ 10.1 miles of Rocky Mountain bighorn sheep substantial habitat ▪ 5.4 miles of elk calving grounds ▪ 23.2 miles of elk summer concentration areas ▪ 50.4 miles of elk winter range ▪ 9.3 miles of elk year-long habitat ▪ 4.4 miles of mule deer spring/fall habitat ▪ 33.7 miles of mule deer summer concentration areas ▪ 64.3 miles of mule deer winter range ▪ 3.0 miles of mule deer winter/spring habitat ▪ 2.7 miles of mule deer year-long habitat ▪ 71.7 miles of pronghorn fawning areas ▪ 75.1 miles of pronghorn year-long habitat ▪ 0.7 mile of moose calving grounds ▪ 47.2 miles of moose winter range ▪ 0.7 mile of moose year-long habitat **Impacts** ▪ Combined residual impacts on elk, mule deer, pronghorn, moose and Rocky Mountain bighorn sheep after selective mitigation measures have been applied during times 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, only low impacts anticipated ▪ For acres of disturbance to big game habitat refer to Section 3.2.7 (Tables 3-97 and 3-98)	**Inventory** Crosses: ▪ 8.0 miles of black-footed ferret management area ▪ 7.5 miles of white-tailed prairie dog potential habitat ▪ 30.6 miles of mountain plover potential habitat t ▪ 13.3 miles of Mexican spotted owl potential habitat ▪ 0.6 mile of yellow-billed cuckoo potential habitat ▪ 10.6 miles of greater sage-grouse habitat within 4 miles of leks located in core areas or priority habitat ▪ 9 greater sage-grouse leks located within 4 miles of centerline **Impacts** ▪ With mitigation, 15.6 miles of moderate and 39.3 miles of high impacts anticipated ▪ For acres of disturbance to special status wildlife habitat, refer to Section 3.2.8 (Table 3-127).	**Inventory** Crosses: ▪ 8 critical habitats ▪ 507 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

TABLE S-3c
ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-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)															
Alternative WYCO-B and Route Variations															
WYCO-B (Applicant Preferred Alternative)	204.5	18.6	15.3	0.0	18.3	2.5	21.3	38.7	125.8	0.0	0.0	14.7	0.0	64.0	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation** ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, Overland Historic Trail, and Rawlins to Baggs Road Trail), the North Platte River Special Recreation Management Area (SRMA), and avoidance areas for utilities in the BLM Rawlins Resource Management Plan (RMP); authorization for utilities to cross with special stipulations or mitigation measures would be required **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** ▪ 2.8 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement; the Deed of Conservation Easement[1] precludes overhead transmission lines from crossing the property ▪ 4.2 miles of moderate residual impacts where 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 Land and Water Conservation Fund 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 **Wilderness Areas, Wilderness Study Areas (WSA), and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 30.4 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office; due to pre-existing oil and gas development, the BLM elected to manage non-WSA lands with wilderness characteristics for multiple-use and not entirely for protection of wilderness character ▪ Crosses 20.3 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office; an inventory has been completed but specific management prescriptions are pending per completion of analysis and approval by BLM **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No Inventoried Roadless Areas (IRAs) or unroaded/undeveloped areas crossed
WYCO-B-1	204.9	18.6	15.3	0.0	18.3	2.5	21.3	38.7	127.3	0.0	0.0	13.7	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. **Parks, Recreation, and Preservation** ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, Overland Historic Trail, and Rawlins to Baggs Road Trail), the North Platte River SRMA, and avoidance areas for utilities in the Rawlins RMP; authorization for utilities to cross with special stipulations or mitigation measures would be required **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** ▪ 2.8 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement (see WYCO-B for preclusions) ▪ 4.3 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA (see WYCO-B for details), the Yampa River Recreation Area Land and Water Conservation Fund site (see WYCO-B for details) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 30.4 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 22.5 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

TABLE S-3c
ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
WYCO-B-2 (Agency Preferred Alternative)	204.5	18.6	15.3	0.0	12.8	2.5	15.8	38.7	125.9	0.0	0.1	14.7	0.0	65.6	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation** ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, Overland Historic Trail, and Rawlins to Baggs Road trail), North Platte River SRMA, and avoidance areas for utilities in the Rawlins RMP; authorization for utilities to cross with special stipulations or mitigation measures would be required **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details) ▪ 4.3 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, the Yampa River Recreation Area Land and Water Conservation Fund site, and Dinosaur National Monument's Deerlodge Road (a right-of-way permit would be required from the National Park Service to cross this road) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 30.4 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.4 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed
WYCO-B-3	204.5	19.0	14.9	0.0	14.9	2.5	17.9	38.7	125.4	0.0	0.0	14.7	0.0	64.4	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation** ▪ 0.6 mile of moderate residual impacts where the alternative route crosses the North Platte River SRMA, historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic, Overland and Rawlins to Baggs Road Trails), and avoidance areas for utilities in the Rawlins RMP; authorization for utilities to cross with special stipulations or mitigation measures would be required) **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details) ▪ 3.0 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement (see WYCO-B for details) ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and Yampa River Recreation Area Land and Water Conservation Fund site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 30.4 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.8 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

TABLE S-3c
ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Alternative WYCO-C and Route Variations															
WYCO-C	210.4	24.2	43.0	0.0	18.3	6.6	21.3	60.4	127.3	0.0	0.0	15.0	0.0	68.1	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation** (refer to WYCO-B for details on the same areas crossed) ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic trails and scenic trails, and the North Platte River SRMA **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details on the same areas crossed) ▪ 2.8 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and the Yampa River Recreation Area Land and Water Conservation Fund site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 29.3 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.6 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed
WYCO-C-1	210.8	24.2	43.0	0.0	18.3	6.6	21.3	60.4	127.3	0.0	0.0	14.0	0.0	68.0	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation** (refer to WYCO-B for details on the same area crossed) ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic trails and scenic trails, and the North Platte River SRMA **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details on the same areas crossed) ▪ 2.8 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and the Yampa River Recreation Area Land and Water Conservation Site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 31.5 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.6 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

TABLE S-3c
ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
WYCO-C-2	210.4	23.0	41.2	0.0	12.8	6.6	15.8	60.4	125.6	0.0	0.1	1.4	0.0	6.9	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation (**refer to WYCO-B for details on the same areas crossed) ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic trails and scenic trails, and the North Platte River SRMA **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations (**refer to WYCO-B for details on the same areas crossed) ▪ 4.3 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, Yampa River Recreation Area Land and Water Conservation Fund site, and Dinosaur National Monument's Deerlodge Road **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 31.5 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.6 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed
WYCO-C-3	210.4	24.6	42.7	0.0	14.9	6.6	17.9	60.4	126.9	0.0	0.0	15.0	0.0	68.5	**Existing Land Use** ▪ 0.1 mile moderate residual impact in Wyoming where the alternative route crosses an agricultural farm complex. No high residual impacts. **Parks, Recreation, and Preservation (**refer to WYCO-B for details on the same areas crossed) ▪ 0.6 mile of moderate residual impacts where the alternative route crosses historic trails and scenic trails, and North Platte River SRMA **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations (**refer to WYCO-B for details on the same areas crossed) ▪ 3.0 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and Yampa River Recreation Area Land and Water Conservation Fund site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 29.3 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.8 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

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ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Alternative WYCO-D and Route Variation															
WYCO-D	250.0	66.5	59.8	0.0	53.1	24.2	56.4	54.8	105.8	0.0	0.0	18.9	0.0	118.9	**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. **Parks, Recreation, and Preservation (**refer to WYCO-B for details on the same areas crossed) ▪ 3.0 miles of moderate residual impacts where the alternative route crosses historic and scenic trails, North Platte River SRMA, South Beach Public River Access, Juniper Mountain SRMA (Little Snake Field Office): 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 **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.1 mile of moderate residual impacts where alternative route crosses land zoned for residential in the Town of Hanna and Carbon County, Wyoming **Special Designations (**refer to WYCO-B for details on the same areas crossed) ▪ 9.0 miles of moderate residual impacts where the alternative route crosses 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, Yampa River Recreation Area Land and Water Conservation Fund site, Moffat County Road #11 Land and Water Conservation Fund site, the Bitterbrush and Yampa River state wildlife areas (SWAs) (the Colorado Division of Parks and Wildlife strongly discourage activities that conflict with the primary mission of these areas, to provide wildlife recreation opportunities) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 24.4 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 5.4 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

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ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
WYCO-D-1	250.0	66.9	59.4	0.0	49.7	24.2	53.0	54.8	105.4	0.0	6.4	18.9	0.0	119.3	**Existing Land Use** ▪ 4.2 miles of moderate residual impacts where the alternative variation crosses an agricultural farm complex in Wyoming and irrigated farmland in Colorado. No high residual impacts **Parks, Recreation, and Preservation** ▪ 3.0 miles of moderate residual impacts • Crosses historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, and Overland Historic Trail) • North Platte River SRMA, refer to WYCO-B for details on the same areas crossed • South Beach Public River Access • Juniper Mountain SRMA in the Little Snake Field Office, refer WYCO-D for more details **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.1 mile of moderate residual impacts where alternative route crosses land zoned for residential in the Town of Hanna and Carbon County, Wyoming **Special Designations** ▪ 9.0 miles of moderate residual impacts where the alternative route crosses Upper Muddy Creek Watershed/Grizzly WHMA; avoidance area for utilities in the Rawlins RMP (refer to WYCO-D for details), Red Rim-Daley WHMA (refer to WYCO-B for details), Yampa River Recreation Area Land and Water Conservation Fund site (refer to WYCO-B for details); Moffat County Road #11 Land and Water Conservation Fund site (refer to WYCO-B for details), and the Bitterbrush and Yampa River SWAs (the Colorado Division of Parks and Wildlife strongly discourage activities that conflict with the primary mission of these SWAs, to provide wildlife recreation opportunities) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 24.4 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 4.9 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRA or Unroaded/Undeveloped Area crossed
Alternative WYCO-F and Route Variations															
WYCO-F	218.9	18.6	15.4	0.0	18.3	2.5	21.3	41.7	140.7	0.0	0.0	14.9	0.0	63.3	**Existing Land Use** ▪ 0.1 mile of moderate residual impacts where the alternative route crosses irrigated farmland in Wyoming. No high residual impacts **Parks, Recreation, and Preservation** (refer to WYCO-B for details on the same areas crossed) ▪ 0.8 mile of moderate residual impacts where the alternative route crosses North Platte River SRMA, historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, and Overland Historic Trail) **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details on the same areas crossed) ▪ 2.8 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and the Yampa River Recreation Area Land and Water Conservation Fund site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 4.7 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 20.3 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

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ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
WYCO-F-1	219.3	18.6	15.4	0.0	18.3	2.5	21.3	41.7	142.2	0.0	0.0	13.9	0.0	63.2	**Existing Land Use** ▪ 0.1 mile of moderate residual impacts where the alternative route crosses irrigated farmland in Wyoming. No high residual impacts **Parks, Recreation, and Preservation** ▪ 0.8 mile of moderate residual impacts • Crosses historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, and Overland Historic Trail) • North Platte River SRMA • Refer to WYCO-B for details on the same areas crossed **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details of each area) ▪ 2.8 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and Yampa River Recreation Area Land and Water Conservation Fund site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 44.7 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 22.5 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed
WYCO-F-2	218.9	17.4	13.6	0.0	12.8	2.3	15.8	41.7	139.0	0.0	0.1	14.9	0.0	64.9	**Existing Land Use** ▪ 0.1 mile of moderate residual impacts where the alternative route crosses irrigated farmland in Wyoming. No high residual impacts **Parks, Recreation, and Preservation** ▪ 0.8 mile of moderate residual impacts • Crosses historic and scenic trails (Continental Divide National Scenic Trail, Cherokee Historic Trail, and Overland Historic Trail) • North Platte River SRMA • Refer to WYCO-B for details on the same areas crossed **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations (refer to WYCO-B for details of each area)** ▪ 4.3 miles of moderate residual impacts • Crosses Red Rim-Daley WHMA • Yampa River Recreation Area Land and Water Conservation Fund site • Crosses Dinosaur National Monument Deerlodge Road **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 44.7 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.4 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed

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ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
WYCO-F-3	218.9	19.0	15.0	0.0	14.9	2.5	17.9	41.7	140.3	0.0	0.0	14.9	0.0	63.7	**Existing Land Use** ▪ 0.1 mile of moderate residual impacts where the alternative route crosses irrigated farmland in Wyoming. No high residual impacts **Parks, Recreation, and Preservation** (refer to WYCO-B for details of each area) ▪ 0.8 mile of moderate residual impacts where the alternative route crosses historic and scenic trails, and the North Platte River SRMA **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** (refer to WYCO-B for details of each area) ▪ 3.0 miles of high residual impacts where the alternative route crosses Tuttle Ranch Conservation Easement ▪ 4.2 miles of moderate residual impacts where the alternative route crosses Red Rim-Daley WHMA, and Yampa River Recreation Area Land and Water Conservation Fund site **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** (refer to WYCO-B for details) ▪ Crosses 44.7 miles of non-WSA lands with wilderness characteristics in Rawlins Field Office ▪ Crosses 19.8 miles of non-WSA lands with wilderness characteristics in Little Snake Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ No IRAs or unroaded/undeveloped areas crossed
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)															
COUT BAX-B	279.2	131.9	5.9	0.0	95.9	0.0	21.9	27.3	172.7	16.9	0.0	30.9	0.0	58.7	**Existing Land Use** ▪ 1.8 miles of moderate residual impacts where the alternative route crosses irrigated farmland in Utah. No high residual impacts **Parks, Recreation, and Preservation** ▪ 14.4 miles of moderate residual impacts where the alternative route crosses Nephi Shooting Range, 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); the Old Spanish National Historic Trail (NHT) (this trail has a comprehensive management plan under development) **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 14.3 miles of moderate residual impacts where the alternative route crosses land zoned for residential in Rio Blanco and Garfield counties in Colorado, and the City of Nephi, Utah **Special Designations** ▪ 0.8 mile of high residual impacts where the alternative route crosses 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), the North Moroni Conservation Easement, would require a written approval from the Grantee before a right-of-way or easement is granted ▪ 1.2 miles of moderate residual impacts where the alternative route crosses Fountain Green and Salt Creek WMAs (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) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 6.5 miles of non-WSA lands with wilderness characteristics in the White River Field Office; an inventory has been completed but specific management prescriptions are pending per completion of analysis and approval by BLM **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 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-3c
ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT BAX-C	289.7	128.5	17.3	0.0	72.7	0.0	25.3	27.3	179.3	16.9	0.0	34.8	0.0	58.7	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 **Parks, Recreation, and Preservation** ▪ 10.1 miles of moderate residual impacts where the alternative route crosses, Nephi Shooting Range, Labyrinth Canyon, Labyrinth Rims/Gemini Bridges, and San Rafael Swell SRMAs, Booths Canyon non-motorized trails in the Manti-La Sal National Forest, and the Old Spanish NHT **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 14.3 miles of moderate residual impacts where the alternative route crosses land zoned for residential in Rio Blanco and Garfield counties in Colorado, and City of Nephi, Utah **Special Designations** ▪ 0.5 mile of high residual impacts where the alternative route crosses the North Moroni Conservation Easement ▪ 1.2 miles of moderate residual impacts, where the alternative route crosses Fountain Green and Salt Creek WMAs **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 6.5 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 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	291.5	136.6	34.6	0.0	31.5	0.0	18.0	33.7	191.0	7.7	0.0	27.1	0.0	65.7	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 **Parks, Recreation, and Preservation** ▪ 4.7 miles of moderate residual impacts where the alternative route crosses snow kite play areas, Nephi Shooting Range, Labyrinth Canyon and Labyrinth Rims/Gemini Bridges SRMA, Maple Fork non-motorized trails in the Manti-La Sal National Forest, and the Old Spanish NHT **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 14.3 miles of moderate residual impacts where the alternative route crosses land zoned for residential in Rio Blanco and Garfield counties in Colorado, and City of Nephi, Utah **Special Designations** ▪ 5.8 miles of moderate residual impacts where the alternative route crosses the Gordon Creek and Salt Creek WMAs **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 6.5 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 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

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ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)															
COUT-A and Route Variation															
COUT-A	206.0	17.3	49.7	0.0	104.0	0.0	37.2	11.1	55.4	20.0	0.0	24.8	0.0	105.8	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 **Parks, Recreation, and Preservation** ▪ 0.3 mile of moderate residual impacts where the alternative route crosses 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 **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 1.9 miles of moderate residual impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County, and residential mixed use (authorized). There are no high residual impacts **Special Designations** ▪ 19.4 miles of moderate residual impacts where the alternative route crosses eight WMAs (Birdseye, Currant Creek, Dairy Fork, Lake Fork, Rabbit Gulch, Salt Creek, Spencer Fork, and Tabby Mountain), and the Utah Reclamation Mitigation and Conservation Commission (URMCC) managed lands (a license agreement would need to be granted to cross these areas with the Project) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low 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 ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities
COUT-A-1	205.6	17.2	46.5	0.0	104.0	0.0	37.2	11.1	55.4	20.0	0.0	24.8	0.0	105.8	Refer to COUT BAX-B for details on impacts with same resources crossed for each of the following categories of COUT-A-1: **Existing Land Use** ▪ 13.4 miles of moderate residual impacts, no high residual impacts **Parks, Recreation, and Preservation** ▪ 0.3 mile of moderate residual impacts where the alternative route crosses 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 **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 1.9 miles of moderate residual impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County, and residential mixed use (authorized) **Special Designations** ▪ 19.4 miles of moderate residual impacts where the alternative route crosses eight WMAs (Birdseye, Currant Creek, Dairy Fork, Lake Fork, Rabbit Gulch, Salt Creek, Spencer Fork, and Tabby Mountain) and URMCC-managed lands **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities and 3.1 miles of the Chipman Creek IRA (418008) crossed in the Uinta National Forest resulting in a moderate impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities

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ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Alternative COUT-B and Route Variations															
COUT-B	216.0	22.9	38.9	0.0	83.2	0.0	59.1	10.9	56.2	19.1	0.0	26.4	7.8	106.5	**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 **Parks, Recreation, and Preservation** ▪ 0.2 mile of moderate residual impacts where the alternative route crosses Quitchampau non-motorized trail in the Ashley National Forest, and Blind Canyon non-motorized trails in the Manti-La Sal National Forest **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.7 mile of moderate residual impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County **Special Designations** ▪ 11.8 miles of moderate residual impacts where the alternative route crosses eight WMAs; refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities, 10.1 miles of IRA 0401010 crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a moderate impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities, 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact
COUT-B-1	212.7	22.7	38.9	0.0	83.2	0.0	54.2	10.9	61.6	20.9	0.0	23.2	7.8	99.2	**Existing Land Use** ▪ 11.6 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 **Parks, Recreation, and Preservation** ▪ 0.2 mile of moderate residual impacts where the alternative route crosses Quitchampau non-motorized trail in the Ashley National Forest, and Blind Canyon non-motorized trails in the Manti-La Sal National Forest **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.7 mile of moderate residual impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County **Special Designations** ▪ 11.8 miles of moderate residual impacts where the alternative route crosses eight WMAs; refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.3 mile of the Solider Summit IRA (418019) crossed in the Uinta National Forest resulting in a low impact on the area's characteristics and qualities, 0.7 miles of IRA 0401013 crossed in the Ashley National Forest resulting in a low impact, 1.2 miles of IRA 0401012 crossed in the Ashley National Forest resulting in a moderate impact, 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact, 10.1 miles of IRA 0401010 crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a moderate impact ▪ 0.1 mile of the Right Fork Indian Canyon Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a low impact on the area's characteristics and qualities, 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact, 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact

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LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT-B-2	214.2	22.7	38.9	0.0	83.2	0.0	54.2	10.9	58.8	20.5	0.0	26.0	7.8	101.1	**Existing Land Use** ▪ 11.5 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 **Parks, Recreation, and Preservation** ▪ 0.4 mile of moderate impacts where the alternative route crosses Quitchampau non-motorized trail in the Ashley National Forest, and Blind Canyon non-motorized trails in the Manti-La Sal National Forest, and a private recreational property/camping area **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.7 mile of moderate impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County **Special Designations** ▪ 11.8 miles of moderate impacts where the alternative route crosses eight WMAs; refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** (refer to Alternative COUT-B-1 for miles crossed) ▪ 0.3 mile of the Solider Summit IRA crossed in the Uinta National Forest resulting in a low impact, 0.7 miles of IRA 0401013 crossed in the Ashley National Forest resulting in a low impact, 0.5 mile of IRA 0401012 crossed in the Ashley National Forest resulting in a low impact, 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact, 10.1 miles of IRA 0401010 crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a moderate impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact, 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact
COUT-B-3	213.9	22.7	38.9	0.0	83.2	0.0	56.3	10.9	58.4	19.1	0.0	25.2	7.8	103.4	**Existing Land Use** ▪ 11.6 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 **Parks, Recreation, and Preservation** ▪ 0.2 mile of moderate impacts ▪ Quitchampau non-motorized trail in the Ashley National Forest, and Blind Canyon non-motorized trails in the Manti-La Sal National Forest **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.7 mile of moderate impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County **Special Designations** ▪ 11.8 miles of moderate impacts ▪ Crosses eight WMAs; refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** (refer to Alternative COUT-B-1 for miles crossed) ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities, 10.1 miles of IRA 0401010 crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a moderate impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities, 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact

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LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT-B-4	214.2	22.7	38.9	0.0	83.2	0.0	56.3	10.9	58.8	20.5	0.0	25.2	7.8	101.9	**Existing Land Use** ▪ 11.6 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 **Parks, Recreation, and Preservation** ▪ 0.2 mile of moderate impacts ▪ Quitchampau non-motorized trail in the Ashley National Forest and Blind Canyon non-motorized trails in the Manti-La Sal National Forest (0.5 mile) **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.6 mile of moderate impacts where the alternative route crosses land zoned for residential in Ballard City and Utah County **Special Designations** ▪ 11.8 miles of moderate impacts ▪ Crosses eight WMAs; refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** (refer to Alternative COUT-B-1 for miles crossed) ▪ 0.3 mile of the Solider Summit IRA crossed in the Uinta National Forest resulting in a low impact on the area's characteristics and qualities, 0.7 mile of IRA 0401013 crossed in the Ashley National Forest resulting in a low impact, 0.5 mile of IRA 0401012 crossed in the Ashley National Forest resulting in a low impact, 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact, 10.1 miles of IRA 0401010 crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a moderate impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities, 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact

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LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT-B-5	213.9	22.7	38.9	0.0	83.2	0.0	54.2	10.9	58.4	19.1	0.0	26.0	7.8	102.6	**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 **Parks, Recreation, and Preservation** ▪ 0.4 mile of moderate impacts ▪ Quitchampau non-motorized trail in the Ashley National Forest and Blind Canyon non-motorized trails in the Manti-La Sal National Forest ▪ Crosses a private recreational property/camping area **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.7 mile of moderate impacts ▪ Crosses land zoned for residential in Ballard City and Utah County **Special Designations** ▪ 11.8 miles of moderate impacts ▪ Crosses eight WMAs; refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** (refer to Alternative COUT-B-1 for miles crossed) ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities, 10.1 miles of IRA 0401010 crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of IRA 0401011 crossed in the Ashley National Forest resulting in a moderate impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities, 8.7 miles of the Sowers Canyon East Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact, and 5.6 miles of the Cottonwood Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a moderate impact

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LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Alternative COUT-C and Route Variations															
COUT-C	209.8	21.2	14.3	0.0	83.7	0.0	44.5	27.4	91.2	9.2	0.0	31.1	2.7	75.6	**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 **Parks, Recreation, and Preservation** ▪ 1.3 miles of high impacts ▪ Crosses 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. ▪ 0.1 mile of moderate impacts ▪ Blind Canyon non-motorized trails in the Manti-La Sal National Forest refer to COUT-B for details on the same areas crossed **Future Land Use** ▪ There are no high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.2 mile of moderate impacts where the alternative route crosses land zoned for residential in Utah County **Special Designations** ▪ 0.6 mile of high impacts where the alternative route crosses 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 ▪ 10.6 miles of moderate impacts where the alternative route crosses 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), and where it crosses six WMAs, refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities

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Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT-C-1	206.4	21.1	14.3	0.0	83.7	0.0	43.3	27.4	98.2	11.0	0.0	28.9	2.7	65.6	**Existing Land Use** ▪ 1.3 miles of moderate residual impacts in Utah where the alternative route crosses residential, irrigated farmland, and residential mixed use (authorized) land uses. No high residual impacts **Parks, Recreation, and Preservation** ▪ 0.1 mile of moderate impacts where the alternative route crosses the Blind Canyon non-motorized trail in the Manti-La Sal National Forest, refer to COUT-B for details on the same area crossed **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.2 mile of moderate impacts where the alternative route crosses land zoned for residential in Utah County **Special Designations** ▪ 0.6 mile of high impacts where the alternative route crosses 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 ▪ 10.6 miles of moderate impacts where the alternative route crosses Lower Green River ACEC (with a no surface occupancy allowed within the line of sight or up to 0.5 mile from the centerline of the river, whichever is less), and six WMAs, refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.3 mile of the Solider Summit IRA crossed in the Uinta National Forest resulting in a low impact on the area's characteristics and qualities, 0.7 mile of IRA 0401013 crossed in the Ashley National Forest resulting in a low impact, 1.2 miles of IRA 0401012 crossed in the Ashley National Forest resulting in a moderate impact, and 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact ▪ 0.1 mile of the Right Fork Indian Canyon Unroaded/Undeveloped Area crossed in the Ashley National Forest resulting in a low impact on the area's characteristics and qualities and 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact

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Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT-C-2	207.9	21.1	14.3	0.0	83.7	0.0	43.3	27.4	95.4	10.6	0.0	31.7	2.7	67.5	**Existing Land Use** ▪ 1.2 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 **Parks, Recreation, and Preservation** ▪ 0.3 mile of moderate impacts where the alternative route crosses Blind Canyon non-motorized trails in the Manti-La Sal National Forest (refer to COUT-B for details on the same area crossed), and a private recreational property/camping area **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.2 mile of moderate impacts where the alternative route crosses land zoned for residential in Utah County **Special Designations** ▪ 0.6 mile of high impacts the alternative route crosses 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 (which is where the alternative route currently is crossing) ▪ 10.6 miles of moderate impacts where the alternative route crosses Lower Green River ACEC and six WMAs, refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.3 mile of the Solider Summit IRA crossed in the Uinta National Forest resulting in a low impact on the area's characteristics and qualities, 0.7 mile of IRA 0401013 crossed in the Ashley National Forest resulting in a low impact, 0.5 mile of IRA 0401012 crossed in the Ashley National Forest resulting in a low impact, and 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities
COUT-C-3 (Agency Preferred Alternative)	207.6	21.1	14.3	0.0	83.7	0.0	43.3	27.4	95.0	9.2	0.0	31.7	2.7	69.0	**Existing Land Use** ▪ 1.2 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 **Parks, Recreation, and Preservation** ▪ 0.3 mile of moderate impacts where the alternative route crosses Blind Canyon non-motorized trails in the Manti-La Sal National Forest (refer to COUT-B for details on the same area crossed), and a private recreational property/camping area **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.2 mile of moderate impacts where the alternative route crosses land zoned for residential in Utah County **Special Designations** ▪ 0.6 mile of high impacts where the alternative route crosses 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 (which is where the alternative route currently is crossing) ▪ 10.6 miles of moderate impacts where the alternative route crosses Lower Green River ACEC, and six WMAs, refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities

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Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
COUT-C-4	207.9	21.1	14.3	0.0	83.7	0.0	43.3	27.4	95.6	10.6	0.0	33.7	2.7	65.3	**Existing Land Use** ▪ 1.2 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 **Parks, Recreation, and Preservation** ▪ 3.0 miles of high impacts where the alternative route crosses semi-primitive non-motorized 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. ▪ 0.1 mile of moderate impacts where the alternative route crosses Blind Canyon non-motorized trails in the Manti-La Sal National Forest, refer to COUT-B for details on the same area crossed **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.2 mile of moderate impacts where the alternative route crosses land zoned for residential in Utah County **Special Designations** ▪ 0.6 mile of high impacts where the alternative route crosses 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 ▪ 10.6 miles of moderate impacts where the alternative route crosses Lower Green River ACEC, and six WMAs (refer to COUT-A for details) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.3 mile of the Solider Summit IRA crossed in the Uinta National Forest resulting in a low impact on the area's characteristics and qualities, 0.7 mile of IRA 0401013 crossed in the Ashley National Forest resulting in a low impact, 0.5 mile of IRA 0401012 crossed in the Ashley National Forest resulting in a low impact, 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact ▪ 1.2 miles of the Cedar Knoll Unroaded/Undeveloped Area crossed in the Manti-La Sal National Forest resulting in a moderate impact on the area's characteristics and qualities
COUT-C-5	207.6	21.1	14.3	0.0	83.7	0.0	43.3	27.4	95.2	9.2	0.0	33.7	2.7	66.8	**Existing Land Use** ▪ 1.2 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 **Parks, Recreation, and Preservation** ▪ 3.0 miles of high impacts where the alternative route crosses semi-primitive non-motorized 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. ▪ 0.1 mile of moderate impacts where the alternative Blind Canyon non-motorized trails in the Manti-La Sal National Forest, refer to COUT-B for details on the same area crossed **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.2 mile of moderate impacts where the alternative route crosses land zoned for residential in Utah County **Special Designations** ▪ 0.6 mile of high impacts where the alternative route crosses 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 ▪ 10.6 miles of moderate impacts where the alternative route crosses Lower Green River ACEC and six WMAs (refer to COUT-A for details **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics (refer to COUT BAX-B for details)** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 0.2 mile of the Cedar Knoll IRA crossed in the Manti-La Sal National Forest resulting in a low impact on the area's characteristics and qualities ▪ 1.2 miles of the Cedar Knoll 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-3c
ALTERNATIVE ROUTE COMPARISON
LAND USE; PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; WILDERNESS AREAS, WILDERNESS STUDY AREAS, AND NON-WILDERNESS STUDY AREA LANDS WITH WILDERNESS CHARACTERISTICES; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS

Alternative Route	Length (miles)	Utility Corridors (miles)		Parallel Linear Facilities (within 2,000 feet) (miles)					Jurisdiction (miles)						Summary of Residual Impacts (refer to MV-17 through MV-23)
		Designated (Bureau of Land Management and U.S. Forest Service)	West-wide Energy Corridor	500-kilovolt	345-kilovolt	138-kilovolt	230-kilovolt	Pipeline	Bureau of Land Management	U.S. Forest Service	National Park Service	State	Tribal	Private	
Alternatives COUT-H and COUT-I															
COUT-H (Applicant Preferred Alternative)	200.6	19.4	7.8	0.0	49.8	0.0	40.2	36.5	96.2	7.7	0.0	25.6	2.7	68.4	**Existing Land Use** ▪ 1.8 miles of moderate residual impacts in Utah where the alternative route crosses irrigated farmland. No high residual impacts **Parks, Recreation, and Preservation** ▪ 1.3 miles of high residual impacts where the alternative route crosses semi-primitive non-motorized ROS category in the Price Field Office; refer to COUT-C for details ▪ 0.5 mile of moderate residual impacts where the alternative route crosses snow kite play areas **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ 0.1 mile of moderate residual impacts where the alternative route crosses land zoned for residential in Helper **Special Designations** ▪ 0.6 mile of high residual impacts where the alternative route crosses suitable section of the Lower Green River Wild and Scenic River; refer to COUT-C for details ▪ 6.6 miles of moderate residual impacts where the alternative route crosses Lower Green River ACEC (refer to COUT-C for details), and Gordon Creek and Salt Creek WMAs (refer to COUT-A for details) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office, refer to COUT-A for details **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 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	30.6	8.4	0.0	84.5	0.0	44.8	28.4	123.1	16.9	0.0	36.0	2.7	61.5	**Existing Land Use** ▪ 1.9 miles of moderate residual impacts in Utah where the alternative route crosses irrigated farmland. No high residual impacts **Parks, Recreation, and Preservation** ▪ 1.3 miles of high residual impacts where the alternative route crosses semi-primitive non-motorized ROS category in the Price Field Office (refer to COUT-C for details) ▪ 0.1 mile of moderate residual impacts where the alternative route crosses Booths Canyon non-motorized trails in the Manti-La Sal National Forest (refer to COUT-B for details) **Future Land Use** ▪ No high or moderate residual impacts **Zoning and General Plan Management Direction** ▪ No high or moderate residual impacts **Special Designations** ▪ 1.1 miles of high residual impacts where the alternative route crosses suitable section of the Lower Green River Wild and Scenic River (refer to COUT-C for details), and North Moroni Conservation Easement (refer to COUT BAX-B for details) ▪ 1.8 miles of moderate residual impacts where the alternative route crosses Lower Green River ACEC, Fountain Green and Salt Creek WMAs (refer to COUT-H for details) **Wilderness Areas, WSAs, and Non-WSA Lands with Wilderness Characteristics** ▪ Crosses 2.3 miles of non-WSA lands with wilderness characteristics in the White River Field Office **Inventoried Roadless Areas and Unroaded/Undeveloped Areas** ▪ 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.

TABLE S-3d ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS								
		Visual Resources (refer to MV-20 through MV-23)						
			Viewers (miles crossed)					
Alternative Route	**Length (miles)**	**Scenery (miles crossed)**	**High Concern**	**Moderate Concern**	**Federal Agency Visual Management Objectives**	**Summary of Residual Impacts**	**Cultural Resources**	**Social and Economic Conditions**
Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)								
Alternative WYCO-B and Route Variations								
WYCO-B (Applicant Preferred Alternative)	204.5	▪ Class B – 66.8 ▪ Class C – 137.6	▪ Views within 0.5 mile – 14.7 ▪ Views between 0.5 and 1.0 mile – 16.3	▪ Views within 0.5 mile – 53.5 ▪ Views between 0.5 and 1.0 mile – 44.1	▪ Two areas would not be in compliance with Visual Resource Management (VRM) Class III1 objectives and would require an amendment of the 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 dispersed residence in Little Snake River Valley **Travel Routes** ▪ High impacts on views from Hanna Draw Road where the Project traverses steep terrain ▪ High impacts on views from Sevenmile Ridge Destination Route where the Project would cross the road twice ▪ The Project would cross the Godiva Rim Proposed Backcountry Byway in a natural landscape setting **Recreation Areas** ▪ 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** ▪ 2,070 sites identified by the Class I ▪ 83 sites in the Areas of Potential Effect (APE) ▪ Key resources include the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway. These resources are in the APE ▪ Fort Fred Steele Historic Site is also a key resource in proximity to the alternative route (Wyoming) ▪ An unrecorded segment of the old Victory Highway crosses Link C91 (Colorado). Known segments of the road are located beyond the APE ▪ The Overland Historic Trail (one contributing and one non-contributing segment) is crossed by Link W108 (Wyoming) ▪ The Cherokee Historic Trail (contributing segment) is crossed by Link W113 (Wyoming) **Impacts** ▪ 56.8 miles of high cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-B has the third highest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing within the broader region, although could be considerably more for smaller communities. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.6 million in the first few years and $463,000 in remaining years ▪ There are two residences 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-B-1	204.9	▪ Class B – 66.8 ▪ Class C – 138.0	▪ Views within 0.5 mile – 13.8 ▪ Views between 0.5 and 1.0 mile – 16.8	▪ Views within 0.5 mile – 54.8 ▪ Views between 0.5 and 1.0 mile – 43.2	▪ Same as WYCO-B	Same as WYCO-B except reduced impact on views from a dispersed residence in the Little Snake River Valley	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-B-1 are similar to those identified for Alternative WYCO-B, except for two additional sites (Link C72) in Colorado (outside the APE) ▪ 83 sites in the APE ▪ Same key resources as Alternative WYCO-B ▪ Same national historic trails (NHT) and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-B, Route Variation WYCO-B-1 would include: ▪ Same miles of high and moderate cultural resource intensity ▪ Slightly higher miles of low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.6 million in the first few years and $465,000 in remaining years ▪ There are two residences within 0.1 mile and three within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
WYCO-B-2 (Agency Preferred Alternative)	204.5	▪ Class B – 68.2 ▪ Class C – 136.2	▪ Views within 0.5 mile – 17.1 ▪ Views between 0.5 and 1.0 mile – 17.3	▪ Views within 0.5 mile – 59.1 ▪ Views between 0.5 and 1.0 mile – 40.7	▪ Same as WYCO-B	▪ Same as WYCO- B with the addition of high impacts on views from Deerlodge Road (Dinosaur National Monument) and dispersed residences in the same area.	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-B-2 are similar to those identified for Alternative WYCO-B, except for six additional sites (Link C93) in Colorado (outside the APE) ▪ 83 sites in the APE ▪ Same key resources as Alternative WYCO-B ▪ Same historic trails and historic linear sites are crossed ▪ An unrecorded segment of the old Victory Highway is crossed by Link C93 (Colorado) **Impacts** Compared to Alternative WYCO-B, Route Variation WYCO-B-2 would include: ▪ Same miles of high cultural resource intensity ▪ Slightly higher miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.6 million in first few years and $463,000 in remaining years ▪ There are two residences within 0.1 mile and five within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
WYCO-B-3	204.5	▪ Class B – 66.4 ▪ Class C – 138.0	▪ Views within 0.5 mile – 14.7 ▪ Views between 0.5 and 1.0 mile – 16.6	▪ Views within 0.5 mile – 55.2 ▪ Views between 0.5 and 1.0 mile – 42.6	▪ Same as WYCO-B	▪ Same as WYCO-B	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-B-3 are similar to those identified for Alternative WYCO-B, except for two additional sites (Link C172) in Colorado (outside the APE) ▪ 85 sites in the APE ▪ Same key resources as Alternative WYCO-B ▪ Same historic trails and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-B, Route Variation WYCO-B-3 would include: ▪ An additional 0.3 mile of high cultural resource intensity than Alternative WYCO-B ▪ Same miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Same as WYCO-B.

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
Alternative WYCO-C and Route Variations								
WYCO-C	210.4	▪ Class B – 61.2 ▪ Class C – 148.9	▪ Views within 0.5 mile – 14.9 ▪ Views between 0.5 and 1.0 mile – 15.5	▪ Views within 0.5 mile – 50.4 ▪ Views between 0.5 and 1.0 mile – 38.4	▪ Two areas would not be in compliance with VRM Class III1 objectives and would require an amendment of the 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 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 influenced by an existing pipeline corridor **Special Designations** ▪ No key impacts	**Inventory** ▪ 1,748 sites identified by the Class I ▪ 79 sites in the APE ▪ Key resources include the National Register of Historic Places (NRHP) listed Red Rock Site, the Cherokee and Overland historic trails, the Rawlins to Baggs Stage Road, and the Lincoln Highway. These resources are in the APE, except for Red Rock Site ▪ An unrecorded segment of the old Victory Highway is crossed by Link C91(Colorado) ▪ Fort Fred Steele Historic Site is also a key resource in proximity to the alternative route (Wyoming) ▪ The Overland and the Cherokee historic trails (contributing segments) are crossed by Links W27 and W409, respectively (Wyoming) **Impacts** ▪ 62.7 miles of high cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-C has the second highest miles of high cultural resource intensity	**Impacts** ▪ Same as WYCO-B.
WYCO-C-1	210.8	▪ Class B – 61.2 ▪ Class C – 149.3	▪ Views within 0.5 mile – 14.0 ▪ Views between 0.5 and 1.0 mile – 16.0	▪ Views within 0.5 mile – 51.7 ▪ Views between 0.5 and 1.0 mile – 37.5	▪ Same as WYCO-C	Same as WYCO-C except reduced impact on views from a dispersed residence in the Little Snake River Valley	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-C-1 are similar to those identified for Alternative WYCO-C, except for two additional sites (Link C72) in Colorado (outside APE) ▪ 79 sites in the APE ▪ Same key resources as Alternative WYCO-C ▪ Same historic trails and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-C, Route Variation WYCO-C-1 would include: ▪ Same miles of high and moderate cultural resource intensity ▪ Slightly higher miles of low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.7 million in the first few years and $466,000 in remaining years ▪ There are two residences 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-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
WYCO-C-2	210.4	▪ Class B – 62.6 ▪ Class C – 147.5	▪ Views within 0.5 mile – 17.3 ▪ Views between 0.5 and 1.0 mile – 16.5	▪ Views within 0.5 mile – 56.0 ▪ Views between 0.5 and 1.0 mile – 35.0	▪ Same as WYCO-C	▪ Same as WYCO-C with the addition of high impacts on views from Deerlodge Road (Dinosaur National Monument) and dispersed residences in the same area.	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-C-2 are similar to those identified for Alternative WYCO-B, except for six additional sites (Link C93) in Colorado (outside the APE) ▪ 79 sites in the APE ▪ Same key resources as Alternative WYCO-C ▪ Same historic trails and historic linear sites are crossed ▪ An unrecorded segment of the old Victory Highway is crossed by Link C93 (Colorado) **Impacts** Compared to Alternative WYCO-C, Route Variation WYCO-C-2 would include: ▪ Same miles of high cultural resource intensity ▪ Slightly higher miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.6 million in the first few years and $464,000 in remaining years ▪ There are two residences within 0.1 mile and five within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
WYCO-C-3	210.4	▪ Class B – 60.8 ▪ Class C – 149.3	▪ Views within 0.5 mile – 14.9 ▪ Views between 0.5 and 1.0 mile – 15.8	▪ Views within 0.5 mile – 52.1 ▪ Views between 0.5 and 1.0 mile – 36.9	▪ Same as WYCO-C	▪ Same as WYCO-C	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-C-3 are similar to those identified for Alternative WYCO-B, except for two additional sites (Link C172) in Colorado (outside APE) ▪ 81 sites in the APE ▪ Same key resources as Alternative WYCO-C ▪ Same historic trails and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-C, Route Variation WYCO-C-3 would include: ▪ An additional 0.3 mile of high cultural resource intensity ▪ Same miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.6 million in the first few years and $465,000 in remaining years ▪ There are two residences 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-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
Alternative WYCO-D and Route Variation								
WYCO-D	250.0	▪ Class B – 88.4 ▪ Class C – 160.9	▪ Views within 0.5 mile – 82.2 ▪ Views between 0.5 and 1.0 mile – 36.9	▪ Views within 0.5 mile – 92.0 ▪ Views between 0.5 and 1.0 mile – 45.5	▪ One area would not be in compliance with VRM Class III1 objectives and would require an amendment of the 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 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** ▪ 1,646 sites identified by the Class I ▪ 83 sites in the APE ▪ Key resources include the NRHP-listed Hanna Community Hall, the Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road. These resources are in the APE, except for the Hanna Community Hall ▪ An unrecorded segment of the old Victory Highway is crossed by Link C100 (Colorado) ▪ Fort Fred Steele Historic Site is also a key resource in proximity to the alternative route (Wyoming) ▪ The Overland Historic Trail (contributing segment) and the Cherokee Historic Trail (non-contributing segment) are crossed by Links W110 and W111, respectively (Wyoming) **Impacts** ▪ 44.1 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 housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ 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 50 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
WYCO-D-1	250.0	▪ Class B – 88.0 ▪ Class C – 161.3	▪ Views within 0.5 mile – 82.2 ▪ Views between 0.5 and 1.0 mile – 37.2	▪ Views within 0.5 mile – 93.7 ▪ Views between 0.5 and 1.0 mile – 44.0	▪ Same as WYCO-D	▪ Same as WYCO-D	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-D-1 are similar to those identified for Alternative WYCO-D, except for two additional sites (Link C172) in Colorado (outside the APE) ▪ 85 sites in the APE ▪ Same key resources as Alternative WYCO-D ▪ Same historic trails and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-D, Route Variation WYCO-D-1 would include: ▪ An additional 0.3 mile of high cultural resource intensity ▪ Same miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Same as WYCO-D

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
Alternative WYCO-F and Route Variations								
WYCO-F	218.9	▪ Class B – 60.6 ▪ Class C – 158.1	▪ Views within 0.5 mile – 17.2 ▪ Views between 0.5 and 1.0 mile – 20.1	▪ Views within 0.5 mile – 59.3 ▪ Views between 0.5 and 1.0 mile – 45.2	▪ Two areas would not be in compliance with VRM Class III1 objectives and would require an amendment of the 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 Overland Historic Trail in an area influenced by oil and gas development ▪ High impacts on views from the Cherokee Historic Trail where the Project would cross the trail three times **Special Designations** ▪ No key impacts	**Inventory** ▪ 2,275 sites identified by the Class I ▪ 103 sites in the APE ▪ Key resources include the Cherokee and Overland historic trails, the Lincoln Highway, and the Rawlins to Baggs Stage Road. These resources are in the APE ▪ An unrecorded segment of the old Victory Highway is crossed by Link C91 (Colorado) ▪ Fort Fred Steele Historic Site is also a key resource in proximity to the alternative route (Wyoming) ▪ The Overland Historic Trail (one contributing and one non-contributing segment) is crossed by Link W108 (Wyoming) ▪ The Cherokee Historic Trail (one contributing and two non-contributing segments) is crossed by Links W120 and W124 (Wyoming) **Impacts** ▪ 71.2 miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $7.3 million in the first few years and $728,000 in remaining years ▪ There are two residences 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-F-1	219.3	▪ Class B – 60.6 ▪ Class C – 158.5	▪ Views within 0.5 mile – 16.3 ▪ Views between 0.5 and 1.0 mile – 20.6	▪ Views within 0.5 mile – 60.6 ▪ Views between 0.5 and 1.0 mile – 44.3	▪ Same as WYCO-F	▪ Same as WYCO-F except reduced impact on dispersed residence in Little Snake River Valley	**Inventory** ▪ Class I sites potentially affected are similar to those identified for Alternative WYCO-F, except for two additional sites (Link C72) in Colorado (outside the APE) ▪ 103 sites in the APE ▪ Same key resources as Alternative WYCO-F ▪ Same historic trails and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-F, Route Variation WYCO-F-1 would include: ▪ Same miles of high and moderate cultural resource intensity ▪ Slightly higher miles of low cultural resource intensity ▪ Of the alternative routes considered for the WYCO segment, Alternative WYCO-F has the highest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $7.3 million in the first few years and $731,000 in remaining years ▪ There are two residences within 0.1 mile and three within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
WYCO-F-2	218.9	▪ Class B – 62 ▪ Class C – 156.7	▪ Views within 0.5 mile – 19.6 ▪ Views between 0.5 and 1.0 mile – 21.1	▪ Views within 0.5 mile – 64.9 ▪ Views between 0.5 and 1.0 mile – 41.8	▪ Same as WYCO-F	▪ Same as WYCO-C with the addition of high impacts on views from Deerlodge Road (Dinosaur National Monument) and dispersed residences in the same area.	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-F-2 are similar to those identified for Alternative WYCO-F, except for six additional sites (Link C93) in Colorado (outside the APE) ▪ 103 sites in the APE ▪ Same key resources as Alternative WYCO-F ▪ Same historic trails and historic linear sites are crossed ▪ An unrecorded segment of the old Victory Highway is crossed by Link C93 (Colorado) **Impacts** Compared to Alternative WYCO-F, Route Variation WYCO-F-2 would include: ▪ Same miles of high cultural resource intensity ▪ Slightly higher miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as WYCO-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $7.3 million in the first few years and $727,000 in remaining years ▪ There are two residences within 0.1 mile and five within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
WYCO-F-3	218.9	▪ Class B – 60.2 ▪ Class C – 158.5	▪ Views within 0.5 mile – 17.2 ▪ Views between 0.5 and 1.0 mile – 20.4	▪ Views within 0.5 mile – 61.0 ▪ Views between 0.5 and 1.0 mile – 43.7	▪ Same as WYCO-F	▪ Same as WYCO-C	**Inventory** ▪ Class I sites potentially affected by Route Variation WYCO-F-3 are similar to those identified for Alternative WYCO-F, except for two additional sites (Link C172) in Colorado (outside the APE) ▪ 105 sites in the APE ▪ Same key resources as Alternative WYCO-F ▪ Same historic trails and historic linear sites are crossed **Impacts** Compared to Alternative WYCO-F, Route Variation WYCO-F-3 would include: ▪ An additional 0.3 mile of high cultural resource intensity ▪ Same miles of moderate cultural resource intensity ▪ Slightly fewer miles of low cultural resource intensity	**Impacts** ▪ Same as WYCO-F

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)								
COUT BAX-B	279.2	▪ Class A – 9.0 ▪ Class B – 106.3 ▪ Class C – 163.7	▪ Views within 0.5 mile – 139.3 ▪ Views between 0.5 and 1.0 mile – 58.0	▪ Views within 0.5 mile – 112.8 ▪ Views between 0.5 and 1.0 mile – 49.4	▪ Eight areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the White River, Grand Junction, Moab, and Price Field Office RMPs: • Dinosaur Diamond Scenic Byway crossing in Canyon Pintado National Historic District (NHD) • 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** ▪ 1,472 sites identified by the Class I ▪ 93 sites in the APE ▪ Key resources include the Old Spanish NHT, 28 NRHP-listed properties (including Canyon Pintado NHD and Carrot Men Pictograph Site in Colorado), the Uintah Railway, the Dragon to Rangely Stage/Freight Road, the Dragon-Douglas Trail, U. S. Highway 6, the Denver & Rio Grande Western (D&RGW) Railway, the Buckhorn Flat Railroad, the Utah Southern Railroad, and the Ballard and Thompson Railroad. These resources are in the APE, except for the 28 NRHP-listed properties and the Utah Southern Railroad ▪ The Old Spanish NHT is crossed by Links U487, U728, U729, U730, and U732 (Utah) ▪ A known segment of the Old Spanish NHT is in proximity to Link C270 (Colorado) ▪ Four cultural resources designated as Areas of Critical Environmental Concern (ACEC) are located in all three cultural resource intensity zones in Utah (Big Hole, Cottonwood Canyon, Smith Cabin, and Tidwell Draw) (Utah); Big Hole is crossed by Link U730 (Utah) **Impacts** ▪ 113 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT BAX segment, Alternative COUT BAX-B has the highest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing within the broader region, although could be more considerable for smaller communities. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $7.4 million in the first few years and $746,000 in remaining years ▪ There are 10 residences within 0.1 mile and 106 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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-C	289.7	▪ Class A – 9.0 ▪ Class B – 107.4 ▪ Class C – 173.1	▪ Views within 0.5 mile – 147.5 ▪ Views between 0.5 and 1.0 mile – 62.8	▪ Views within 0.5 mile – 121.1 ▪ Views between 0.5 and 1.0 mile – 50.2	▪ Ten areas would not be in compliance with VRM Class III[1] objectives and would require an amendment of the White River, Grand Junction, Moab, and Price Field Office RMPs: • Dinosaur Diamond Scenic Byway crossing in Canyon Pintado NHD • 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** ▪ 1,472 sites identified by the Class I ▪ 95 sites in the APE ▪ Key resources include the Old Spanish NHT, 28 NRHP-listed properties (including Canyon Pintado NHD and Carrot Men Pictograph Site in Colorado), the Uintah Railway, the Dragon to Rangely Stage/Freight Road, the Dragon-Douglas Trail, the U.S. Highway 6, the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Southern Railroad, and the Ballard and Thompson Railroad. These resources are in the APE, except for the 28 NRHP-listed properties and the Utah Southern Railroad ▪ The Book Cliffs Archaeological Sites and Rock Art are also key resources in proximity to the alternative route (Utah) ▪ The Old Spanish NHT is 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) ▪ One ACEC with cultural resources (Big Hole) is located in the APE; Big Hole ACEC is crossed by Link U734 (Utah) **Impacts** ▪ 99.8 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 housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $7.6 million in the first few years and $765,000 in remaining years ▪ There are 10 residences within 0.1 mile and 106 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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-E	291.5	▪ Class A – 2.4 ▪ Class B – 106.3 ▪ Class C – 182.7	▪ Views within 0.5 mile – 117.1 ▪ Views between 0.5 and 1.0 mile – 64.7	▪ Views within 0.5 mile – 137.5 ▪ Views between 0.5 and 1.0 mile – 51.3	▪ Eight areas would not be in compliance with VRM Class III1 objectives and would require an amendment of the White River, Grand Junction, Moab, and Price Field Office RMPs: • Dinosaur Diamond Scenic Byway crossing in Canyon Pintado NHD • 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 ▪ Conforms with the Manti-La Sal National Forest LRMP	**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** ▪ 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	**Inventory** ▪ 1,701 sites identified by the Class I ▪ 120 sites in the APE ▪ Key resources include the Old Spanish NHT, eight NRHP-listed properties (including Canyon Pintado NHD and Carrot Men Pictograph Site in Colorado), the Uintah Railway, the Dragon to Rangely Stage/Freight Road, the Dragon-Douglas Trail, the U.S. Highway 6, the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Southern Railroad, the Utah and Pleasant Valley Railway, and the Ballard and Thompson Railroad. These resources are in the APE, except for the eight NRHP-listed properties and the Utah Southern Railroad ▪ The Book Cliffs Archaeological Sites and Rock Art are also key resources in proximity to the alternative route (Utah) ▪ The Old Spanish NHT is 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) ▪ One ACEC with cultural resources (Grassy Trail) is located in the low cultural resource intensity zone (Utah) **Impacts** ▪ 86.5 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	**Impacts** ▪ Temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $7.8 million in the first few years and $788,000 in remaining years ▪ There are 17 residences within 0.1 mile and 106 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23): Scenery (miles crossed)	Viewers (miles crossed): High Concern	Viewers (miles crossed): Moderate Concern	Federal Agency Visual Management Objectives	Summary of Residual Impacts	Cultural Resources	Social and Economic Conditions
Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)								
COUT-A and Route Variation								
COUT-A	206.0	▪ Class A – 1.3 ▪ Class B – 121.2 ▪ Class C – 82.9	▪ Views within 0.5 mile – 59.6 ▪ Views between 0.5 and 1.0 mile – 41.1	▪ Views within 0.5 mile – 76.8 ▪ Views between 0.5 and 1.0 mile – 35.5	▪ Compliant with VRM Class III and IV1 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** ▪ No key impacts **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** ▪ 487 sites identified by the Class I ▪ 16 sites in APE ▪ Key resources include six NRHP-listed properties, one designated traditional cultural property (TCP), U.S. Highway 6, the Utah and Pleasant Valley Railway, the Utah Southern Railroad, and the old Victory Highway. These resources are outside the APE ▪ Two additional key resources along this alternative are the Sevier Railway/Marysvale Branch of the D&RGW Railway, which are in the APE ▪ This alternative avoids the Old Spanish NHT **Impacts** ▪ 2.6 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 housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ 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-A-1	205.6	▪ Class A – 1.3 ▪ Class B – 120.8 ▪ Class C – 82.9	▪ Views within 0.5 mile – 59.3 ▪ Views between 0.5 and 1.0 mile – 41.1	▪ Views within 0.5 mile – 76.1 ▪ Views between 0.5 and 1.0 mile – 35.8	▪ Same as COUT-A	Increased impacts on views from the White River Strawberry Road Scenic Backway where the Project would cross the road multiple times	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-A-1 are the same as those identified for Alternative COUT-A ▪ 16 sites in the APE ▪ Same key resources as Alternative COUT-A ▪ Same NHTs and historic linear sites are crossed **Impacts** Compared to Alternative COUT-A, Route Variation COUT-A-1 would include: ▪ Same miles of high cultural resource intensity ▪ Slightly fewer miles of moderate and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.2 million in the first few years and $491,000 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

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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				
Alternative COUT-B and Route Variations								
COUT-B	216.0	▪ Class A – 1.8 ▪ Class B – 123.6 ▪ Class C – 89.6	▪ Views within 0.5 mile – 52.2 ▪ Views between 0.5 and 1.0 mile – 40.1	▪ Views within 0.5 mile – 81.0 ▪ Views between 0.5 and 1.0 mile – 28.9	▪ Compliant with VRM Class III and IV1 objectives ▪ 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 where the Project traverses steep, forested terrain **Residences** ▪ 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	**Inventory** ▪ 556 sites identified by the Class I ▪ 26 sites in the APE ▪ Key resources include six NRHP-listed historic properties, one designated TCP, the Utah and Pleasant Valley Railway, the Utah Southern Railroad, the old Victory Highway, and the old Emma Park Road. These resources, are outside the 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 APE ▪ Argyle Canyon Rock Art is also a key resource along this alternative route in Utah, which is located in the APE ▪ This alternative avoids the Old Spanish NHT **Impacts** ▪ 4.8 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-B has the second fewest miles of high cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.2 million in the first few years and $496,000 in remaining years ▪ There are 41 residences within 0.1 mile and 199 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-B-1	212.7	▪ Class A –1.8 ▪ Class B – 132.4 ▪ Class C – 78.1	▪ Views within 0.5 mile – 61.8 ▪ Views between 0.5 and 1.0 mile – 38.5	▪ Views within 0.5 mile – 74.6 ▪ Views between 0.5 and 1.0 mile – 29.8	Same as COUT-B except: ▪ One area would not be in compliance with VRM Class III[1] objectives and would require an amendment of the Vernal Field Office RMP: • Reservation Ridge Scenic Backway ▪ Two areas would not be in conformance with Ashley National Forests LRMP: • Avintaquin Campground • Reservation Ridge Scenic Backway	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins on Reservation Ridge **Travel Routes** ▪ High impacts on views from the Reservation Ridge Scenic Backway **Recreation Areas** ▪ High impacts on views from Avintaquin Campground **Special Designations** ▪ No key impacts	▪ Inventory ▪ Class I sites potentially affected by Route Variation COUT-B-1 are similar to those identified for Alternative COUT-B, with the exception of 45 fewer sites (Links U511, U513, U515, and U560) in Utah ▪ 23 sites in the APE ▪ Same key resources as Alternative COUT-B ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-B, Route Variation COUT-B-1 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.1 million in the first few years and $489,000 in remaining years ▪ There are 44 residences within 0.1 mile and 206 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-B-2	214.2	▪ Class A – 1.8 ▪ Class B – 133.9 ▪ Class C – 78.1	▪ Views within 0.5 mile – 57.7 ▪ Views between 0.5 and 1.0 mile – 42.2	▪ Views within 0.5 mile – 73.2 ▪ Views between 0.5 and 1.0 mile – 28.6	Same as COUT-B except: ▪ One area would not be in conformance with Ashley National Forest: • Reservation Ridge Scenic Backway	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins south of Reservation Ridge **Travel Routes** ▪ High impacts on viewers from the Reservation Ridge Scenic Backway **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-B-2 are similar to those identified for Alternative COUT-B, with the exception of 45 fewer sites (Links U511, U514, U515, U520, U540, and U560) in Utah ▪ 23 sites in the APE ▪ Same key resources as Alternative COUT-B ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-B, Route Variation COUT-B-2 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.2 million in the first few years and $492,000 in remaining years ▪ There are 40 residences within 0.1 mile and 197 within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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-B-3	213.9	▪ Class A – 1.8 ▪ Class B – 133.6 ▪ Class C – 78.1	▪ Views within 0.5 mile – 52.3 ▪ Views between 0.5 and 1.0 mile – 40.5	▪ Views within 0.5 mile – 73.2 ▪ Views between 0.5 and 1.0 mile – 28.6	▪ Same as COUT-B	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins south of Reservation Ridge **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-B-3 are similar to those identified for Alternative COUT-B, with the exception of 34 fewer sites (Links U512, U514, U516, U560) in Utah ▪ 23 sites in the APE ▪ Same key resources as Alternative COUT-B ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-B, Route Variation COUT-B-3 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.2 million in the first few years and $491,000 in remaining years ▪ There are 44 residences within 0.1 mile and 206 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-B-4	214.2	▪ Class A – 1.8 ▪ Class B – 133.9 ▪ Class C – 78.1	▪ Views within 0.5 mile – 58.7 ▪ Views between 0.5 and 1.0 mile – 41.2	▪ Views within 0.5 mile – 73.2 ▪ Views between 0.5 and 1.0 mile – 28.6	▪ Same as COUT-B	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins south of Reservation Ridge **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-B-4 are similar to those identified for Alternative COUT-B, with the exception of 45 fewer sites (Links U512, U514, U515, U540, and U560) in Utah ▪ 23 sites in the APE ▪ Same key resources as Alternative COUT-B ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-B, Route Variation COUT-B-4 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.2 million in the first few years and $492,000 in remaining years ▪ There are 44 residences within 0.1 mile and 207 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-B-5	213.9	▪ Class A – 1.8 ▪ Class B – 133.6 ▪ Class C – 78.1	▪ Views within 0.5 mile – 51.3 ▪ Views between 0.5 and 1.0 mile – 41.5	▪ Views within 0.5 mile – 73.2 ▪ Views between 0.5 and 1.0 mile – 28.6	▪ Same as COUT-B	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins south of Reservation Ridge **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-B-5 are similar to those identified for Alternative COUT-B, with the exception of 34 fewer sites (Links U511, U514, U516, U520, and U560) in Utah ▪ 23 sites in the APE ▪ Same key resources as Alternative COUT-B ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-B, Route Variation COUT-B-5 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.2 million in the first few years and $492,000 in remaining years ▪ There are 40 residences within 0.1 mile and 196 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23): Scenery (miles crossed)	Viewers (miles crossed): High Concern	Viewers (miles crossed): Moderate Concern	Federal Agency Visual Management Objectives	Summary of Residual Impacts	Cultural Resources	Social and Economic Conditions
Alternative COUT-C and Route Variations								
COUT-C	209.8	▪ Class A – 3.6 ▪ Class B – 103.5 ▪ Class C – 101.9	▪ Views within 0.5 mile – 35.7 ▪ Views between 0.5 and 1.0 mile – 40.6	▪ Views within 0.5 mile – 60.0 ▪ Views between 0.5 and 1.0 mile – 20.2	▪ 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 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 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 WSR where the Project would be skylined on the steep canyon walls	**Inventory** ▪ 1,197 sites identified by the Class I ▪ 56 sites in the APE ▪ Key resources include 6 NRHP-listed properties, the old Victory Highway, one designated TCP, the old Emma Park Road, the Utah and Pleasant Valley Railway, the Utah Southern Railroad, and Nine Mile Canyon ACEC. These resources are outside the APE ▪ Two additional key resources are U.S. Highway 6 and the Sevier Railway/Marysvale Branch of the D&RGW Railway, which are in the APE ▪ Argyle Canyon Rock Art is also a key resource along this alternative route in Utah, which is located in the APE ▪ This alternative avoids the Old Spanish NHT **Impacts** ▪ 7.4 miles of high cultural resource intensity ▪ Of the alternative routes considered for the COUT segment, Alternative COUT-C has the third highest miles of high cultural resource intensity	**Impacts** ▪ Temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.0 million in the first few years and $477,000 in remaining years ▪ There are 11 residences within 0.1 mile and 98 within 0.25 mile, with minimal adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-C-1	206.4	▪ Class A – 3.6 ▪ Class B – 112.1 ▪ Class C – 90.5	▪ Views within 0.5 mile – 47.9 ▪ Views between 0.5 and 1.0 mile – 41.8	▪ Views within 0.5 mile – 53.6 ▪ Views between 0.5 and 1.0 mile – 21.1	Same as COUT-C except: ▪ One additional area would not be in compliance with VRM Class III[1] objectives and would require an amendment of the Vernal Field Office RMP: • Reservation Ridge Scenic Backway ▪ Two areas would not be in conformance with Ashley National Forest LRMP: • Avintaquin Campground • Reservation Ridge Scenic Backway	Same as COUT-C except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins on Argyle Ridge and Reservation Ridge **Travel Routes** ▪ High impacts on viewers from the Reservation Ridge Scenic Backway **Recreation Areas** ▪ High impacts on views from Avintaquin Campground **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-C-1 are similar to those identified for Alternative COUT-C, with the exception of 40 fewer sites (Links U-409, U511, U513, U515, and U560) in Utah ▪ 54 sites in the APE ▪ Same key resources as Alternative COUT-C ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-C, Route Variation COUT-C-1 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.9 million in the first few years and $469,000 in remaining years ▪ There are 16 residences within 0.1 mile and 114 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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-C-2	207.9	▪ Class A – 3.6 ▪ Class B – 113.6 ▪ Class C – 90.5	▪ Views within 0.5 mile – 43.8 ▪ Views between 0.5 and 1.0 mile – 45.5	▪ Views within 0.5 mile – 52.2 ▪ Views between 0.5 and 1.0 mile – 19.9	Same as COUT-C except: ▪ One area would not be in conformance with Ashley National Forest LRMP • Reservation Ridge Scenic Backway	Same as COUT-C except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins on Argyle Ridge and Reservation Ridge **Travel Routes** ▪ High impacts on viewers from the Reservation Ridge Scenic Backway **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-C-2 are similar to those identified for Alternative COUT-C, with the exception of 40 fewer sites (Links U-409, U511, U514, U515, U520, U540, and U560) in Utah ▪ 54 sites in the APE ▪ Same key resources as Alternative COUT-C ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-C, Route Variation COUT-C-2 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.0 million in the first few years and $473,000 in remaining years ▪ There are 12 residences within 0.1 mile and 105 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-C-3 (Agency Preferred Alternative)	207.6	▪ Class A – 3.6 ▪ Class B – 113.3 ▪ Class C – 90.5	▪ Views within 0.5 mile – 37.4 ▪ Views between 0.5 and 1.0 mile – 44.8	▪ Views within 0.5 mile – 52.2 ▪ Views between 0.5 and 1.0 mile – 19.9	▪ Same as COUT-C	Same as COUT-C except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins on Argyle Ridge and Reservation Ridge **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-C-3 are similar to those identified for Alternative COUT-C, with the exception of 39 fewer sites (Links U-409, U514, U516, U520, and U560) in Utah ▪ 54 sites in the APE ▪ Same key resources as Alternative COUT-C ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-C, Route Variation COUT-C-3 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.0 million in the first few years and $472,000 in remaining years ▪ There are 12 residences within 0.1 mile and 104 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
COUT-C-4	207.9	▪ Class A – 3.6 ▪ Class B – 113.6 ▪ Class C – 90.5	▪ Views within 0.5 mile – 43.6 ▪ Views between 0.5 and 1.0 mile – 46.3	▪ Views within 0.5 mile – 52.2 ▪ Views between 0.5 and 1.0 mile – 19.9	Same as COUT-C except: ▪ One area would not be in conformance with Ashley National Forest LRMP: • Reservation Ridge Scenic Backway	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins along Minnie Maud Creek and Reservation Ridge **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-C-4 are similar to those identified for Alternative COUT-C, with the exception of 53 fewer sites (Links U-411, U512, U514, U515, U540, and U560) in Utah ▪ 53 sites in the APE ▪ Same key resources as Alternative COUT-C ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-C, Route Variation COUT-C-4 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.0 million in the first few years and $473,000 in remaining years ▪ There are 14 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-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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-C-5	207.6	▪ Class A – 3.6 ▪ Class B – 13.3 ▪ Class C – 90.5	▪ Views within 0.5 mile – 37.2 ▪ Views between 0.5 and 1.0 mile – 45.6	▪ Views within 0.5 mile – 52.2 ▪ Views between 0.5 and 1.0 mile – 19.9	▪ Same as COUT-C	Same as COUT-B except: **Scenery** ▪ High impacts on the Tavaputs Plateau and Roan Cliffs landscapes where the Project traverses steep, forested terrain **Residences** ▪ High impacts on views from summer cabins along Minnie Maud Creek and Reservation Ridge **Travel Routes** ▪ No key impacts **Recreation Areas** ▪ No key impacts **Special Designations** ▪ No key impacts	**Inventory** ▪ Class I sites potentially affected by Route Variation COUT-C-4 are similar to those identified for Alternative COUT-C, with the exception of 42 fewer sites (Links U411, U512, U514, U516, and U560) in Utah ▪ 53 sites in the APE ▪ Same key resources as Alternative COUT-C ▪ Same significant linear sites are crossed **Impacts** Compared to Alternative COUT-C, Route Variation COUT-C-5 would include: ▪ Slightly fewer miles of high, moderate, and low cultural resource intensity	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.0 million in the first few years and $472,000 in remaining years ▪ There are 14 residences within 0.1 mile and 106 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population
Alternatives COUT-H and COUT-I								
COUT-H (Applicant Preferred Alternative)	200.6	▪ Class A – 5.8 ▪ Class B – 89.9 ▪ Class C – 104.5	▪ Views within 0.5 mile – 38.5 ▪ Views between 0.5 and 1.0 mile – 32.5	▪ Views within 0.5 mile – 45.7 ▪ Views between 0.5 and 1.0 mile – 22.6	▪ 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 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** ▪ 1,346 sites identified by the Class I ▪ 81 sites in APE ▪ Key resources include 10 NRHP-listed properties, the Utah Pleasant Valley Railway, the Utah Railway, the Utah Southern Railroad, the Kenilworth and Spring Canyon branches of the D&RGW Railway, the Emma Park Road, the old Victory Highway, and Nine Mile Canyon ACEC. Of these resources, only the railways are in the APE ▪ Argyle Canyon Rock Art is also a key resource along this alternative route in Utah, which is located in the APE ▪ This alternative avoids the Old Spanish NHT **Impacts** ▪ 10.2 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 housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $4.8 million in the first few years and $457,000 in remaining years ▪ There are 18 residences within 0.1 mile and 147 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

TABLE S-3d
ALTERNATIVE ROUTE COMPARISON – VISUAL RESOURCES, CULTURAL RESOURCES, AND SOCIAL AND ECONOMIC CONDITIONS

Alternative Route	Length (miles)	Visual Resources (refer to MV-20 through MV-23)					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-I	240.2	▪ Class A – 12.4 ▪ Class B – 88.6 ▪ Class C – 139.0	▪ Views within 0.5 mile – 48.7 ▪ Views between 0.5 and 1.0 mile – 37.6	▪ Views within 0.5 mile – 34.2 ▪ Views between 0.5 and 1.0 mile – 24.8	▪ 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 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 Green River suitable Wild and Scenic River where the Project would be skylined on the steep canyon walls	**Inventory** ▪ 1,486 sites identified by the Class I ▪ 77 sites in APE ▪ Key resources include 24 NRHP-listed properties, the old Victory Highway, the D&RGW Railway, the Buckhorn Flat Railroad, the Utah Railway, the Utah Southern Railroad, the old Emma Park Road, and Nine Mile Canyon ACEC. These resources are outside the APE ▪ An additional key resource along this alternative is the D&RGW Railway extension, which is in the APE ▪ Argyle Canyon Rock Art is also a key resource along this alternative route in Utah, which is located in the APE **Impacts** ▪ 12 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	**Impacts** ▪ Low and temporary impact on employment and housing would be the same as COUT BAX-B. ▪ Minimal and temporary impact on population and government services ▪ Increased property taxes of $5.5 million in the first few years and $521,000 in remaining years ▪ There are 10 residences within 0.1 mile and 99 within 0.25 mile, with moderate adverse impacts on property values. ▪ No disproportionate impact on environmental justice population

NOTE: [1]For descriptions of the four VRM classes, refer to Section 3.2.16.4.

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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)										
Alternative WYCO-B and Route Variations										
WYCO-B (Applicant Preferred Alternative)	204.5	24.8 (12%)	179.7 (88%)	▪ 0.9 mile parallel to transmission lines within 300 feet[1] ▪ 23.9 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 ▪ 5.7 miles parallel to pipelines within 300 feet ▪ 38.6 miles parallel to pipelines between 300 to 2,000 feet	125.8	0.0	0.0	14.7	0.0	64.0
WYCO-B-1	204.9	24.8 (12%)	180.1 (88%)	▪ 0.9 mile parallel to transmission lines within 300 feet[1] ▪ 23.9 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 ▪ 5.7 miles parallel to pipelines within 300 feet ▪ 38.6 miles parallel to pipelines between 300 to 2,000 feet	127.3	0.0	0.0	13.7	0.0	63.9
WYCO-B-2 (Agency Preferred Alternative)	204.5	19.3 (9%)	185.2 (91%)	▪ 1.0 mile parallel to transmission lines within 300 feet[1] ▪ 18.3 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 ▪ 5.7 miles parallel to pipelines within 300 feet ▪ 38.6 miles parallel to pipelines between 300 to 2,000 feet	124.1	0.0	0.1	14.7	0.0	65.6
WYCO-B-3	204.5	24.8 (12%)	179.7 (88%)	▪ 4.4 miles parallel to transmission lines within 300 feet[1] ▪ 20.4 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 ▪ 5.7 miles parallel to pipelines within 300 feet ▪ 38.6 miles parallel to pipelines between 300 to 2,000 feet	125.4	0.0	0.0	14.7	0.0	64.4
Alternative WYCO-C and Route Variations										
WYCO-C	210.4	28.8 (14%)	181.6 (86%)	▪ 0.9 mile parallel to transmission lines within 300 feet[1] ▪ 27.9 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 ▪ 23.0 miles parallel to pipelines within 300 feet ▪ 60.4 miles parallel to pipelines between 300 to 2,000 feet	127.3	0.0	0.0	15.0	0.0	68.1
WYCO-C-1	210.8	28.8 (14%)	182.0 (86%)	▪ 0.9 mile parallel to transmission lines within 300 feet[1] ▪ 27.9 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 ▪ 23.0 miles parallel to pipelines within 300 feet ▪ 60.4 miles parallel to pipelines between 300 to 2,000 feet	128.8	0.0	0.0	14.0	0.0	68.0
WYCO-C-2	210.4	23.3 (11%)	187.1 (89%)	▪ 1.0 mile parallel to transmission lines within 300 feet[1] ▪ 22.3 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 ▪ 23.0 miles parallel to pipelines within 300 feet ▪ 60.4 miles parallel to pipelines between 300 to 2,000 feet	125.6	0.0	0.1	1.0	0.0	69.7
WYCO-C-3	210.4	28.8 (14%)	181.6 (86%)	▪ 4.4 miles parallel to transmission lines within 300 feet[1] ▪ 24.4 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 ▪ 23.0 miles parallel to pipelines within 300 feet ▪ 60.4 miles parallel to pipelines between 300 to 2,000 feet	126.9	0.0	0.0	15.0	0.0	68.5

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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
Alternative WYCO-D and Route Variation										
WYCO-D	250.0	92.6 (37%)	157.4 (63%)	▪ 12.1 miles parallel to transmission lines within 300 feet[1] ▪ 80.5 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) ▪ 9.1 miles parallel to pipelines within 300 feet ▪ 54.8 miles parallel to pipelines between 300 to 2,000 feet	105.8	0.0	0.0	25.3	0.0	118.9
WYCO-D-1	250.0	92.6 (37%)	157.4 (63%)	▪ 15.5 miles parallel to transmission lines within 300 feet[1] ▪ 77.1 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) ▪ 9.1 miles parallel to pipelines within 300 feet ▪ 54.8 miles parallel to pipelines between 300 to 2,000 feet	105.4	0.0	0.0	25.3	0.0	119.3
Alternative WYCO-F and Route Variations										
WYCO-F	218.9	24.8 (13%)	194.1 (87%)	▪ 0.9 mile parallel to transmission lines within 300 feet[1] ▪ 23.9 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 ▪ 6.1 miles parallel to pipelines within 300 feet ▪ 7.8 miles parallel to pipelines between 300 to 2,000 feet	140.7	0.0	0.0	14.9	0.0	63.3
WYCO-F-1	219.3	24.8 (13%)	194.5 (87%)	▪ 0.9 mile parallel to transmission lines within 300 feet[1] ▪ 23.9 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 ▪ 2.0 mile parallel to pipelines within 300 feet ▪ 7.8 miles parallel to pipelines between 300 to 2,000 feet	142.2	0.0	0.0	13.9	0.0	63.2
WYCO-F-2	218.9	19.3 (9%)	199.6 (91%)	▪ 1.0 mile parallel to transmission lines within 300 feet[1] ▪ 18.3 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 ▪ 6.1 miles parallel to pipelines within 300 feet ▪ 47.7 miles parallel to pipelines between 300 to 2,000 feet	139.0	0.0	0.1	14.9	0.0	64.9
WYCO-F-3	218.9	24.8 (11%)	194.1 (89%)	▪ 4.4 miles parallel to transmission lines within 300 feet[1] ▪ 20.4 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 ▪ 6.1 miles parallel to pipelines within 300 feet ▪ 41.7 miles parallel to pipelines between 300 to 2,000 feet	140.3	0.0	0.0	14.9	0.0	63.7
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)										
COUT BAX-B	279.2	101.5 (36%)	177.7 (64%)	▪ 2.2 miles parallel to transmission lines within 300 feet[1] ▪ 99.2 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, and the Mona to Bonanza 345kV transmission line once ▪ 9.2 miles parallel to pipelines within 300 feet ▪ 27.3 miles parallel to pipelines between 300 to 2,000 feet	172.7	16.9	0.0	30.9	0.0	58.7

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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-C	289.7	91.4 (32%)	198.3 (68%)	▪ 12.1 miles parallel to linear facilities within 300 feet[1] ▪ 79.4 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, and the Mona to Bonanza 345kV transmission line once ▪ 27.3 miles parallel to pipelines within 300 feet ▪ 36.6 miles parallel to pipelines between 300 to 2,000 feet	179.3	16.9	0.0	34.8	0.0	58.7
COUT BAX-E	291.5	70.9 (24%)	220.6 (76%)	▪ 28.4 miles parallel to transmission lines within 300 feet[1] ▪ 42.5 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 ▪ 9.4 miles parallel to pipelines within 300 feet ▪ 33.8 miles parallel to pipelines between 300 to 2,000 feet	191.0	7.7	0.0	27.1	0.0	65.7
Colorado to Utah – U.S. Highway 40 to Central, Utah, to Clover (COUT)										
Alternative COUT-A and Route Variation										
COUT-A	206.0	123.7 (60%)	82.3 (40%)	▪ 11.9 miles parallel to transmission lines within 300 feet[1] ▪ 111.9 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 138kV transmission line once, Bonanza to Vernal 138kV transmission line once, Mona to Bonanza 345kV transmission line 10 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 twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.6 miles parallel to pipelines within 300 feet ▪ 11.1 miles parallel to pipelines between 300 to 2,000 feet	55.4	20.0	0.0	24.8	0.0	105.8
COUT-A-1	205.6	121.4 (59%)	84.2 (41%)	▪ 11.5 miles parallel to transmission lines within 300 feet[1] ▪ 109.9 miles parallel to transmission lines between 300 to 2,000 feet[1] • Similar but crosses the Mona to Bonanza 345kV transmission line two times less that COUT-A. ▪ 2.6 miles parallel to pipelines within 300 feet ▪ 11.1 miles parallel to pipelines between 300 to 2,000 feet	55.4	20.0	0.0	24.8	0.0	105.8
Alternative COUT-B and Route Variations										
COUT-B	216.0	163.0 (75%)	53.0 (25%)	▪ 52.8 miles parallel to transmission lines within 300 feet[1] ▪ 110.1 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 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 ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 10.9 miles parallel to pipelines between 300 to 2,000 feet	56.2	19.1	0.0	26.4	7.8	106.5

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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-B-1	212.7	150.7 (71%)	62.0 (29%)	▪ 45.5 miles parallel to transmission lines within 300 feet[1] ▪ 105.2 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 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 ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 10.9 miles parallel to pipelines between 300 to 2,000 feet	61.6	20.9	0.0	23.2	7.8	99.2
COUT-B-2	214.2	150.7 (70%)	63.5 (30%)	▪ 45.5 miles parallel to transmission lines within 300 feet[1] ▪ 105.2 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 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 ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 10.9 miles parallel to pipelines between 300 to 2,000 feet	58.8	20.5	0.0	26.0	7.8	101.1
COUT-B-3	213.9	153.0 (72%)	60.9 (28%)	▪ 45.7 miles parallel to transmission lines within 300 feet[1] ▪ 107.3 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 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 ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 10.9 miles parallel to pipelines between 300 to 2,000 feet	58.4	19.1	0.0	25.2	7.8	103.4
COUT-B-4	214.2	153.0 (71%)	61.2 (29%)	▪ 45.7 miles parallel to transmission lines within 300 feet[1] ▪ 107.3 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 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 ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 10.9 miles parallel to pipelines between 300 to 2,000 feet	58.8	20.5	0.0	25.2	7.8	101.9

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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-B-5	213.9	150.7 (70%)	63.2 (30%)	45.5 miles parallel to transmission lines within 300 feet[1] ▪ 107.3 miles parallel to transmission lines between 300 to 2,000 feet[1] • Crosses Bears Ears to Bonanza 345kV transmission line once, Hayden to Artesia 138kV transmission line once, Artesia to Vernal 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 ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 10.9 miles parallel to pipelines between 300 to 2,000 feet	58.4	19.1	0.0	26.0	7.8	102.6
Alternative COUT-C and Route Variations										
COUT-C	209.8	106.5 (51%)	103.3 (49%)	▪ 14.0 miles parallel to transmission lines within 300 feet[1] ▪ 92.5 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 five times, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.3 miles parallel to pipelines within 300 feet ▪ 27.4 miles parallel to pipelines between 300 to 2,000 feet	91.2	9.2	0.0	31.1	2.7	75.6
COUT-C-1	206.4	98.3 (48%)	108.1 (52%)	▪ 7.1 miles parallel to transmission lines within 300 feet[1] ▪ 91.3 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 five times, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.3 miles parallel to pipelines within 300 feet ▪ 27.4 miles parallel to pipelines between 300 to 2,000 feet	98.2	11.0	0.0	28.9	2.7	65.6
COUT-C-2	207.9	98.3 (47%)	109.6 (53%)	▪ 7.1 miles parallel to transmission lines within 300 feet[1] ▪ 91.3 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 five times, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.3 miles parallel to pipelines within 300 feet ▪ 27.4 miles parallel to pipelines between 300 to 2,000 feet	95.4	10.6	0.0	31.7	2.7	67.5

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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-C-3 (Agency Preferred Alternative)	207.6	98.3 (47%)	109.3 (53%)	▪ 7.1 miles parallel to transmission lines within 300 feet[1] ▪ 91.3 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 five times, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.3 miles parallel to pipelines within 300 feet ▪ 27.4 miles parallel to pipelines between 300 to 2,000 feet	95.0	9.2	0.0	31.7	2.7	69.0
COUT-C-4	207.9	98.3 (47%)	109.6 (53%)	▪ 7.0 miles parallel to transmission lines within 300 feet[1] ▪ 91.3 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 five times, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.3 miles parallel to pipelines within 300 feet ▪ 27.4 miles parallel to pipelines between 300 to 2,000 feet	95.6	10.6	0.0	33.7	2.7	65.3
COUT-C-5	207.6	98.3 (47%)	109.3 (53%)	▪ 7.0 miles parallel to transmission lines within 300 feet[1] ▪ 91.3 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 five times, Mona to Huntington 345kV transmission line twice, Jerusalem to Nebo 138kV transmission line once, and Nebo to Martin Marietta 138kV transmission line once ▪ 2.3 miles parallel to pipelines within 300 feet ▪ 27.4 miles parallel to pipelines between 300 to 2,000 feet	95.2	9.2	0.0	33.7	2.7	66.8
Alternatives COUT-H and COUT-I										
COUT-H (Applicant Preferred Alternative)	200.6	62.5 (31%)	138.1 (69%)	▪ 4.3 miles parallel to transmission lines within 300 feet[1] ▪ 58.2 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 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. ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 36.5 miles parallel to pipelines between 300 to 2,000 feet	96.2	7.7	0.0	25.6	2.7	68.4

TABLE S-4
500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ALTERNATIVE ROUTE AND ROUTE VARIATION

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-I	240.2	89.8 (37%)	150.4 (63%)	▪ 2.3 miles parallel to transmission lines within 300 feet[1] ▪ 87.5 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. ▪ 2.5 miles parallel to pipelines within 300 feet ▪ 28.4 miles parallel to pipelines between 300 to 2,000 feet	123.1	16.9	0.0	36.0	2.7	61.5

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

TABLE S-5 SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT LINE AND SERIES COMPENSATION STATIONS						
Alternative Routes	**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)						
Alternative WYCO-B and Route Variations						
WYCO-B (Applicant Preferred Alternative)	2,342	995	3,337	350	108.1	96.4
WYCO-B-1	2,347	982	3,329	351	107.2	97.7
WYCO-B-2 (Agency Preferred Alternative)	2,341	984	3,325	341	110.6	93.9
WYCO-B-3	2,342	992	3,334	335	109.9	94.6
Alternative WYCO-C and Route Variations						
WYCO-C	2,410	999	3,409	336	124.2	86.2
WYCO-C-1	2,415	986	3,401	336	123.3	87.5
WYCO-C-2	2,409	989	3,398	326	126.7	83.7
WYCO-C-3	2,410	996	3,407	320	126.0	84.4
Alternative WYCO-D and Route Variation						
WYCO-D	2,862	1,132	3994	296	166.3	83.7
WYCO-D-1	2,862	1,140	4,002	281	168.1	81.9
Alternative WYCO-F and Route Variations						
WYCO-F	2,506	1,026	3,532	347	118.7	100.2
WYCO-F-1	2,511	1,013	3,525	347	117.8	101.5
WYCO-F-2	2,505	1,016	3,521	337	121.2	97.7
WYCO-F-3	2,507	1,023	3,530	331	120.5	98.4
Colorado to Utah – U.S. Highway 40 to Baxter Pass to Mona (COUT BAX)						
COUT BAX-B	3,194	1,616	4,810	2,273	158.5	120.7
COUT BAX-C	3,315	1,589	4,904	2,332	171.6	118.1
COUT BAX-E	3,361	1,428	4,789	2,244	180.1	111.4
Colorado to Utah – U.S. Highway 40 to Central Utah to Mona (COUT)						
Alternative COUT-A and Route Variation						
COUT-A	2,380	1,430	3,810	1,901	101.6	104.4
COUT-A-1	2,352	1,450	3,802	1,942	98.9	106.7
Alternative COUT-B and Route Variations						
COUT-B	2,498	1,453	3,951	2,166	116.2	99.8
COUT-B-1	2,465	1,451	3,916	2,287	116.2	96.5
COUT-B-2	2,481	1,458	3,939	2,321	118.2	96.0
COUT-B-3	2,476	1,455	3,931	2,393	115.9	98.0
COUT-B-4	2,480	1,455	3,935	2,328	117.9	96.3
COUT-B-5	2,452	1,572	4,024	2,386	116.2	97.7

TABLE S-5
SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT LINE AND SERIES COMPENSATION STATIONS

Alternative Routes	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]
Alternative COUT-C and Route Variations						
COUT-C	2,401	1,620	4,021	2,235	118.0	91.8
COUT-C-1	2,371	1,619	3,990	2,385	120.5	85.9
COUT-C-2	2,387	1,622	4,009	2,419	122.5	85.9
COUT-C-3 (Agency Preferred Alternative)	2,383	1,657	4,040	2,484	120.5	87.1
COUT-C-4	2,383	1,660	4,043	2,395	117.4	90.5
COUT-C-5	2,379	1,529	3,908	2,460	115.4	92.2
Alternatives COUT-H and COUT-I						
COUT-H (Applicant Preferred Alternative)	2,294	1,402	3,696	2,088	121.3	79.3
COUT-I	2,748	1,611	4,359	2,151	138.7	101.5

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) (60 by 60 feet per structure), communication regeneration stations (100 by 100 feet, one station approximately every 55 miles), series compensation stations, and permanent access roads (refer to Tables 2-1 and 2-2).

[3] Right-of-way Vegetation Clearing: vegetation clearing has been estimated within 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 within 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 and, therefore, columns 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.