Appendix F
Alternative Route Variations

APPENDIX F – ALTERNATIVE ROUTE VARIATIONS

F.1 Introduction

In the Draft Environmental Impact Statement (EIS), several of the alternative routes exhibited one or more route variations to compare shorter, local segments of routing options along the alternative routes. Based on comments received on the Draft EIS, including requests for analysis of additional local route variations along the route of Alternative WYCO-B and Alternative COUT-C (the Agency Preferred Alternative routes in the northern and southern segments, respectively), the added complexity of the routes necessitated a different presentation in the Final EIS. Therefore, the Final EIS has been restructured from the Draft EIS to focus on complete alternative routes in the body of the Final EIS and focus on the local route variations in this appendix. Chapter 2 explains and describes the comparison of the complete alternative routes, Chapters 3 and 4 describe the affected environment and environmental consequences associated with the complete alternative routes. The local route variations along the route of Alternative WYCO-B and Alternative COUT-C (the Agency Preferred Alternative routes in the northern and southern segments, respectively) are the focus of this appendix, which documents the analysis and comparison of the route variations. The methodology for comparing and analyzing the local route variations is the same as described in Chapters 2, 3, and 4.

All of the alternative route variations are displayed along their respective alternative routes on Map F-1 (Alternative Route Variation Overview). This appendix has been organized into seven sections by the following alternative route variation areas:

- Little Snake River crossing
- Deerlodge Road Area (entrance to Dinosaur National Monument)
- Colorado-Utah border area
- Argyle Ridge
- Camp Timberlane/Argyle Canyon
- Spanish Fork Canyon/U.S. Highway 6
- Chipman Creek area, Uinta National Forest

Each area of alternative route variation includes a narrative describing the background and rationale for analyzing the variation; a geographic description; a summary of critical resource issues; a map displaying the alternative route and variation(s); a summary table describing the substantive issues for each resource on the alternative route and variation(s); and tables, by resource, describing the inventory, impacts, and plan compliance with the same type of information as presented in Chapters 3 and 4. Note that grazing allotment information for the alternative route variations is presented in Appendix L.

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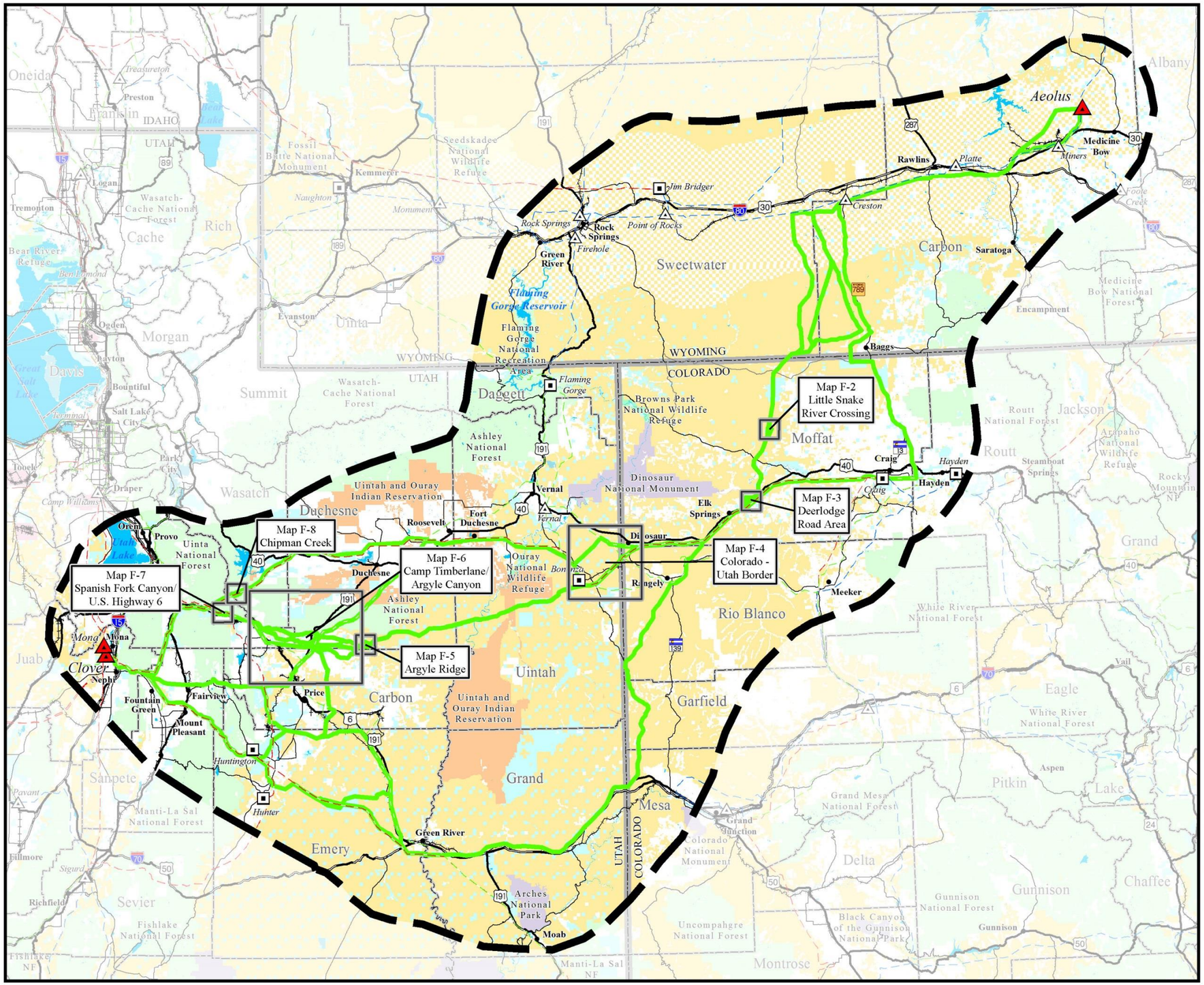
Map F-1
Route Variation Overview
ENERGY GATEWAY SOUTH TRANSMISSION PROJECT
Alternative Route
Alternative Route
Project Features
Project Area Boundary
Substation (Project Terminal)
Land Ownership
Bureau of Land Management
Bureau of Reclamation
Indian Reservation
National Park Service
U.S. Department of Defense
U.S. Fish and Wildlife Service
U.S. Forest Service
State Land
Private Land
General Reference
Map
City or Town
Substation
Power Plant
500kV Transmission Line
345kV Transmission Line
230kV Transmission Line
138kV Transmission Line
Railroad
Interstate Highway
U.S. Highway
State Highway
Other Road
Lake or Reservoir
State Boundary
County Boundary
SOURCES:
Land Jurisdiction, BLM 2013; City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013
NOTES:
• The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.
• Substation symbols do not necessarily represent precise locations.
Alternative routes last revised: September 23, 2014
FINAL EIS: September 2015
0 10 20 40 60
Miles
Map F-2 Little Snake River Crossing
Map F-3 Deerlodge Road Area
Map F-4 Colorado - Utah Border
Map F-5 Argyle Ridge
Map F-6 Camp Timberlane/ Argyle Canyon
Map F-7 Spanish Fork Canyon/ U.S. Highway 6
Map F-8 Chipman Creek
Aeolus
Medicine Bow
Miners
Rawlins
Platte
Creston
Jim Bridger
Rock Springs
Point of Rocks
Firehole
Green River
Flaming Gorge Reservoir
Flaming Gorge National Recreation Area
Flaming Gorge
Baggs
Craig
Hayden
Elk Springs
Vernal
Roosevelt
Fort Duchesne
Duchesne
Dinosaur
Bonanza
Rangely
Meeker
Price
Fairview
Mount Pleasant
Fountain Green
Nephi
Mona
Clover
Huntington
Hunter
Green River
Moab
Grand Junction
Aspen
Encampment
Saratoga
Kemmerer
Evanston
Preston
Logan
Ogden
Salt Lake City
Provo
Orem
Park City
Draper
Tooele
Richfield
Gillmore
Pavant
Sigurd
Fillmore
Tremonton
Bear Lake
Ben Lomond
Treasureton
Naughton
Monument
Oneida
Franklin
Cache
Rich
Morgan
Davis
Summit
Wasatch
Uinta
Daggett
Ashley National Forest
Sweetwater
Carbon
Moffat
Routt
Jackson
Grand
Duchesne
Uintah
Rio Blanco
Garfield
Mesa
Delta
Gunnison
Chaffee
Eagle
Pitkin
Lake
Sanpete
Sevier
Emery
Juab
Utah
Wasatch
Summit
Morgan
Rich
Cache
Uinta
Albany
Carbon
Sweetwater
Uintah
Grand
Emery
Sevier
Sanpete
Juab
Utah
Wasatch
Davis
Duchesne
Carbon
Garfield
Mesa
Delta
Gunnison
Montrose
Chaffee
Eagle
Pitkin
Lake
Grand
Rio Blanco
Moffat
Routt
Jackson
Carbon
Albany
IDAHO
UTAH
WYOMING
COLORADO
Fossil Butte National Monument
Seedskadee National Wildlife Refuge
Bear River Refuge
Great Salt Lake
Wasatch-Cache National Forest
Uinta National Forest
Ashley National Forest
Browns Park National Wildlife Refuge
Dinosaur National Monument
Uintah and Ouray Indian Reservation
Ouray National Wildlife Refuge
Arches National Park
Colorado National Monument
Manti-La Sal National Forest
Fishlake National Forest
Uncompahgre National Forest
Gunnison National Forest
Black Canyon of the Gunnison National Park
Grand Mesa National Forest
White River National Forest
Medicine Bow National Forest
Routt National Forest
Steamboat Springs
Arapaho National Wildlife Refuge
Rocky Mountain NP
Camp Williams
Foote Creek
Terminal
Vail

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Little Snake Crossing

F.2 Little Snake River Crossing

This variation area is located approximately 15 miles northwest of Maybell, Colorado, at the crossing of the Little Snake River east of Sevenmile Ridge (Map F-2). Route variations at the crossing of the Little Snake River were included in the Draft EIS as part of three alternative routes (Alternatives WYCO-B, WYCO-C, and WYCO-F). The route variation at the Little Snake River crossing (Link C72) was included to provide an option to take advantage of less rugged terrain and to provide greater separation from a private land use along the southern portion of Link C71.

Most of the lands crossed by the route of Alternative WYCO-B (the Agency Preferred Alternative) route (C71) and the Variation 1 (C72) are administered by the Bureau of Land Management (BLM) except for the privately owned lands adjacent to the river and at the southern end of Link C71. Primary resource issues in this area include greater sage-grouse habitat, Ute ladies'-tresses modeled habitat, potential yellow-billed cuckoo habitat, views from a residence near the Little Snake River, and Lower Little Snake and Deep Creek Lands with Wilderness Characteristics.

Table F-1 presents a comparison of substantive resource issues for each route variation. Table F-2 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-3 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-4 to F-11 describe the inventory, impacts, and plan compliance for each resource in a comparison of route variations.

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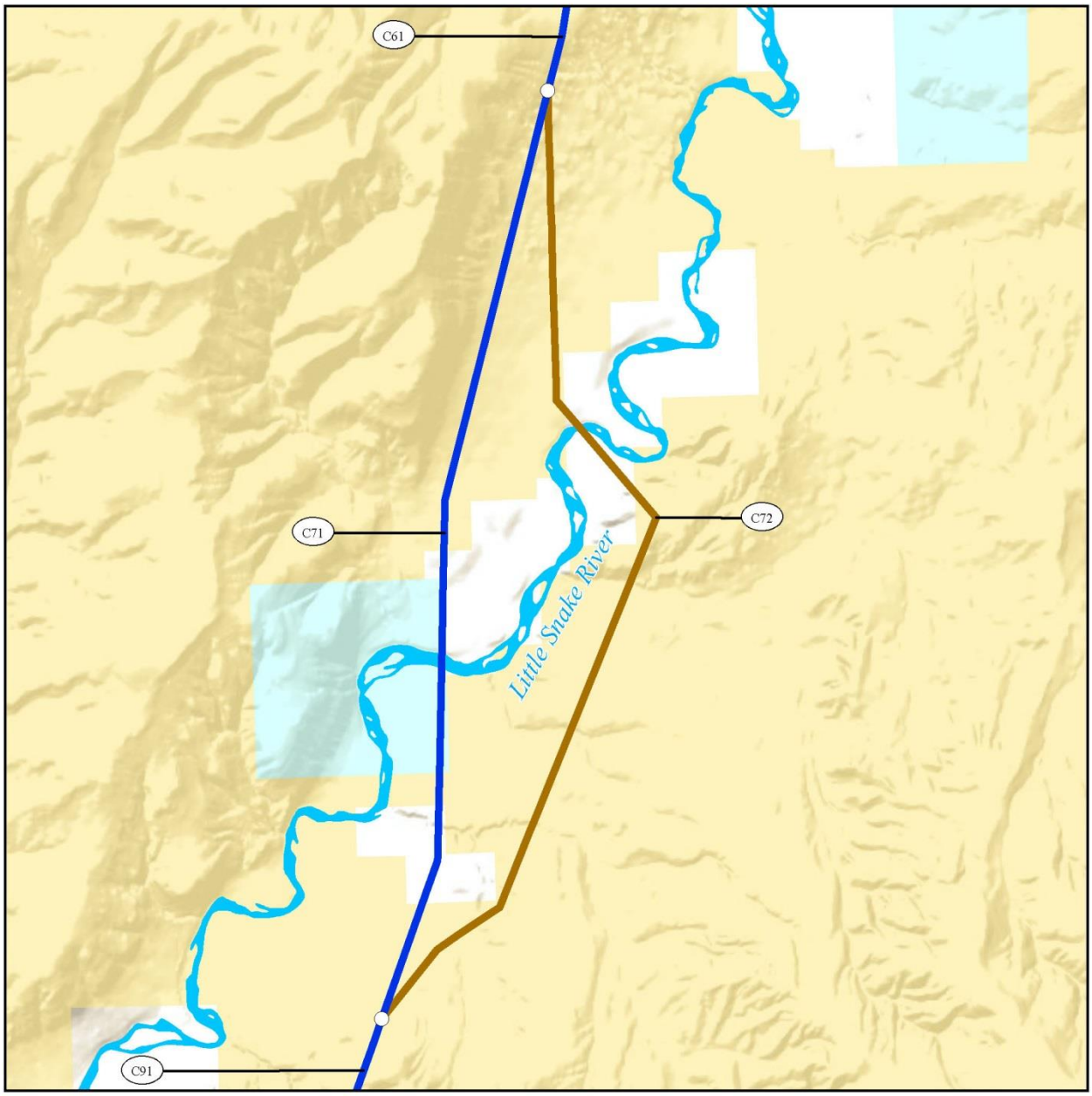

Map F-2

Little Snake River Crossing

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative WYCO-B
- Variation 1
- Link Number
- Link Node

Land Ownership

- Bureau of Land Management
- State Land
- Private Land

General Reference

- Little Snake River

SOURCES:
Land Jurisdiction, BLM 2013;
National Hydrography Dataset, USGS 2010

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.

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

0 0.5 1
Miles

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TABLE F-1 LITTLE SNAKE – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative WYCO-B Link C71(4.9 miles)**	**Variation 1 Link C72 (5.4 miles)**
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.1 for this alternative route.	Same as WYCO-B
Earth Resources (miles crossed) (for detailed information, refer to Table F-4)	▪ 0.1 mile of moderate landslide hazard ▪ 0.6 mile of oil and gas leases ▪ 2.2 miles of prime farmland	▪ 1.4 miles of moderate landslide hazard ▪ 2.7 miles of oil and gas leases ▪ 1.2 miles of prime farmland ▪ 0.2 miles of moderate susceptibility to wind and water erosion
Paleontological Resources (for detailed information, refer to Table F-5)	Crosses 3.1 miles of Potential Fossil Yield Classification (PFYC) 3	Crosses 4.0 miles of PFYC 3
Water Resources (for detailed information, refer to Table F-6)	Impacts on Little Snake River and associated habitats	Same as WYCO-B
Biological Resources		
Vegetation (for detailed information, refer to Table F-7)	No critical issues	No critical issues
Special Status Plants (for detailed information, refer to Table F-7)	Potential impacts on Ute Ladies'-tresses potential habitat at Little Snake River crossing	Same as WYCO-B
Wildlife (for detailed information, refer to Table F-7)	No critical issues	No critical issues
Special Status Wildlife (for detailed information, refer to Table F-7)	Crosses 0.3 mile of high impact on greater sage-grouse habitats within 4 miles of leks	Crosses 0.5 mile of high impacts on greater sage-grouse habitats within 4 miles of leks and sage-grouse priority habitat
Migratory Birds (for detailed information, refer to Table F-7)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.9 for this alternative route.	Same as WYCO-B
Fish and Aquatics (for detailed information, refer to Table F-7)	None	None

TABLE F-1 LITTLE SNAKE – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative WYCO-B Link C71(4.9 miles)**	**Variation 1 Link C72 (5.4 miles)**
Land Use		
Land Use (for detailed information, refer to Table F-8)	Crosses 0.1 mile of pivot agriculture resulting in a moderate impact.	None
Parks, Preservation, and Recreation (for detailed information, refer to Table F-9)	None	None
Transportation and Access (for detailed information, refer to Table F-9)	None	None
Congressional Designations (for detailed information, refer to Table F-9)	None	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-9)	None	None
Lands with Wilderness Characteristics (for detailed information, refer to Table F-9)	Crosses 1.0 mile of Deep Canyon and Lower Little Snake inventoried lands with wilderness characteristics in the Little Snake Field Office.	Crosses 3.2 miles of Deep Canyon and Lower Little Snake inventoried lands with wilderness characteristics in the Little Snake Field Office
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-9)	None	None
Visual Resources (for detailed information refer to Table F-10	▪ High impact on views from residences adjacent to the Little Snake River ▪ Moderate impact on views from the Little Snake River and an adjacent destination route	Similar to WYCO-B except moderate impact on views from residence adjacent to the Little Snake River
Cultural Resources (for detailed information, refer to Table F-11)	▪ 11 sites identified by the Class I inventory; no known sites in the Project area of potential effect (APE) ▪ Crosses 0.0 mile of high cultural resource intensity ▪ No key cultural resources have been identified	▪ 13 sites identified by the Class I inventory; one known site in the Project APE ▪ Crosses 0.2 mile of high cultural resource intensity ▪ No key cultural resources have been identified
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.21 for this alternative route.	Same as WYCO-B

TABLE F-1 LITTLE SNAKE – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative WYCO-B Link C71(4.9 miles)**	**Variation 1 Link C72 (5.4 miles)**
Social and Economic Conditions	Effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.22 for this alternative route.	Same as WYCO-B
Public Health (electric and magnetic fields [EMF])	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.23 for this alternative route.	Same as WYCO-B

TABLE F-2 LITTLE SNAKE RIVER CROSSING – 500-KILOVOLT (kV) TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION		
Focus of Comparison	**Alternative WYCO-B Link C71 (4.9 miles)**	**Variation 1 Link C72 (5.4 miles)**
Jurisdiction (miles crossed)		
BLM	3.3	4.8
U.S. Forest Service (USFS)	0.0	0.0
National Park Service (NPS)	0.0	0.0
State	0.9	0.0
Tribal	0.0	0.0
Private	0.7	0.6

TABLE F-3 LITTLE SNAKE RIVER CROSSING – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS		
Focus of Comparison	**Alternative WYCO-B Link C71 (4.9 miles)**	**Variation 1 Link C72 (5.4 miles)**
Temporary disturbance (acres)[1, 4]	54	60
Permanent disturbance (acres)[2, 4]	17	22
Total disturbance (acres)	72	82
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	10	3
Access Roads		
Existing (miles)[5]	2.1	1.1
New (miles)[6]	2.8	4.3

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 to 5 miles), wire splicing sites (100 by 100 feet every 9,000 feet), multi-purpose 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 in the transmission line right-of-way only. Calculations only include vegetation types with the potential to grow more than 5 feet tall (aspen, mountain forest, mountain shrub, pinyon-juniper, and riparian), and overlap with other disturbance in the Project right-of-way. Vegetation clearing was not calculated for access roads due to the access road design not being available for the alternative routes and route variations at this time and is required to accurately identify locations of temporary and permanent access roads. Temporary and permanent disturbance calculations include estimated disturbance for all access roads.

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

TABLE F-4 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Geologic Hazards		
Affected environment (miles crossed)	▪ 0.0 mile of mine subsidence ▪ 4.9 miles of low flood hazard ▪ 0.1 mile of moderate and 4.8 miles of low landslide hazard	▪ 0.0 mile of mine subsidence ▪ 5.4 miles of low flood hazard ▪ 5.4 miles of low landslide hazard
Environmental consequences	Low impacts from geologic hazards	Same as WYCO-B
Selective mitigation	3	None
Cumulative effects	The crossing would be in proximity to the TransWest Express transmission line	Same as WYCO-B
Soil Resources		
Affected environment (miles crossed)	▪ 0.1 miles of no and 4.8 miles of low water erosion ▪ 4.9 miles of low wind erosion ▪ 2.2 miles of prime farmland	▪ 5.2 miles of low and 0.2 miles of moderate water erosion ▪ 5.2 miles of low and 0.2 miles of moderate wind erosion ▪ 1.2 miles of prime farmland
Environmental consequences	Would affect more prime farmland	Would have more potential for wind and water erosion on soils
Selective mitigation	1, 3, 7, and 13	1, 3, 7, and 13
Cumulative effects	The crossing would in proximity to the TransWest Express transmission line. The Project would have minor incremental impact on farmlands.	Same as WYCO-B
Mineral Resources		
Affected environment (miles crossed)	▪ 0 active mines ▪ 0.6 mile of oil and gas leases	▪ 0 active mines ▪ 2.7 miles of oil and gas leases
Environmental consequences	Would affect less area of oil and gas leases	Would affect more oil and gas leases
Selective mitigation	None	None
Cumulative effects	The crossing would be in proximity to the TransWest Express transmission line. Project could have minor incremental impact on oil and gas leases	Same as WYCO-B
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-5 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Affected Environment		
PFYC (miles crossed)	3.1 miles of PFYC 3	4.0 miles of PFYC 3
Known locality density within 1.0 mile of the	4.9 miles	5.4 miles

TABLE F-5 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
centerline (miles crossed)		
Environmental Consequences		
PFYC formations (miles crossed)	Would affect fewer geological formations with PFYC 3	Would affect more geological formations with PFYC 3
Percent of route crossing PFYC 3	63	74
Anticipated impacts on paleontological resources	Moderate impacts on paleontological resources	Same as WYCO-B
Selective mitigation	None	None
Cumulative effects	The crossing would be in proximity to the TransWest Express transmission line. The Project could have minor incremental impact paleontological resources.	Same as WYCO-B
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-6 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Affected Environment		
Class 1: Outstanding waters	None	None
Class 4: State-listed impaired waters	None	None
Palustrine emergent wetlands	None	None
Palustrine forested overstory wetlands	None	None
Palustrine scrub/shrub wetlands	None	None
Perennial stream/river	1 crossing of the Little Snake River	1 crossing of the Little Snake River
Intermittent stream	2 crossings	4 crossings
Riparian areas	2 crossings of small riparian areas associated with the Little Snake River	None identified based on data available for the EIS analysis, but likely to be similar to WYCO-B
Swamp/marsh/estuary	None	None
Well/spring	None	None
Environmental Consequences		
Residual impacts	▪ 0.2 mile of moderate residual impacts ▪ 0.7 mile of low residual impacts	Similar to WYCO-B
Selective mitigation	None	None

TABLE F-6 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Cumulative effects	▪ Vicinity of the proposed TransWest Express transmission line and existing agricultural and residential developments ▪ Minor incremental impact on water resources in the area	Similar to WYCO-B
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-7 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Vegetation		
Affected environment (miles of vegetation communities crossed)	▪ 2.2 miles of big sagebrush ▪ 0.1 mile of riparian ▪ 2.5 miles of shrub/shrub steppe ▪ 0.1 mile of water	▪ 0.1 mile of barren ▪ 3.7 miles of big sagebrush ▪ 1.5 miles of shrub/shrub steppe ▪ 0.1 mile of water
Environmental consequences (miles crossed)	▪ 0.1 mile of moderate-to-high impacts ▪ 2.3 miles of moderate impacts ▪ 2.5 miles of low-to-moderate impacts	▪ 3.9 miles of moderate impacts ▪ 1.5 miles of low-to-moderate impacts
Selective mitigation	1, 2, 4, and 7	1, 2, 4, and 7
Cumulative effects	▪ Vicinity of the proposed TransWest Express transmission line and existing agricultural and residential developments ▪ Minor incremental impact on water resources in the area	▪ Similar to WYCO-B
Special Status Plants		
Affected environment (miles crossed)	0.1 mile of Ute ladies'-tresses potential habitat	No identifiable special status plant habitat crossed; however, Ute ladies'-tresses potential habitat likely to be present in the area
Environmental consequences (miles crossed)	0.1 mile of low impacts	None
Selective mitigation	2 and 7	None
Cumulative effects	▪ Vicinity of the proposed TransWest Express transmission line and existing agricultural and residential developments ▪ Minor incremental impact on Ute ladies'-tresses potential habitat in the area	None

TABLE F-7 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Wildlife		
Affected environment (miles crossed)	▪ 4.3 miles of elk crucial winter range ▪ 3.1 miles of mule deer crucial winter range ▪ 3.8 miles of pronghorn severe winter range	▪ 5.0 miles of elk crucial winter range ▪ 1.9 miles of mule deer crucial winter range ▪ 5.1 miles of pronghorn severe winter range
Environmental consequences (miles crossed)	4.9 miles of low impacts	5.4 miles of low impacts
Selective mitigation	12 and 15	12 and 15
Cumulative effects	▪ Vicinity of the proposed TransWest Express transmission line and existing agricultural and residential developments ▪ Minor incremental impact on big game in the area	Similar to WYCO-B
Special Status Wildlife		
Affected environment (miles crossed)	▪ 1.3 miles of mountain plover potential habitat ▪ 2.2 miles of pygmy rabbit potential habitat ▪ 3.3 miles of white-tailed prairie dog potential colonies ▪ 0.3 mile of greater sage-grouse habitat within 4 miles of leks in priority habitat ▪ 4.9 miles of greater sage-grouse general habitat ▪ No yellow billed cuckoo potential habitat identified based on data used in EIS analysis, but likely similar to Variation 1	▪ 1.3 miles of mountain plover potential habitat ▪ 3.3 miles of pygmy rabbit potential habitat ▪ 1.3 miles of white-tailed prairie dog potential colonies ▪ 0.1 mile of yellow-billed cuckoo potential habitat ▪ 0.5 mile of greater sage-grouse habitat within 4 miles of leks in priority habitat ▪ 5.3 miles of greater sage-grouse general habitat ▪ 0.1 mile of greater sage-grouse priority habitat
Environmental consequences (miles crossed)	▪ 0.3 mile of high impacts ▪ 4.0 miles of moderate impacts ▪ 0.6 mile of low impacts	▪ 0.5 mile of high impacts ▪ 4.3 miles of moderate impacts ▪ 0.6 mile of low impacts
Selective mitigation	2, 5, 7, 12, and 13	2, 4, 5, 7, 12, and 13
Cumulative effects	▪ Vicinity of the proposed TransWest Express transmission line and existing agricultural and residential developments ▪ Minor incremental impacts on special status wildlife in the areas where these species are present.	Similar to WYCO-B

TABLE F-7 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Fish and Aquatics		
Affected environment	▪ Crosses the Little Snake River, which provides habitat for fish and other aquatic resources ▪ No specific resources analyzed in detail in the EIS identified in this area	Similar to WYCO-B
Environmental consequences	Using the comparison method of the EIS, no residual impacts were identified	Similar to WYCO-B.
Selective mitigation	None	None
Cumulative effects	▪ Vicinity of the proposed TransWest Express transmission line and existing agricultural and residential developments ▪ Minor incremental impact on fish and aquatic habitats in the Little Snake River	Similar to WYCO-B
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-8 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Utility Corridors (miles)		
Designated (BLM and USFS)	0.0	0.0
West-wide Energy Corridor	0.0	0.0
Parallel Linear Facilities (miles)		
500kV	0.0	0.0
345kV	0.0	0.0
138kV	0.0	0.0
230kV	0.0	0.0
Pipeline	0.0	0.0
Existing Land Use		
Affected environment and consequences	Crosses 0.1 mile of center-pivot agriculture resulting in a moderate residual impact	No key impacts
Selective mitigation	11	None
Cumulative effects	▪ Short-term: the potential for limited access to fields or agriculture operations during construction ▪ Long-term: utility and industrial infrastructure potentially reducing the amount of and/or altering agriculture production lands.	None

TABLE F-8 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Authorized Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Future Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Zoning and General Plan Management Direction[1]		
Generalized permitting	No key permitting requirements	No key permitting requirements
Selective mitigation	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No
NOTE: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.		

TABLE F-9 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4)**
Parks, Preservation, and Recreation		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Transportation and Access		
Affected environment	Crosses Moffat County Roads 26 and 21 and other roadways	Crosses Moffat County Roads 26 and 21
Environmental consequences	Anticipate moderate impacts where temporary closures and/or delays would occur from construction of the Project when crossing roadways (e.g. Moffat County Road 21). See Section 3.2.13 for more information.	Same as WYCO-B
Selective mitigation	5 and 9	5 and 9
Cumulative effects	Not applicable	Not applicable
Congressional Designations		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None

TABLE F-9 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4)**
Special Designations and Other Management Areas		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Lands with Wilderness Characteristics		
Affected environment and consequences	Crosses 1.0 mile of Deep Canyon and Lower Little Snake inventoried lands with wilderness characteristics in the Little Snake Field Office	Crosses 3.2 miles of Deep Canyon and Lower Little Snake inventoried lands with wilderness characteristics in the Little Snake Field Office
Selective mitigation	None	None
Cumulative effects	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas		
Affected environment and consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-10 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Affected Environment		
Scenery (miles crossed)	▪ 4.9 miles of Class B	▪ 5.0 miles of Class B ▪ 0.4 mile of Class C
High concern viewers (miles crossed)	▪ 1.0 mile of views within 0.5 mile ▪ 0.9 mile of views between 0.5 mile and 1.0 mile	▪ 0.0 mile of views within 0.5 mile ▪ 1.7 miles of views between 0.5 mile and 1.0 mile
Moderate concern viewers (miles crossed)	▪ 2.7 miles of views within 0.5 mile ▪ 2.2 miles of views between 0.5 mile and 1.0 mile	▪ 3.5 miles of views within 0.5 mile ▪ 1.9 miles of views between 0.5 miles and 1.0 mile
Federal Agency Visual Management Objectives (miles crossed)	▪ 3.2 miles of BLM VRM Class III	▪ 4.9 miles of BLM VRM Class III

TABLE F-10 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Environmental Consequences		
Scenery	No key impacts	No key impacts
Residences	High impact on views from residence adjacent to the Little Snake River	Moderate impact on views from residence adjacent to the Little Snake River
Travel routes	Moderate impact on views from Little Snake River destination route	Similar to WYCO-B
Recreation areas	Moderate impact on views from Little Snake River	Similar to WYCO-B
Special designations	No key impacts	No key impacts
Selective mitigation	2	2, 3, and 5
Cumulative effects	Introduction of the Project in context with the TransWest Express transmission line would increase impacts on scenery and views described above.	Similar to WYCO-B
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-11 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Affected environment	▪ 11 sites identified by the Class I inventory ▪ No known sites in the Project APE ▪ No key cultural resources, National Historic Trails (NHTs) or potential NHTs, National Historic Landmarks (NHLs), traditional cultural properties (TCPs), or areas of critical environmental concern (ACECs) with cultural components were identified	▪ 13 sites identified by the Class I inventory ▪ One known site in the Project APE ▪ No key cultural resources, NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified
Environmental consequences (miles crossed)	▪ 0.0 mile of high cultural resource intensity ▪ 0.2 mile of moderate cultural resource intensity ▪ 4.7 miles of low cultural resource intensity	▪ 0.2 mile of high cultural resource intensity ▪ 0.0 mile of moderate cultural resource intensity ▪ 5.2 miles of low cultural resource intensity
Selective mitigation	Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant, and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies.	Same as WYCO-B

TABLE F-11 LITTLE SNAKE RIVER CROSSING – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	**Alternative WYCO-B Links C71 (4.9 miles)**	**Variation 1 Links C72 (5.4 miles)**
Cumulative effects	The addition of the Project to past and present actions and Reasonably Foreseeable Future Actions (RFFAs) would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources.	Same as WYCO-B
Plan Compliance		
Plan amendment (Yes or No)	No	No

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Deerlodge Road Area

F.3 Deerlodge Road Area

This variation area is located 15 miles southwest of Maybell, Colorado, roughly parallel to the U.S. Highway 40 (Map F-3). The Draft EIS presented two route options (Map F-3). One route option, the route of Alternative WYCO-B (the Agency Preferred Alternative; Links C171, C173, C174) parallels existing 138kV and 345kV transmission lines. However, this option crosses the Tuttle Ranch Conservation Easement (designated as such in October 2013) and Cross Mountain Ranch Conservation Easement (designated as such in December 2014), the Agreements for which excludes new overhead transmission lines crossing the conservation easements. The other route option, Variation 1 (Links C94, C93) was developed to skirt the western boundary of the Tuttle Ranch Conservation Easement and roughly parallels U.S. Highway 40, rejoining the route of Alternative WYCO-B southwest of the easement. This route variation crosses the Deerlodge Road entrance to Dinosaur National Monument at the intersection with U.S. Highway 40. Most of Deerlodge Road is owned in fee by the NPS, except for a parcel of land administered by the State of Colorado north of the intersection of Deerlodge Road and U.S. Highway 40. Because of NPS' mandate to identify and analyze viable alternatives in cases where NPS-administered land may be impaired, the NPS requested consideration of an additional route variation that crosses the Deerlodge Road on the State of Colorado parcel. In response, Variation 2 (Links C94, C95) was developed and analyzed between the Draft EIS and Final EIS.

The three route variations analyzed in the Final EIS start on the north side of U.S. Highway 40 and end 6.5 to 7.7 miles to the southwest on the south side of U.S. Highway 40. Refer to Map F-3. The route of Alternative WYCO-B, the Agency Preferred Alternative, immediately crosses U.S. Highway 40, runs south for 0.8 miles, and then follows an existing transmission line corridor through the Tuttle Ranch Conservation Easement for 3.0 miles and Cross Mountain Ranch Conservation Easement for 1.1 miles. Variation 1 parallels the north side of U.S. Highway 40 for 3.8 miles, crosses Deerlodge Road in an area under NPS jurisdiction, continues north of U.S. Highway 40 for 1.9 miles, crosses U.S. Highway 40, and terminates at an existing transmission line corridor after an additional 0.8 miles. Variation 2 parallels the north side of U.S. Highway 40 for 2 miles, turns west for 2 miles, crosses Deerlodge Road on lands administered by the State of Colorado, then turns south, crosses U.S. Highway 40, and ends at an existing transmission line corridor after 3.7 miles.

In the event Variation 1 crossing Deerlodge Road on NPS-administered land were selected as the route for construction of the transmission line, the NPS would have to process an application for right-of-way, which would have to include environmental analysis. Therefore, the NPS asked for a more detailed analysis and comparison of the three variations in this area. The analysis and comparison is presented in Appendix G.

The lands crossed by the route of Alternative WYCO-B (the Agency Preferred Alternative) and route variations are mostly privately owned except for parcels of BLM, state, and NPS-administered lands adjacent to Deerlodge Road. Primary resource issues in this area include visual resource and recreation impacts on Dinosaur National Monument, crossing the Tuttle Ranch Conservation Easement and Cross Mountain Lower Ranch Conservation Easement, and lands with wilderness characteristics.

Table F-12 is a comparison of substantive resource issues for each route variation. Table F-13 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-14 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-15 to F-22 describe the inventory, impacts, and plan compliance for each resource in a side-by-side comparison of route variations.

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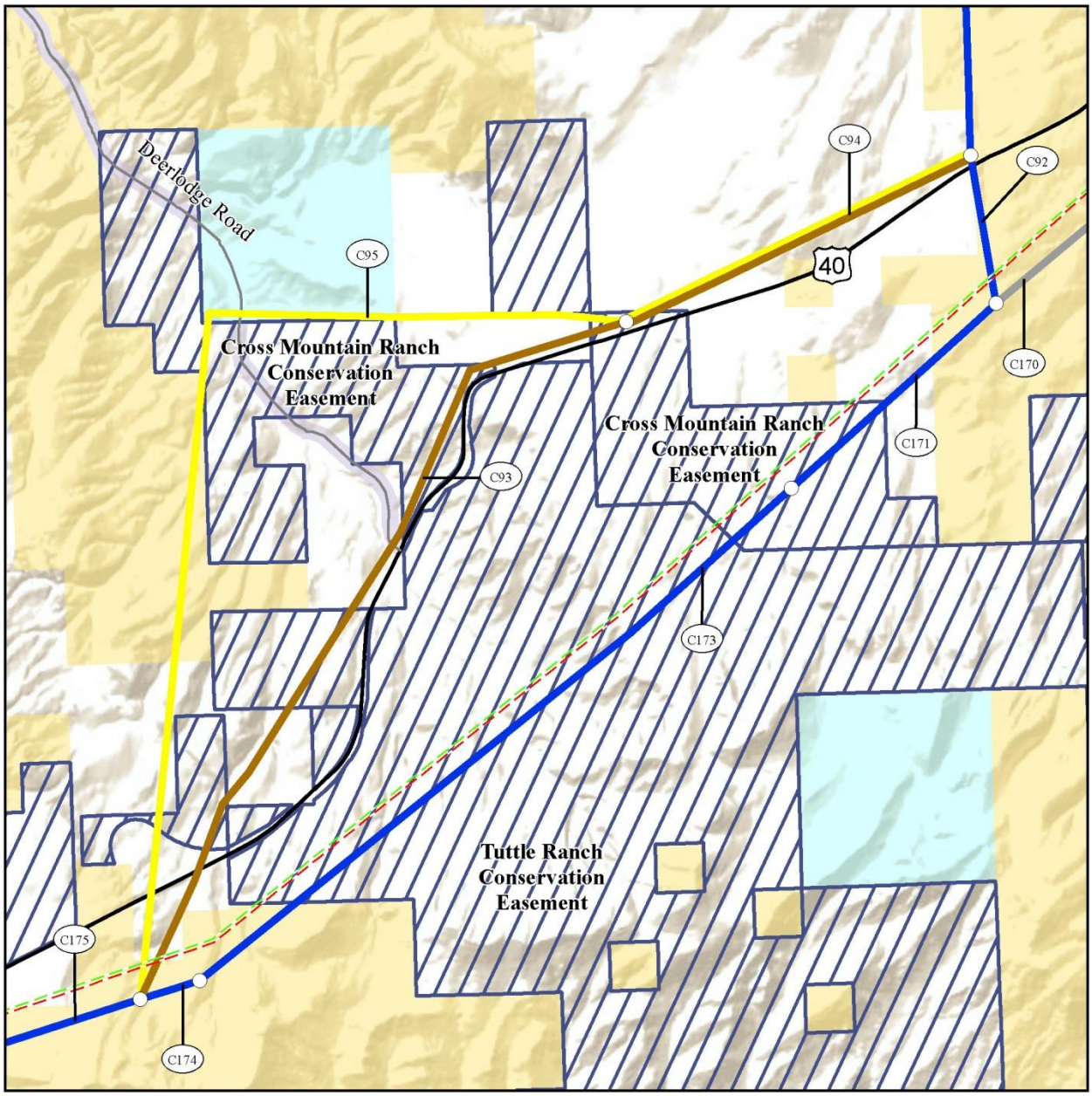

Map F-3

Deerlodge Road Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative WYCO-B
- Variation 1
- Variation 2
- All Other Alternative Routes
- Link Number
- Link Node

Land Ownership

- Bureau of Land Management
- National Park Service
- State Land
- Private Land

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- U.S. Highway
- Other Road
- Conservation Easement

SOURCES:
Land Jurisdiction, BLM 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009; Highways and Roads ESRI 2013; Conservation Easements, BLM 2015, CPW 2013

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Alternative routes are graphically depicted on map and, in most cases, share centerline alignment in common areas.

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

0 0.5 1
Miles

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TABLE F-12 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS BY RESOURCE			
Resource	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.1 for this alternative route.	Same as WYCO-B	Same as WYCO-B
Earth Resources (miles crossed) (for detailed information, refer to Table F-15)	▪ 5.5 miles of low flood hazard ▪ 1.0 mile of moderate landslide hazard ▪ 5.5 miles of low landslide hazard ▪ 2.4 miles of oil and gas leases ▪ 0.2 mile of prime farmland ▪ 0.6 mile of soils with moderate susceptibility to wind and water erosion	▪ 6.5 miles of low flood hazard ▪ 0.4 mile of moderate landslide hazard ▪ 6.1 miles of low landslide hazard ▪ 2.0 miles of oil and gas leases ▪ 0.0 mile of prime farmland	▪ 7.7 miles of low flood hazard ▪ 0.4 mile of moderate landslide hazard ▪ 7.3 miles of low landslide hazard ▪ 2.8 miles of oil and gas leases ▪ 0.6 mile of prime farmland ▪ 0.5 mile of soils with moderate susceptibility to wind and water erosion
Paleontological Resources (miles crossed) (for detailed information, refer to Table F-16)	▪ 0.4 mile of PFYC 3 ▪ 6.1 miles of PFYC 5	▪ 6.5 miles of PFYC 5	▪ 0.7 mile of PFYC 3 ▪ 7.0 miles of PFYC 5
Water Resources (for detailed information, refer to Table F-17)	No critical issues. However, the impacts on water resources would be reduced by colocation with existing linear infrastructure.	No critical issue.	No critical issues
Biological Resources			
Vegetation (for detailed information, refer to Table F-18)	No critical issues. However the impacts on vegetation resources would be reduced by colocation with existing linear infrastructure.	No critical issues	No critical issues
Special Status Plants (for detailed information, refer to Table F-18)	None	None	None

TABLE F-12 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS BY RESOURCE			
Resource	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Wildlife (for detailed information, refer to Table F-18)	Alternative WYCO-B would affect important big game habitats recognized by Colorado Parks and Wildlife (CPW) on the Tuttle Ranch Conservation Easement. Colocation with existing transmission lines would reduce these effects. However, the Project would extend anthropogenic disturbances further into these important habitats.	Variation 1 would avoid important big game habitats recognized by CPW on the Tuttle Ranch Conservation Easement. Variation 1 would be located near U.S. Highway 40, where big game habitats and behavior have likely already been affected by the highway.	Variation 2 would avoid important big game habitats recognized by CPW on the Tuttle Ranch Conservation Easement. However, Variation 2 would be located in an area with few existing anthropogenic disturbances.
Special Status Wildlife (for detailed information, refer to Table F-18)	Alternative WYCO-B would affect high-quality sage-grouse nesting and brood-rearing habitat as well as white-tailed prairie dog colonies that are a potential preferred location for the future release of black-footed ferrets. Although the density of sage-grouse on the Tuttle Ranch Conservation Easement property is relatively low compared to other portions of the Northwest Colorado population, the area provides connectivity between key areas of priority habitat from the Axial Basin to the Blue Mountain area (east to west). Colocation with existing transmission lines would help reduce these effects.	Variation 1 would avoid important sage-grouse and white-tailed prairie dog habitats recognized by CPW on the Tuttle Ranch Conservation Easement. However, sage-grouse priority habitats would still be impacted by this variation. Variation 1 would be located near U.S. Highway 40, where special status wildlife habitats and behavior have likely already been affected by the highway.	Variation 2 would avoid important sage-grouse and white-tailed prairie dog habitats recognized by CPW on the Tuttle Ranch Conservation Easement. However, sage-grouse priority habitats would still be affected by this variation. Variation 2 would be located in an area with few existing anthropogenic disturbances.
Migratory Birds (for detailed information, refer to Table F-18)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.9 for this alternative route.	Same as WYCO-B	Same as WYCO-B
Fish and Aquatics (for detailed information, refer to Table F-18)	None	None	None
Land Use			
Land Use (for detailed information, refer to Table F-19)	None	None	0.2 mile of moderate impact from crossing residential properties

TABLE F-12 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS BY RESOURCE			
Resource	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Parks, Preservation, and Recreation (for detailed information, refer to Table F-20)	None	None	None
Transportation and Access (for detailed information, refer to Table F-20)	None	None	None
Congressional Designations (for detailed information, refer to Table F-20)	None	Crosses 0.2 mile of Dinosaur National Monument (Deerlodge Road). Crossing the monument would require a right-of-way granted to the Applicant by the NPS prior to construction. The crossing is inconsistent with the approved General Management Plan (GMP), EIS, and Record of Decision for the monument. A right-of-way would only be granted by NPS if there is no practicable alternative to such use of NPS lands per the NPS Director's Order 53.	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-20)	Crosses 4.1 miles of the Tuttle Ranch and Cross Mountain Ranch conservation easements. The granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.	Crosses 2.5 miles of the Tuttle Ranch and Cross Mountain Ranch conservation easements. The granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.	Crosses 1.8 miles of the Cross Mountain Ranch Conservation Easement. The granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.

TABLE F-12 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS BY RESOURCE			
Resource	**Alternative WYCO-B** **Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1** **Links C94, C93 (6.5 miles)**	**Variation 2** **Links C94, C95 (7.7 miles)**
Lands with Wilderness Characteristics (for detailed information, refer to Table F-20)	None	None	Crosses 1.6 miles of the Twelvemile Mesa inventoried lands with wilderness characteristics in the BLM Little Snake Field Office. This alternative would cross the eastern portion of the unit, with remaining portion of the unit meeting the 5,000+ acre size requirement.
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-20)	None	None	None
Visual Resources (for detailed information, refer to Table F-21	▪ Low impact on scenery and views due to colocation with existing transmission lines	▪ High impact on views from residences and Dinosaur National Monument (Deerlodge Road) including the kiosk ▪ Moderate impact on views from U.S. Highway 40	▪ Similar to Variation 1 except for moderate impacts on Class B scenery and impacts on Dinosaur National Monument are primarily associated with Deerlodge Road
Cultural Resources (for detailed information, refer to Table F-22)	▪ 14 sites identified by the Class I inventory; one known site in the Project APE ▪ 0.2 miles of high cultural resource intensity ▪ Unrecorded segment of the old Victory Highway is crossed by Link C92 ▪ Key resources are the old Victory Highway and the Deerlodge Road (issue identified for analysis); the Deerlodge Road is outside of the Project APE	▪ 17 sites identified by the Class I inventory; no known sites in the Project APE ▪ 0.0 miles of high cultural resource intensity ▪ Unrecorded segment of the old Victory Highway is crossed by Link C93 ▪ Same key resources as WYCO-B; the Deerlodge Road in in the Project APE	▪ 19 sites identified by the Class I inventory; no known sites in the Project APE ▪ 0.0 mile of high cultural resource intensity ▪ Unrecorded segment of the old Victory Highway is crossed by Link C95 ▪ Same key resources as WYCO-B; the Deerlodge Road is in the Project APE

TABLE F-12 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS BY RESOURCE			
Resource	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.21 for this alternative route.	Same as WYCO-B	Same as WYCO-B
Social and Economic Conditions	Effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.22 for this alternative route.	Same as WYCO-B	Same as WYCO-B
Public Health (EMF)	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative WYCO-B are consistent with those described in Section 3.2.23 for this alternative route.	Same as WYCO-B	Same as WYCO-B

TABLE F-13 DEERLODGE ROAD AREA – 500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Jurisdiction (miles crossed)			
BLM	2.1	0.2	1.7
USFS	0.0	0.0	0.0
NPS	0.0	0.1	0.0
State	0.0	0.0	1.0
Tribal	0.0	0.0	0.0
Private	4.4	6.2	5.0

TABLE F-14 DEERLODGE ROAD AREA – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Temporary disturbance (acres)[1, 4]	72	72	86
Permanent disturbance (acres)[2, 4]	27	21	33
Total disturbance (acres)	99	94	119
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	0	0	0
Access Roads			
Existing (miles)[5]	5.4	6.5	5.4
New (miles)[6]	1.1	0.0	2.3

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 to 5 miles), wire splicing sites (100 by 100 feet every 9,000 feet), multi-purpose 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 in the transmission line right-of-way only. Calculations only include vegetation types with the potential to grow more than 5 feet tall (aspen, mountain forest, mountain shrub, pinyon-juniper, and riparian), and overlap with other disturbance in the Project right-of-way. Vegetation clearing was not calculated for access roads due to the access road design not being available for the alternative routes and route variations at this time and is required to accurately identify locations of temporary and permanent access roads. Temporary and permanent disturbance calculations include estimated disturbance for all access roads.

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

TABLE F-15 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (Links 6.5)**	**Variation 1 Links C94, C93 (Links 6.5)**	**Variation 2 Links C94, C95 (Links 7.7)**
Geologic Hazards			
Affected environment (miles crossed)	▪ 0.0 mile of mine subsidence ▪ 6.5 miles of low flood hazard ▪ 1.0 mile of moderate and 5.5 miles of low landslide hazard	▪ 0.0 mile of mine subsidence ▪ 6.5 miles of low flood hazard ▪ 0.4 mile of moderate and 6.1 miles of low landslide hazard	▪ 0.0 mile of mine subsidence ▪ 7.7 miles of low flood hazard ▪ 0.4 mile of moderate landslide hazard ▪ 7.3 miles of low landslide hazard
Environmental consequences	Crosses 1.0 mile with moderate susceptibility to landslides	Less susceptibility to landslides	Less susceptibility to landslides
Selective mitigation	3	3	3
Cumulative effects	Project could have incremental impacts on areas prone to landslides	Same as WYCO-B	Same as WYCO-B
Soil Resources			
Affected environment (miles crossed	▪ 0.6 mile of soils with moderate susceptibility to water erosion ▪ 0.6 mile of soils with moderate susceptibility to wind erosion ▪ 0.2 mile of prime farmland	▪ 6.5 miles of low susceptibility to water erosion ▪ 6.5 miles of low susceptibility to wind erosion ▪ 0.0 mile of prime farmland	▪ 0.5 mile of soils with moderate susceptibility to water erosion ▪ 0.5 mile of moderate susceptibility to wind erosion ▪ 0.6 mile of prime farmland
Environmental consequences	Most soils with moderate susceptibility to wind and water erosion	▪ No soils with moderate or high susceptibility to wind and water erosion. ▪ No prime farmlands	More miles of prime farmland than WYCO-B and Variation 1
Selective mitigation	1, 3, 7, and 13	1, 3, 7, and 13	1,3, 7, and 13
Cumulative effects	Could have incremental impacts on soils with susceptibility to erosion and prime farmlands	None	Same as WYCO-B
Mineral Resources			
Affected environment (miles crossed)	▪ 0 active mines ▪ 2.4 miles of oil and gas leases	▪ 0 active mines ▪ 2.0 miles of oil and gas leases	▪ 0 active mines ▪ 2.8 miles of oil and gas leases
Environmental consequences	Second-most miles of leases crossed	Least miles of leases crossed	Most miles of leases crossed
Selective mitigation	None	None	None
Cumulative effects	Could have incremental impacts on oil and gas leases	Same as WYCO-B	Same as WYCO-B

TABLE F-15 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (Links 6.5)**	**Variation 1 Links C94, C93 (Links 6.5)**	**Variation 2 Links C94, C95 (Links 7.7)**
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

TABLE F-16 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (Links 6.5)**	**Variation 1 Links C94, C93 (Links 6.5)**	**Variation 2 Links C94, C95 (Links 7.7)**
Affected Environment			
PFYC (miles crossed)	▪ 0.4 mile of PFYC 3 ▪ 6.1 miles of PFYC 5	▪ 6.5 miles of PFYC 5	▪ 0.7 mile of PFYC 3 ▪ 7.0 miles of PFYC 5
Known locality density within 1.0 mile of the centerline	Crosses 6.5 miles of low density for fossil localities	Same as WYCO-B	Crosses 7.7 miles of low density for fossil localities
Environmental Consequences			
PFYC formations	Least miles crossed for those geological units with a PFYC 5, but does cross 0.4 mile of geological units with PFYC 3	Second-most miles crossing geological units with PFYC 5	Crosses the most miles of geological units with PFYC of 5
Percent of route crossing PFYC 5	94	100	91
Impacts on paleontological resources anticipated	Could have high impacts on paleontological resources	Same as WYCO-B	Same WYCO-B
Selective mitigation	None	None	None
Cumulative effects	Could have incremental impacts on paleontological resources	Same	Same
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

TABLE F-17 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Affected Environment			
Class 1: Outstanding waters	None	None	None
Class 4: State-listed impaired waters	None	None	None

TABLE F-17 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Palustrine emergent wetlands	None	1 crossing	1 crossing
Palustrine forested over story wetlands	None	None	None
Palustrine scrub/shrub wetlands	None	None	None
Perennial stream/river	None	None	None
Intermittent stream	9 crossings of tributaries to the Yampa River	12 crossings of tributaries to the Yampa River	13 crossings of tributaries to the Yampa River
Riparian areas	None	None	None
Swamp/marsh/estuary	None	None	None
Well/spring	None	None	None
Environmental Consequences			
Residual impacts	1.7 miles of low impacts	2.5 miles of low impacts	2.8 miles of low impacts
Selective mitigation	None	None	None
Cumulative effects	▪ Would be colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Minor, incremental contribution to the effects on water resources in the area (colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting potential for sedimentation)	▪ Minor, incremental contribution to the effects on water resources in the area. ▪ Transmission line would not be colocated with other linear transmission line infrastructure and would not benefit from the impact reductions associated with colocation	Same as Variation 1
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

TABLE F-18 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Vegetation			
Affected environment (miles of vegetation communities crossed)	▪ 4.9 miles of big sagebrush ▪ 0.4 mile of developed ▪ 0.5 mile of grassland ▪ 0.6 mile of pinyon-juniper ▪ 0.1 mile of shrub/shrub steppe	▪ 0.1 mile of agriculture ▪ 4.9 miles of big sagebrush ▪ Developed – 0.5 ▪ Grassland – 0.2 ▪ Pinyon-juniper – 0.8	▪ 0.2 mile of agriculture ▪ 5.5 miles of big sagebrush ▪ Developed – 0.3 ▪ Pinyon-juniper – 1.6 ▪ Shrub/shrub steppe – 0.1
Environmental consequences (miles crossed)	▪ 5.4 miles of moderate impacts ▪ 0.7 mile of low-to-moderate impacts ▪ 0.4 mile of low impacts	▪ 5.1 miles of moderate impacts ▪ 0.8 mile of low-moderate impacts ▪ 0.6 mile of low impacts	▪ 5.5 miles of moderate impacts ▪ 1.7 miles of low-moderate impacts ▪ 0.5 mile of low impacts
Selective mitigation	None	None	None
Cumulative effects	▪ Would be colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Minor, incremental contribution to the effects on water resources in the area (colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting potential for sedimentation)	▪ Minor, incremental contribution to the effects on water resources in the area. ▪ Transmission line would not be colocated with other linear transmission lines and would not benefit from the impact reductions associated with colocation	Same as Variation 1
Special Status Plants			
Affected environment (miles crossed)	Based on the methods used for the interdisciplinary comparison of alternatives in the EIS, no habitats for special status plants is crossed	Same as WYCO-B	Same as WYCO-B
Environmental consequences	None	None	None
Selective mitigation	None	None	None
Cumulative effects	None	None	None

TABLE F-18 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Wildlife			
Affected environment (miles crossed)	▪ 5.0 miles of elk crucial winter range ▪ 1.3 miles of pronghorn severe winter range Crosses Tuttle Ranch Conservation Easement, recognized by CPW as containing high-quality winter range and migratory routes for the largest elk and mule deer herds in Colorado (including the E-2 Bears Ears and E-6 White River elk herds) and also local pronghorn populations (CPW 2013a); big-game habitat south of U.S. Highway 40 in the Tuttle Ranch Conservation Easement of higher value and importance for big game species than habitat north of U.S. Highway 40 (CPW 2013a).	▪ 3.5 miles of elk crucial winter range ▪ 2.7 miles of mule deer crucial winter range ▪ 1.1 miles of pronghorn severe winter range Located north of U.S. Highway 40 and would avoid the Tuttle Ranch Conservation Easement and associated important big-game habitats recognized by CPW on the easement.	▪ 3.0 miles of elk crucial winter range 0 ▪ 4.3 miles of mule deer crucial winter range ▪ 1.1 miles of pronghorn severe winter range Located north of U.S. Highway 40 and would avoid the Tuttle Ranch Conservation Easement and associated important big-game habitats recognized by CPW on the easement.
Environmental consequences	▪ 5.0 miles of low impacts Would affect important big-game habitats recognized by CPW on the Tuttle Ranch Conservation Easement. Colocation with existing transmission lines would reduce these effects. However, the Project would extend anthropogenic disturbances further into these important habitats.	▪ 5.4 miles of low impacts Avoids important big-game habitats recognized by CPW on the Tuttle Ranch Conservation Easement; Located near U.S. Highway 40 where big game habitats and behavior have likely already been affected by the highway.	▪ 6.9 miles of low impacts Avoids important big-game habitats recognized by CPW on the Tuttle Ranch Conservation Easement; is located in an area with few existing anthropogenic disturbances.
Selective mitigation	12 and 15	12 and 15	12 and 15
Cumulative effects	▪ Colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Would contribute to the existing to the effects on important wildlife resources in the area;	▪ Would contribute to the existing effects on wildlife resources in the area ▪ Transmission line would be colocated with U.S. Highway 40, which has likely already modified wildlife habitats and behavior in the area	▪ Would contribute to the existing effects on wildlife resources in the area ▪ Would be located in an area with little pre-existing disturbance; therefore, the contribution to the

TABLE F-18 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
	colocation with other infrastructure would reduce these effects, but the value of habitats affected would be higher than Variation 1 or 2		incremental effects on wildlife would likely be greater than Variation 1.
Special Status Wildlife			
Affected environment (miles crossed)	▪ 0.3 mile of mountain plover potential habitat ▪ 0.7 mile of white-tailed prairie dog potential colonies ▪ 2.8 miles of greater sage-grouse habitat within 4 miles of leks located in priority habitats ▪ 4.8 miles of greater sage-grouse general habitat ▪ 1.7 miles of greater sage-grouse priority habitat ▪ Crosses the Tuttle Ranch Conservation Easement, recognized by CPW as containing extensive areas of high-quality sage-grouse nesting and brood-rearing habitat. Although the density of sage-grouse on the Tuttle Ranch Conservation Easement property is relatively low compared to other portions of the Northwest Colorado population, the area provides connectivity between key areas of priority habitat from the Axial Basin to the Blue Mountain area (east to west). CPW also recognizes the Tuttle Ranch Conservation Easement property as containing some of the highest densities of white-tailed prairie dog colonies anywhere in northwestern	▪ 0.3 mile of mountain plover potential habitat ▪ 3.4 miles of greater sage-grouse habitat within 4 miles of leks located in priority habitats ▪ 3.8 miles of greater sage-grouse general habitat ▪ 2.7 miles of greater sage-grouse priority habitat Located north of U.S. Highway 40 and would avoid the Tuttle Ranch Conservation Easement and associated important sage-grouse and white-tailed prairie dog habitats recognized by CPW located on the easement	▪ 3.4 miles of greater sage-grouse habitat within 4 miles of leks located in priority habitats ▪ 0.9 mile greater sage-grouse general habitat ▪ 3.6 miles greater sage-grouse priority habitat Located north of U.S. Highway 40 and would avoid the Tuttle Ranch Conservation Easement and associated important sage-grouse and white-tailed prairie dog habitats recognized by CPW located on the easement

TABLE F-18 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
	Colorado and a potential preferred location for the future release of black-footed ferrets (CPW 2013a).		
Environmental consequences (miles crossed)	3.2 miles of high impacts 3.3 miles of low impacts	4.1 miles of high impacts 2.4 miles of low impacts	4.5 miles of high impacts
Selective mitigation	5, 7, 12, and 13	5, 12, and 13	5, 12, and 13
Cumulative effects	▪ Colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission project ▪ Contribute to the existing effects on important and rare special status wildlife resources in the area; colocation with other infrastructure would help reduce these effects, but the value of habitats affected would be higher than Variation 1 or 2	▪ Contribute to the existing effects on special status wildlife resources in the area ▪ Line would be colocated with U.S. Highway 40, which has likely already modified wildlife habitats and behavior in the area	▪ Contribute to the existing effects on special status wildlife resources in the area. ▪ Located in an area with little preexisting disturbance; contribution to the incremental effects on special status wildlife would likely be greater than Variation 1.
Fish and Aquatics			
Affected environment	Alternative WYCO-B crosses intermittent streams and wetlands in the Deerlodge Road area, which could provide habitat for fish and other aquatic resources. However, no specific resources analyzed in detail in the EIS were identified in this area.	Similar to WYCO-B	Similar to WYCO-B
Environmental consequences	None	None	None
Selective mitigation	None	None	None
Cumulative effects	None	None	None
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

TABLE F-19 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Utility Corridors (miles)			
Designated (BLM and USFS)	1.9	0.2	0.2
West-wide Energy Corridor	1.6	0.2	0.2
Parallel Linear Facilities (miles)			
500kV	0.0	0.0	0.0
345kV	6.3	0.8	0.6
138kV	6.3	0.8	0.6
230kV	0.0	0.0	0.0
Pipeline	0.0	0.0	2.0
Existing Land Use			
Affected environment and consequences	No key impacts	No key impacts	Crosses 0.2 mile of residential land resulting in moderate residual impacts
Selective mitigation	None	None	7
Cumulative effects	None	None	The short-term cumulative effects of the Project in addition to past/present and Reasonably Foreseeable Future Actions (RFFAs) could potentially limit and/or alter access to existing residence(s) and noise may be produced during construction of the Project. Long-term cumulative effects could potentially restrict use of property where projects occur on private lands.
Authorized Land Use			
Affected environment and consequences	No key impacts	No key impacts	No key impacts
Selective mitigation	None	None	None
Future Land Use			
Affected environment and consequences	No key impacts	No key impacts	No key impacts
Selective mitigation	None	None	None
Cumulative effects	None	None	None
Zoning and General Plan Management Direction[1]			
Generalized permitting	No key permitting requirements	No key permitting requirements	No key permitting requirements
Selective mitigation	None	None	None

TABLE F-19 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Plan Compliance			
Plan amendment (Yes or No)	No	No	No
Note: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.			

TABLE F-20 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Parks, Preservation, and Recreation			
Affected environment and consequences	No key impacts	No key impacts	No key impacts
Selective mitigation	None	None	None
Cumulative effects	None	None	None
Transportation and Access			
Affected environment	Crosses U.S. Highway 40 and other roadways	Crosses U.S. Highway 40, Deerlodge Road, and other roadways	Crosses U.S. Highway 40, Deerlodge Road, and other roadways
Environmental consequences	Moderate impacts are anticipated where temporary closures and/or delays would occur from construction of the project when crossing roadways (e.g., U.S. Highway 40). See Section 3.2.13 for more information.	Same as WYCO-B	Same as WYCO-B
Selective mitigation	5 and 9	5 and 9	5 and 9
Cumulative effects	Not applicable	Not applicable	Not applicable
Congressional Designations			
Affected environment and consequences	No key impacts	Crosses 0.2 mile of Dinosaur National Monument (Deerlodge Road). Crossing the monument would require a right-of-way permit be granted to the Applicant by the NPS prior to construction.	No key impacts

TABLE F-20 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
		The crossing is inconsistent with the approved GMP, EIS, and ROD for the monument. A right-of-way will only be granted by NPS if there is no practicable alternative to such use of NPS lands per the NPS Director's Order 53.	
Selective mitigation	None	None	None
Cumulative effects	None	None	None
Special Designations and Other Management Areas			
Affected environment and consequences	Crosses 4.1 miles of the Tuttle Ranch and Cross Mountain Ranch conservation easements. The granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.	Crosses 2.5 miles of the Tuttle Ranch and Cross Mountain Ranch conservation easements. The granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.	Crosses 1.8 miles of the Cross Mountain Ranch Conservation Easement. The granting of easements or rights-of-way for transmission is prohibited. The only effective mitigation would be avoidance in lieu of amending the terms of the agreement.
Selective mitigation	None	None	None
Cumulative effects	Short-term cumulative effects of the Project, in addition to any past and present actions and an RFFA proposed in this area, would be increased noise from construction equipment, limited access to a portion of the conservation easement during construction actions, and disturbance to the land in the right-of-way; long-term cumulative effects include additional industrial development in the conservation easement, which goes against the terms of the conservation easement	Short-term cumulative effects of the Project, in addition to any past and present actions and an RFFA proposed in this area, would be increased noise from construction equipment, limited access to a portion of the conservation easement during construction actions, and disturbance to the lands in the right-of-way; long-term cumulative effects include additional industrial development in the conservation easement, which goes against the terms of the conservation easement	Short-term cumulative effects of the Project, in addition to any past and present actions and an RFFA proposed in this area, would be increased noise from construction equipment, limited access to a portion of the conservation easement during construction actions, and disturbance to the lands in the right-of-way; long-term cumulative effects include additional industrial development in the conservation easement, which goes against the terms of the conservation easement

TABLE F-20 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Lands with Wilderness Characteristics			
Affected environment and consequences	No key impacts	No key impacts	Crosses 1.6 miles of the Twelvemile Mesa inventoried lands with wilderness characteristics in the Little Snake field office. This alternative would cross the eastern portion of the unit, with remaining portion of the unit meeting the 5,000+ acre size requirement.
Selective mitigation	None	None	None
Cumulative effects	None	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas			
Affected environment and consequences	None	None	None
Selective mitigation	None	None	None
Cumulative effects	None	None	None
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

TABLE F-21 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Affected Environment			
Scenery (miles crossed)	▪ 0.7 mile of Class B ▪ 5.8 miles of Class C	▪ 2.5 miles of Class B ▪ 4.0 miles of Class C	▪ 3.6 miles of Class B ▪ 4.1 miles of Class C
High concern viewers (miles crossed)	▪ 0.0 mile of views within 0.5 mile ▪ 0.0 mile of views between 0.5 mile and 1.0 mile	▪ 2.4 miles of views within 0.5 mile ▪ 1.1 miles of views between 0.5 mile and 1.0 mile	▪ 2.8 miles of views within 0.5 mile ▪ 1.4 miles of views between 0.5 mile and 1.0 mile

TABLE F-21 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Moderate concern viewers (miles crossed)	▪ 2.6 miles of views within 0.5 mile – 2.6 ▪ 2.3 miles of views between 0.5 mile and 1.0 mile	▪ 6.5 miles of views within 0.5 mile ▪ V0.0 mile of views between 0.5 mile and 1.0 mile	▪ 4.2 miles of views within 0.5 mile ▪ 1.7 miles of views between 0.5 mile and 1.0 mile
Federal Agency Visual Management Objectives	▪ 1.6 miles of BLM VRM Class III	▪ None	▪ 1.5 miles of BLM VRM Class III
Environmental Consequences			
Scenery	No key impacts	No key impacts	Moderate impact on Class B scenery
Residences	No key impacts	▪ High impact on views from residences adjacent to Deerlodge Road and U.S. Highway 40	Similar to WYCO-B
Travel routes	No key impacts	▪ High impact on views from Deerlodge Road ▪ Moderate impact on views from U.S. Highway 40	Similar to WYCO-B
Recreation areas	No key impacts	High impact on views from Dinosaur National Monument associated primarily with the kiosk adjacent to U.S. Highway 40	High impact on views from Dinosaur National Monument associated primarily with the Deerlodge Road
Special designations	No key impacts	High impact on views from Dinosaur National Monument	Similar to WYCO-B
Selective mitigation	9	9	3, 4, 5, and 9
Cumulative effects	Colocation with existing lines consolidates impact on scenery with minimal effects on view from Deerlodge Road (Dinosaur National Monument)	More expansive area of scenery would be modified and increased cumulative effects on views from U.S. Highway 40 and Deerlodge Road	Due to separation from existing transmission lines, most expansive cumulative effects on scenery and increased impact on views from Deerlodge Road
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

TABLE F-22 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Affected environment	▪ 14 sites identified by the Class I inventory ▪ One known site in the Project APE ▪ Unrecorded segment of the old Victory Highway crossed by Link C92 ▪ Key resources include the old Victory Highway and the Deerlodge Road; the Deerlodge Road is outside of the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified	▪ 17 sites identified by the Class I inventory ▪ There are no known sites in the Project APE ▪ Unrecorded segments of the old Victory Highway crossed by Link C93 ▪ Same key resources as WYCO-B, except the Deerlodge Road is in the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified	▪ 19 sites identified by the Class I inventory ▪ There are no known sites in the Project APE ▪ Unrecorded segment of the old Victory Highway crossed by Link C95 ▪ Same key resources as WYCO-B, except the Deerlodge Road is in the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified
Environmental consequences	▪ 0.2 mile of high cultural resource intensity, except there is one historic linear site in the Project APE ▪ 0.2 mile of moderate cultural resource intensity ▪ 6.1 miles of low cultural resource intensity	Compared to WYCO-B, Variation 1 would include: ▪ 0.0 mile of high cultural resource intensity, except there is one historic linear site in the Project APE ▪ Same miles of moderate cultural resource intensity ▪ An additional 0.2 mile of low cultural resource intensity	Compared to WYCO-B, Variation 2 would include: ▪ 0.0 mile of high cultural resource intensity, except there is one historic linear site in the Project APE ▪ 0.0 mils of moderate cultural resource intensity ▪ An additional 1.6 miles of low cultural resource intensity
Selective mitigation	Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Applicant and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies	Same as WYCO-B	Same as WYCO-B

TABLE F-22 DEERLODGE ROAD AREA – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES			
Focus of Comparison	**Alternative WYCO-B Links C92, C171, C173, C174 (6.5 miles)**	**Variation 1 Links C94, C93 (6.5 miles)**	**Variation 2 Links C94, C95 (7.7 miles)**
Cumulative effects	The addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources.	Same as WYCO-B	Same as WYCO-B
Plan Compliance			
Plan amendment (Yes or No)	No	No	No

Colorado-Utah Border

F.4 Colorado-Utah Border

This route variation area begins just east of the Colorado-Utah Border and ends south of the Bonanza Power Plant (Map F-4). In the Draft EIS, two alternative route options were presented in the area of the Colorado-Utah border: the route of Alternative COUT-C, the Agency Preferred Alternative (Links C188, U242, U280, U285 that are common to Alternatives COUT-C, COUT-H, and COUT-I), which heads to the southwest, and an alternative route (Links C187, U241, and U310 that are common to Alternatives COUT-A, COUT-B), which heads to the southwest then west. Based on review of the Draft EIS, the BLM White River Field Office (WRFO) requested that a route variation be analyzed to avoid crossing the Raven Ridge Area of Critical Environmental Concern (ACEC), avoid potential effects on sensitive plant species, and avoid effects on an area with a high potential for archaeological sites. In response WRFO's concerns, a route variation, Variation 1 (Links C187, U241, U260, U290) was developed and analyzed. Refer to Map F-4. The Applicant's technical analysis indicated that, along the route variation, the proposed transmission line would have to cross existing and/or the proposed TransWest Express transmission line several times; a condition that increases the possibility for outages caused by catastrophic events, thereby decreasing the reliability of the transmission lines. Also, the Applicant committed to moving the alignment to avoid crossing the Raven Ridge ACEC and committed to relocate the existing Bears Ears to Bonanza 345kV transmission line outside of the ACEC. Through further environmental analysis and discussion with the BLM WRFO and considering the Applicant's commitments to move the proposed and existing transmission line alignments, the WRFO concurred with the route of Alternative COUT-C, the Agency Preferred Alternative (Links C188, U242, U280, U285).

The lands crossed by the route of Alternative COUT-C (Agency Preferred Alternative) and Variation 1 are mostly administered by the BLM with isolated parcels of state-administered and privately owned lands. Primary resource issues in this area include: Uinta Basin hookless cactus core habitat, greater sage-grouse core habitat, Graham's and White River beardtongues, and views from Dinosaur National Monument.

Table F-23 is a comparison of substantive resource issues for each route variation. Table F-24 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-25 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-26 to F-33 describe the inventory, impacts, and plan compliance for each resource in a comparison of route variations.

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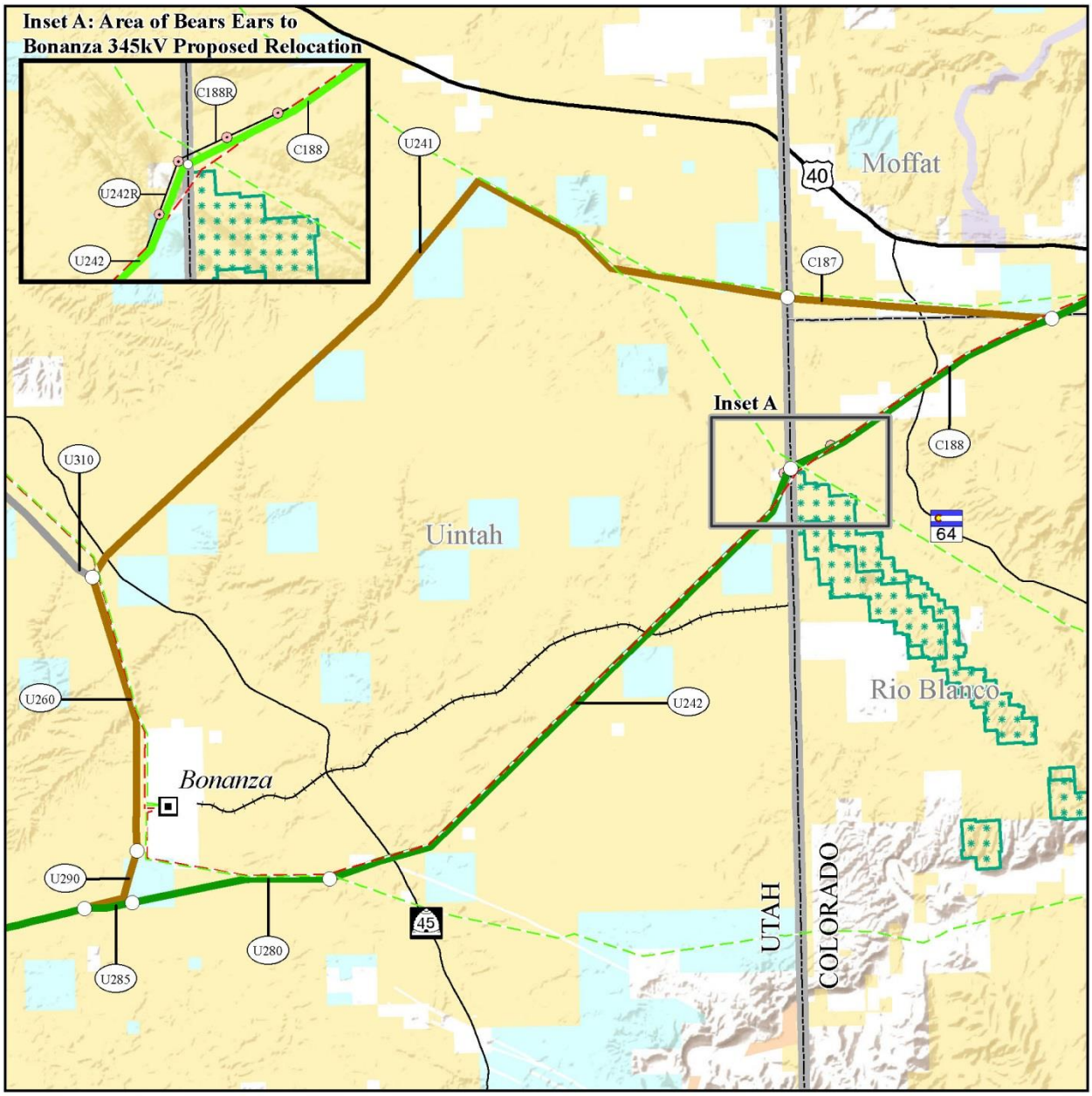

Map F-4

Colorado-Utah Border

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative COUT-C
- Variation 1
- All Other Alternative Routes
- Link Number
- Link Node
- 345kV Proposed Relocation (Inset A)

Land Ownership

- Bureau of Land Management
- National Park Service
- State Land
- Private Land

General Reference

- Power Plant
- 345kV Transmission Line
- 138kV Transmission Line
- Railroad
- U.S. Highway
- State Highway
- State Boundary
- County Boundary
- Raven Ridge ACEC

SOURCES:
Land Jurisdiction, BLM 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013;
State and County Boundaries, ESRI 2013;
Raven Ridge ACEC, BLM 2006

NOTES:
• The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.

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

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Miles

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TABLE F-23 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C** **Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1** **Links C187, U241, U260, U290 (30.4 miles)**
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.1 for this alternative route.	Same as COUT-C
Earth Resources (miles crossed) (for detailed information, refer to able F-26)	▪ 23.5 miles of low flood hazard ▪ 1.2 miles of moderate landslide hazard ▪ 22.3 miles of low landslide hazard ▪ 1.6 miles of route is within one-mile of active mine or producing wells ▪ 1.0 mile of route crosses a coal lease ▪ 21.1 miles crosses oil and gas leases ▪ 0.1 mile of prime farmland ▪ 0.9 mile of soils with moderate susceptibility to water erosion	▪ 30.4 miles of low flood and landslide hazard ▪ 4.9 miles of route is within one-mile of active mine or producing wells ▪ 0.5 mile of route crosses a coal lease ▪ 21.5 miles oil and gas leases ▪ 0.1 mile of prime farmland ▪ 0.3 mile of soils with moderate susceptibility to water erosion ▪ 1.6 miles of soils with moderate susceptibility to wind erosion
Paleontological Resources (for detailed information, refer to Table F-27)	Crosses 3.5 miles of geological units with PFYC 3, 0.9 mile of geological units with PFYC 4, and 7.3 miles of geological units with PFYC 5	Crosses 1.4 miles of geological units with PFYC 3, 4.1 miles of geological units with PFYC 4, and 14.9 miles of geological units with PFYC 5
Water Resources (for detailed information, refer to Table F-28)	No critical issues	No critical issues
Biological Resources		
Vegetation (for detailed information, refer to Table F-29)	No critical issues	No critical issues

TABLE F-23 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Special Status Plants (for detailed information, refer to Table F-29)	Route would cross near known locations and potential habitat for BLM-sensitive and conservation agreement sensitive species near the Raven Ridge ACEC; the route variation also crosses potential habitat for Uinta Basin hookless cactus.	Route variation crosses potential Uinta Basin hookless cactus habitat as well as Uinta Basin hookless cactus Level 1 and Level 2 core areas. U.S. Fish and Wildlife Service (FWS) recommendations for management of cactus core areas include no new surface disturbance within Level 1 core areas and minimizing surface disturbance in Level 2 areas to 5 percent. The Bonanza Level 1 and Level 2 areas that would be crossed already exceed recommended disturbance caps. The Project may not be able to avoid all Uinta Basin hookless cactus locations in core areas. Compensatory mitigation and transplantation of Uinta Basin hookless cactus may be required.
Wildlife (for detailed information, refer to Table F-29)	No critical issues	No critical issues
Special Status Wildlife (for detailed information, refer to Table F-29)	16.0 miles of high impacts on greater sage-grouse core areas and black-footed ferret habitat	17.4 miles of high impacts on greater sage-grouse core areas and black-footed ferret habitat
Migratory Birds (for detailed information, refer to Table F-29)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.9 for this alternative route.	Same as COUT-C
Fish and Aquatics (for detailed information, refer to Table F-29)	None	None
Land Use		
Land Use (for detailed information, refer to Table F-30)	None	None
Parks, Preservation, and Recreation (for detailed information, refer to Table F-31)	None	None
Transportation and Access (for detailed information, refer to Table F-31)	None	None
Congressional Designations (for detailed information, refer to Table F-31)	None	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-31)	None	None

TABLE F-23 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C** **Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1** **Links C187, U241, U260, U290 (30.4 miles)**
Lands with Wilderness Characteristics (for detailed information, refer to Table F-31)	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-31)	None	None
Visual Resources (for detailed information, refer to Table F-32)	No key impacts	▪ Moderate impact on Class B scenery ▪ Moderate impact on views from residences in Dinosaur (Colorado), Dinosaur Diamond Scenic Byway (Colorado State Highway 64), and Dinosaur National Monument
Cultural Resources (for detailed information, refer to Table F-33)	▪ 268 sites identified by the Class I inventory; 13 known site in the Project APE ▪ 2.1 miles of high cultural resource intensity ▪ Key resources are an historic Ute rock art site, a large gilsonite mine complex, the Chipeta Wells Station, and the old Victory Highway; the gilsonite mine complex is in the Project APE	▪ 279 sites identified by the Class I inventory; 9 known site in the Project APE ▪ 1.3 miles of high cultural resource intensity ▪ Key resources are a Hopi sandstone cairn, the Chipeta Wells Station, and the old Victory Highway; these resources are outside of the Project APE
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.21 for this alternative route.	Same as COUT-C
Social and Economic Conditions	Effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.22 for this alternative route.	Same as COUT-C
Public Health (EMF)	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.23 for this alternative route.	Same as COUT-C

TABLE F-24 COLORADO-UTAH BORDER – 500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Jurisdiction (miles crossed)		
BLM	20.2	24.1
USFS	0.0	0.0
NPS	0.0	0.0
State	2.2	4.3
Tribal	0.0	0.0
Private	1.1	2.0

TABLE F-25 COLORADO-UTAH BORDER – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Temporary disturbance (acres)[1, 4]	256	322
Permanent disturbance (acres)[2, 4]	78	106
Total disturbance (acres)	334	428
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	6	51
Access Roads		
Existing (miles)[5]	18.3	22.6
New (miles)[6]	5.2	7.8

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

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

ABLE F-26 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Geologic Hazards		
Affected environment (miles crossed)	▪ 0.0 miles of mine subsidence ▪ 23.5 miles of low flood hazard ▪ 1.2 miles of moderate landslide hazard ▪ 22.3 miles of low landslide hazard	▪ 0.0 miles of mine subsidence ▪ 30.4 miles of low flood hazard ▪ 30.4 miles of low landslide hazard
Environmental consequences	Could have moderate susceptibility to landslides	Would only have low potential for impact from geological hazards
Selective mitigation	3	None
Cumulative effects	Could have incremental impacts on areas prone to landslides	None
Soil Resources		
Affected environment (miles crossed)	▪ 0.9 mile of soils with moderate susceptibility and 22.4 miles of soils with low susceptibility to water erosion ▪ 23.5 miles of soils with low susceptibility to wind erosion ▪ 0.1 mile of Prime or Unique Farmland	▪ 0.3 mile of soils with moderate susceptibility 30.1 miles of soils with low susceptibility to water erosion ▪ 1.6 miles of soils with moderate susceptibility and 28.8 miles of soils with low susceptibility to wind erosion ▪ 0.1 mile of Prime or Unique Farmland
Environmental consequences	More soils with moderate susceptibility to water erosion, but no soils with moderate susceptibility to wind erosion	Fewer soils with moderate susceptibility to water erosion, but more soils with moderate susceptibility to wind erosion
Selective mitigation	1, 3, 7, and 13	1, 3, 7, and 13
Cumulative effects	Could have incremental impacts on soils susceptible to wind and water erosion	Same as COUT-C
MineralResources		
Affected environment (miles crossed)	▪ 1.6 miles of the route are within 1.0 mile of active mines or producing wells ▪ 1.0 mile crosses a coal lease ▪ 21.1 miles crosses an oil and gas lease	▪ 4.9 miles of the route are within 1.0 mile of active mines or producing wells ▪ 0.5 mile crosses a coal lease ▪ 21.5 miles crosses an oil and gas lease
Environmental consequences	Highest impact on mineral resources	Lowest impact on mineral resources
Selective mitigation	2 and 7	2 and 7
Cumulative effects	Could have incremental impacts on leases and producing wells	Same as COUT-C
Plan Compliance		
Plan amendment	No	No

TABLE F-27 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Affected Environment		
PFYC (miles crossed)	▪ 11.8 miles of PFYC 2 ▪ 3.5 miles of PFYC 3 ▪ 0.9 mile of PFYC 4 ▪ 7.3 miles of PFYC 5	▪ 10.0 miles of PFYC 2 ▪ 1.4 miles of PFYC 3 ▪ 4.1 miles of PFYC 4 ▪ 14.9 miles of PFYC 5
Known locality density within 1.0 mile of the centerline (miles crossed)	▪ 26.8 miles of low density for fossil localities ▪ 3.4 miles of moderate density for fossil localities	▪ 21.6 miles of low density for fossil localities ▪ 1.9 miles of moderate density for fossil localities
Environmental Consequences		
PFYC formations (miles crossed)	Crosses 11.7 miles of geological units with PFYC 3, 4, or 5	Crosses 20.4 miles of geological units with PFYC 3,4, or 5
Percent of route crossing PFYC 3, 4, and 5	50	67
Impacts on paleontological resources anticipated	Lower impacts then Variation 1	Crosses twice as many miles with PFYC 4 and 5 than COUT-C
Selective mitigation	None	None
Cumulative effects	Could have incremental impacts on paleontological resources	Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-28 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Affected Environment		
Class 1: Outstanding waters	None	None
Class 4: State-listed impaired waters	10 crossings	5 crossings
Palustrine emergent wetlands	None	2 crossings
Palustrine forested overstory wetlands	None	None
Palustrine scrub/shrub wetlands	None	None
Perennial stream/river	None	1 crossing
Intermittent stream	39 crossings	33 crossings
Riparian areas	None	None
Swamp/marsh/estuary	None	None
Well/spring	None	None

TABLE F-28 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Environmental Consequences		
Residual Impacts (miles crossed)	8.8 miles of low impacts	▪ 0.2 mile of moderate impacts ▪ 8.5 miles of low impacts
Selective mitigation	1, 2, 7, and 11	1, 2, 7, and 11
Cumulative effects	▪ Would be colocated with existing high-voltage transmission lines ▪ Minor, incremental contribution to the effects on water resources in the area; colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting potential for sedimentation	▪ Colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Minor, incremental contribution to the effects on water resources in the area; colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting potential for sedimentation
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-29 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Vegetation		
Affected environment (miles crossed)	▪ 0.6 mile of barren ▪ 11.7 miles of big sagebrush ▪ 0.2 mile of developed ▪ 3.1 miles of invasive ▪ 0.2 mile od pinyon-juniper ▪ 7.6 miles of shrub/shrub steppe ▪ 0.1 mile of water	▪ 1.0 mile of barren ▪ 18.7 miles of big sagebrush ▪ 0.1 mile of grassland ▪ 3.5 miles of invasive ▪ 1.6 miles of pinyon-juniper ▪ 5.5 miles of shrub/shrub steppe
Environmental consequences (miles crossed)	▪ 12.4 miles of moderate impacts ▪ 7.8 miles of low-moderate impacts ▪ 3.3 miles of low impacts	▪ 19.9 miles of moderate impacts ▪ 7.1 miles of low-moderate impacts ▪ 3.5 miles of low impacts
Selective mitigation	▪ 1, 2, 4, and 7	▪ None

TABLE F-29 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Cumulative effects	▪ Colocated with existing high-voltage transmission lines ▪ Minor, incremental contribution to the effects on vegetation resources in the area; colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting surface disturbance	▪ Colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Minor, incremental contribution to the effects on vegetation resources in the area; colocation with other infrastructure would reduce these effects as it would minimize road construction and resulting surface disturbance
Special Status Plants		
Affected environment (miles crossed)	▪ 0.4 mile of Graham's penstemon potential habitat ▪ 3.4 miles of Uinta Basin hookless cactus potential habitat ▪ 0.4 mile of White River penstemon potential habitat ▪ BLM-sensitive and species covered by BLM conservation agreements are known to be present in the area around the Raven Ridge ACEC near the Colorado/Utah border.	▪ 6.0 miles of Uinta Basin hookless cactus potential habitat ▪ 1.0 mile of Uinta Basin hookless cactus level 1 core area ▪ 2.5 miles of Uinta Basin hookless cactus level 2 core area
Environmental consequences (miles crossed)	▪ 3.8 miles of low residual impacts ▪ Special status plant surveys would be required to determine the potential effects on BLM-sensitive plants near the Raven Ridge ACEC.	▪ 1.0 mile of moderate impacts ▪ 5.0 miles of low impacts ▪ The route would cross Uinta Basin hookless cactus Level 1 and Level 2 core areas. FWS recommenda-tions for management of cactus core areas include no new surface disturbance within Level 1 core areas and minimizing surface disturbance in Level 2 areas to 5 percent. The Bonanza Level 1 and Level 2 areas that would be crossed already exceed recommended disturbance caps.
Selective mitigation	2, 5, and 7	2, 5, and 7

TABLE F-29 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Cumulative effects	▪ Would contribute to the existing effects of oil and gas development and existing transmission lines on Uinta Basin hookless cactus, White River penstemon, and Graham's penstemon potential habitats; colocation with existing infrastructure would help reduce these effects as it would reduce road construction and resulting surface disturbance	▪ Would contribute to the existing effects of oil and gas development and existing transmission lines on Uinta Basin hookless cactus core areas ▪ Surface disturbance in core areas would be required and it is anticipated that not all cacti locations could be avoided ▪ FWS recommendations for management of cactus core areas include no new surface disturbance within Level 1 core areas and minimizing surface disturbance in Level 2 areas to 5 percent; Bonanza Level 1 and Level 2 areas that would be crossed already exceed recommended disturbance caps
Wildlife		
Affected environment (miles crossed)	▪ 4.1 miles of mule deer crucial winter range ▪ 6.7 miles of pronghorn crucial yearlong range ▪ 16.7 miles of pronghorn fawning areas	▪ 8.6 miles of mule deer crucial winter range ▪ 23.8 miles of pronghorn crucial yearlong range ▪ 23.8 miles of pronghorn fawning areas
Environmental consequences	20.6 miles of low residual impacts	30.4 miles of low residual impacts
Selective mitigation	12 and 15	12 and 15
Cumulative effects	▪ Would be colocated with existing high-voltage transmission lines ▪ Minor, incremental contribution to the effects on wildlife in the area; colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting surface disturbance	▪ Colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Minor, incremental contribution to the effects on wildlife in the area; colocation with other infrastructure would reduce these effects as it would minimize road construction and resulting surface disturbance

TABLE F-29 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Special Status Wildlife		
Affected environment (miles crossed)	▪ 7.5 mile of black-footed ferret potential habitat ▪ 9.7 miles of mountain plover potential habitat ▪ 6.4 miles of white-tailed prairie dog potential colonies ▪ 3.0 miles of greater sage-grouse habitat within 4 miles of leks in priority habitat ▪ 6.0 miles of greater sage-grouse general habitat ▪ 16.0 miles of greater sage-grouse priority habitat	▪ 6.1 miles of black-footed ferret potential habitat ▪ 6.6 miles of mountain plover potential habitat ▪ 5.8 miles of white-tailed prairie dog potential colonies ▪ 2.4 miles of greater sage-grouse habitat within 4 miles of leks in priority habitat ▪ 5.3 miles of greater sage-grouse general habitat ▪ 11.3 miles of greater sage-grouse priority habitat
Environmental consequences (miles crossed)	▪ 16.0 miles of high residual impacts ▪ 1.3 miles of moderate residual impacts ▪ 5.9 miles of low residual impacts	▪ 17.4 miles of high residual impacts ▪ 3.8 miles of moderate residual impacts ▪ 4.1 miles of low residual impacts
Selective mitigation	5, 7, 12, 13 and 15	5, 7, 12, 13 and 15
Cumulative effects	▪ Colocated with existing high-voltage transmission lines ▪ Minor, incremental contribution to the effects on special status wildlife in the area; colocation with other infrastructure would reduce these effects as it would reduce road construction and resulting surface disturbance	▪ Colocated with existing high-voltage transmission lines and the proposed TransWest Express transmission line ▪ Incremental contribution to the effects on special status wildlife in the area; colocation with other infrastructure would reduce these effects as it would minimize road construction and resulting surface disturbance
Fish and Aquatics		
Affected environment	No specific resources analyzed in detail in the EIS were identified in this area.	Same as COUT-C
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-30 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Utility Corridors (miles)		
Designated (BLM and USFS)	0.6	3.2
West-wide Energy Corridor	0.0	10.6
Parallel Linear Facilities (miles)		
500kV	0.0	0.0
345kV	21.0	7.6
138kV	4.1	18.8
230kV	0.0	0.0
Pipeline	0.7	3.9
Existing Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Authorized Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Future Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Zoning and General Plan Management Direction[1]		
Generalized permitting	No key permitting requirements	No key permitting requirements
Selective mitigation	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

NOTE: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.

TABLE F-31 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; CONGRESSIONAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Parks, Preservation, and Recreation areas		
Affected environment and consequences	Crosses 0.4 mile of scenic byway. See visual resources in the Final EIS for more details.	Crosses 0.1 mile of scenic byway. See visual resources in the Final EIS for more details.
Selective mitigation	None	None
Cumulative effects	None	None
Transportation and Access		
Affected environment	Crosses Colorado State Highway 64, Utah State Route 45, and other roadways.	Crosses Colorado State Highway 64, Utah State Route 45, and other roadways.
Environmental consequences	Moderate impacts would be anticipated where temporary closures and/or delays would occur from construction of the project when crossing roadways (e.g. Colorado State Highway 64). See Section 3.2.13 for more information.	Same as COUT-C
Selective mitigation	5 and 9	5 and 9
Cumulative effects	Not applicable	Not applicable
Congressional Designations		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Special Designations and Other Management Areas		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Lands with Wilderness Characteristics		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas		
Affected environment	None	None
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment	No	No

TABLE F-32 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Affected Environment		
Scenery (miles crossed)	▪ 0.8 mile of Class B ▪ 22.7 miles of Class C	▪ 4.3 miles of Class B ▪ 26.1 miles of Class C
High concern viewers (miles crossed)	▪ 1.0 mile of views within 0.5 mile ▪ 0.9 mile of views between 0.5 mile and 1.0 mile	▪ 1.0 mile of views within 0.5 mile ▪ 0.9 mile of views between 0.5 mile and 1.0 mile
Moderate concern viewers (miles crossed)	▪ 1.6 miles of views within 0.5 mile ▪ 1.5 miles of views between 0.5 mile and 1.0 mile	▪ 1.2 miles of views within 0.5 mile ▪ 1.6 miles of views between 0.5 mile and 1.0 mile
Federal Agency Visual Management Objectives	▪ 1.2 miles of BLM VRM Class II ▪ 13.7 miles of BLM VRM Class III ▪ 5.2 miles of BLM VRM Class IV	▪ 9.5 miles of BLM VRM Class III ▪ 14.6 miles of BLM VRM Class IV
Environmental Consequences		
Scenery	No key impacts	Moderate impact on Class B scenery
Residences	No key impacts	Moderate impact on views from residences in Dinosaur, Colorado
Travel routes	No key impacts	Moderate impact on views from Dinosaur Diamond Scenic Byway (Colorado State Highway 64)
Recreation areas	No key impacts	No key impacts
Special designations	No key impacts	Moderate impact on views from Dinosaur National Monument (Canyon Visitor Center)
Selective mitigation	9	3, 4, 9, and 16
Cumulative effects	Consolidates impacts on scenery adjacent to similar types of modification and reduced cumulative effects on views from Dinosaur National Monument	Colocation with the TransWest Express transmission project would introduce additional impacts on scenery and would increasingly modify views from Dinosaur National Monument
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-33 COLORADO-UTAH BORDER – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Links C188, U242, U280, U285 (23.5 miles)**	**Variation 1 Links C187, U241, U260, U290 (30.4 miles)**
Affected environment	▪ 268 sites identified by the Class I inventory (30 sites in Colorado and 239 in Utah) ▪ 13 known sites in the Project APE (5 sites in Colorado and 8 in Utah) ▪ Key resources include an historic Ute rock art site, a large gilsonite mine complex, the Chipeta Wells Station, and the old Victory Highway; the gilsonite mine complex is crossed by Link U280 (Utah) ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified	▪ 279 sites identified by the Class I inventory (16 sites in Colorado and 263 in Utah) ▪ Nine known site in the Project APE (1 site in Colorado and 8 in Utah) ▪ Key resources include a Hopi sandstone cairn, the Chipeta Wells Station, and the old Victory Highway; these resources are outside of the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified
Environmental consequences	▪ 2.1 miles of high cultural resource intensity ▪ 1.2 miles of moderate cultural resource intensity ▪ 20.2 miles of low cultural resource intensity	▪ 1.3 miles of high cultural resource intensity. ▪ 7.1 miles of moderate cultural resource intensity ▪ 22 miles of low cultural resource intensity
Selective mitigation	Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies	Same as COUT-C
Cumulative effects	The addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources	Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

Argyle Ridge

F.5 Argyle Ridge

This route variation area is located 20 miles northeast of Helper, Utah, approximately 5 miles up Argyle Canyon from Ninemile Canyon (Map F-5).

The Draft EIS presented a route (Link U407) that crosses Argyle Ridge, descends into and west through Argyle Canyon then exits the canyon and proceeds southwest. As the Applicant's engineers were reviewing Link U407, it was determined that would be feasible to cross over the canyon to the south and proceed east through mountainous terrain, thereby avoiding disturbance in Argyle Canyon (Link U413).

The lands crossed by the route of Alternative COUT-C (the Agency Preferred Alternative) and Variation 1 are a mixture of BLM-, state-administered, and privately owned lands. Primary resource issues in this area include views from residences in Argyle Canyon, impacts on Class A (Argyle Canyon) scenery, special status plant potential habitat, Mexican spotted owl potential habitat, and non-compliance with BLM VRM Class III objectives.

Table F-34 is a comparison of substantive resource issues for each route variation. Table F-35 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-36 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-37 to F-44 describe the inventory, impacts, and plan compliance for each resource in a side-by-side comparison of route variations.

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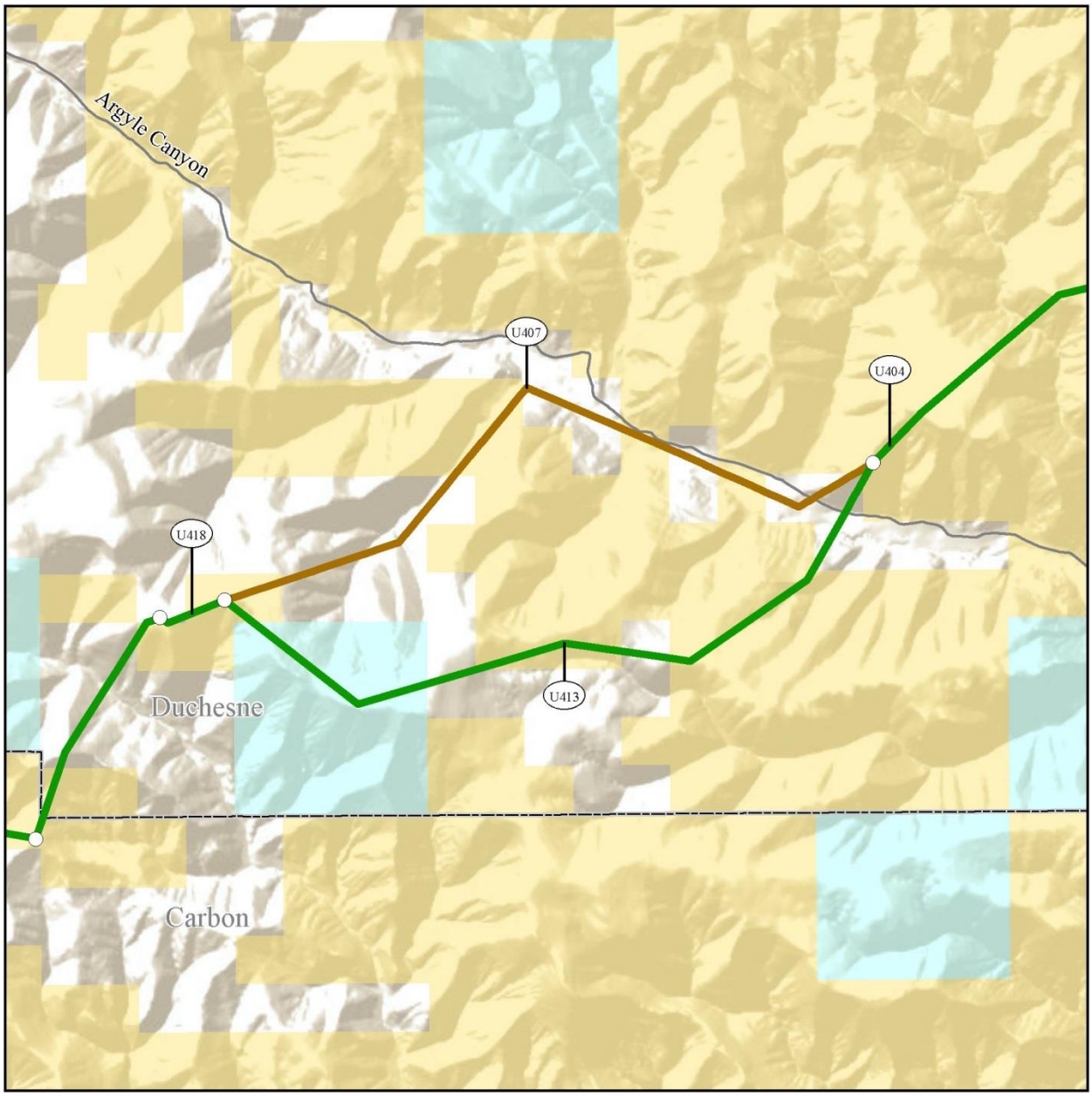

Map F-5

Argyle Ridge

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative COUT-C
- Variation 1
- Link Number
- Link Node

Land Ownership

- Bureau of Land Management
- State Land
- Private Land

General Reference

- Other Road
- County Boundary

SOURCES:
Land Jurisdiction, BLM 2013;
Highways, Roads, and Railroads, ESRI 2013;
County Boundaries, ESRI 2013

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.

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

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TABLE F-34 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.1 for this alternative route.	Same as COUT-C
Earth Resources (miles crossed) (for detailed information, refer to Table F-37)	▪ 3.7 miles of oil and gas leases ▪ 2.9 miles of moderate landslide susceptibility	▪ 3 miles of oil and gas leases ▪ 2.8 miles of moderate landslide susceptibility
Paleontological Resources (for detailed information, refer to Table F-38)	Entire route crosses area with PFYC 4	Entire route crosses area with PFYC 4
Water Resources (for detailed information, refer to Table F-39)	No critical issues	No critical issues
Biological Resources		
Vegetation (for detailed information, refer to Table F-40)	No critical issues	No critical issues
Special Status Plants (for detailed information, refer to Table F-40)	Crosses Grahams and White River penstemon potential habitat and would be located in Argyle Canyon, which may contain suitable habitat for Ute ladies' tresses.	Argyle Canyon would likely be spanned, which may contain suitable habitat for Ute ladies' tresses.
Wildlife (for detailed information, refer to Table F-40)	No critical issues	No critical issues
Special Status Wildlife (for detailed information, refer to Table F-40)	Moderate impacts on Mexican spotted owl potential habitat	Similar to COUT-C
Migratory Birds (for detailed information, refer to Table F-40)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.9 for this alternative route.	Same as COUT-C
Fish and Aquatics (for detailed information, refer to Table F-40)	No critical issues	No critical issues

TABLE F-34 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Land Use		
Land Use (for detailed information, refer to Table F-41)	None	Crosses 0.8 mile of irrigated farmland resulting in a moderate impact.
Parks, Preservation, and Recreation (for detailed information, refer to Table F-42)	None	None
Transportation and Access (for detailed information, refer to Table F-42)	None	None
Congressional Designations (for detailed information, refer to Table F-42)	None	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-42)	None	None
Lands with Wilderness Characteristics (for detailed information, refer to Table F-42)	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-42)	None	None
Visual Resources (for detailed information, refer to Table F-43)	▪ High impact on Class A (Argyle Canyon) and Class B scenery ▪ High impact on views from residence in Argyle Canyon, Argyle Canyon Road, and the western edge of Nine Mile Canyon ACEC	▪ Additional high impact on Class A scenery (Argyle Canyon) ▪ Longer duration high impact on views from residence in Argyle Canyon and Argyle Canyon Road ▪ One plan amendment (VFO4)
Cultural Resources (for detailed information, refer to Table F-44)	▪ No sites identified by the Class I inventory ▪ Crosses 0.0 mile of high cultural resource intensity ▪ Key resources include Argyle Canyon Rock Art (Archaeological Sites) and Nine Mile Canyon ACEC; Argyle Canyon Rock Art (Archaeological Sites) is in the Project APE ▪ High potential for encountering numerous unrecorded archaeological sites (e.g., rock art, granaries, ceremonial sites, and habitations) and historic coal mining sites along Argyle Canyon and the vicinity of Nine Mile Canyon	Same as COUT-C

TABLE F-34 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.21 for this alternative route.	Same as COUT-C
Social and Economic Conditions	Effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.22 for this alternative route.	Same as COUT-C
Public Health (EMF)	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.23 for this alternative route.	Same as COUT-C

TABLE F-35 ARGYLE RIDGE – 500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Jurisdiction (miles crossed)		
BLM	2.0	1.5
USFS	0.0	0.0
NPS	0.0	0.0
State	1.1	0.0
Tribal	0.0	0.0
Private	1.0	2.4

TABLE F-36 ARGYLE RIDGE – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Temporary disturbance (acres)[1, 4]	39	38
Permanent disturbance (acres)[2, 4]	41	47
Total disturbance (acres)	80	85
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	70	67
Access Roads		
Existing (miles)[5]	3.1	2.4
New (miles)[6]	1.0	1.6

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

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

TABLE F-37 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Geologic Hazards		
Affected environment	▪ Crosses no mine subsidence ▪ Crosses low flood hazard ▪ Crosses 2.9 miles of moderate landslide susceptibility	▪ Crosses no mine subsidence ▪ Crosses low flood hazard ▪ Crosses 2.8 miles of moderate landslide susceptibility
Environmental consequences	Mostly low or moderate impacts	Same as COUT-C
Selective mitigation	3	3
Cumulative effects	Could be incremental impacts on areas prone to landslides	Same as COUT-C
Soil Resources		
Affected environment (mile crossed)	▪ No water erosion ▪ Crosses 4.1 miles of low susceptibility to wind erosion ▪ No Prime or Unique Farmland	▪ No water erosion ▪ Crosses 4.0 miles of low susceptibility to wind erosion ▪ No Prime or Unique Farmland
Environmental consequences	Low impacts on soil resources	Low impacts on soil resources
Selective mitigation	1, 3, 7, and 11	1, 3, 7, and 11
Cumulative effects	None	None
Mineral Resources		
Affected environment	▪ Crosses no active mines or producing wells ▪ Crosses 3.7 miles of oil and gas leases	▪ Crosses no active mines or producing wells ▪ Crosses 3 miles of oil and gas leases
Environmental consequences	Low impacts on mineral resources	Low impacts on mineral resources
Selective mitigation	None	None
Cumulative effects	There could be incremental impacts on oil and gas leases	Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-38 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Affected Environment		
PFYC formations (miles crossed)	4.1 miles with PFYC 4	4.0 miles with PFYC 4
Known locality density within 1.0 mile of the centerline	Low	Low

TABLE F-38 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Environmental Consequences		
PFYC formations (miles crossed)	Entire route crosses area with PFYC of 4	Entire route crosses area with PFYC of 4
Percent of route crossing PFYC 4	100	100
Impacts on paleontological resources anticipated	Impacts could be high	Impacts could be high
Selective mitigation	None	None
Cumulative effects	There could be incremental impacts on paleontological resources	Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-39 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Affected Environment		
Class 1: Outstanding waters	None	None
Class 4: State-listed impaired waters	None	None
Palustrine emergent wetlands	1 crossing	2 crossings
Palustrine forested overstory wetlands	None	None
Palustrine scrub/shrub wetlands	None	None
Perennial stream/river	1 crossing	1 crossing
Intermittent stream	None	8 crossings
Riparian areas	None	None
Swamp/marsh/estuary	None	None
Well/spring	None	None
Environmental Consequences		
Residual impacts (miles crossed)	0.1 mile of moderate impacts 0.6 mile of low impacts	0.2 mile of moderate impacts 1.7 miles of low impacts
Selective mitigation	None	None
Cumulative effects	▪ Vicinity of perennial water resources in Argyle Canyon ▪ Could also be affected by the proposed TransWest Express transmission line and existing agricultural development ▪ Minor incremental impact on water resources in the area	▪ Would likely span Argyle Canyon and the perennial water resources located in the canyon; incremental impact of the Project on these resources would be minimal or would not occur

TABLE F-39 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-40 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Vegetation		
Affected environment (miles of vegetation communities crossed)	▪ 0.1 mile of alpine ▪ 0.8 mile of aspen ▪ 0.2 mile of barren ▪ 1.2 miles of big sagebrush ▪ 0.3 mile of grassland ▪ 0.1 mile of montane forest ▪ 0.1 mil of mountain shrub ▪ 1.2 mile of pinyon-juniper ▪ 0.1 mile of wetland	▪ 1.2 miles of agriculture ▪ 0.2 mile of alpine ▪ 0.1 mile of aspen ▪ 0.3 mile of big sagebrush ▪ 0.1 mile of grassland ▪ 1.2 miles of montane forest ▪ 0.3 mile of mountain shrub ▪ 0.5 mile of pinyon-juniper ▪ 0.1 mile of wetland
Environmental consequences (miles crossed)	▪ 2.9 miles of moderate impacts ▪ 1.2 miles of low-moderate impacts	▪ 2.3 miles of moderate impacts ▪ 0.5 mile of low-moderate impacts ▪ 1.2 miles of low impacts
Selective mitigation	1, 2, 4, and 7	1, 2, 4, and 7
Cumulative effects	The Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on vegetation in the area.	The Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on vegetation in the area.
Special Status Plants		
Affected environment (miles crossed)	▪ 1.3 miles of Grahams penstemon potential habitat ▪ 1.3 miles of White River penstemon potential habitat ▪ Wetlands in Argyle Canyon may provide suitable habitat for Ute ladies'-tresses; however, these resources were not identified as directly crossed in this area based on the methods used to conduct the EIS analysis	▪ No identifiable special status plant habitat crossed based on the methods used to conduct the EIS analysis. ▪ Wetlands in Argyle Canyon may provide suitable habitat for Ute ladies tresses
Environmental consequences	Crosses 1.3 miles of low residual impacts	None identified using the methods used to analyze impacts in the EIS.
Selective mitigation	2 and 7	None

TABLE F-40 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Cumulative effects	▪ Vicinity of potential Ute ladies' tresses habitat in Argyle Canyon ▪ Could be affected by the proposed TransWest Express transmission line and existing agricultural development ▪ Minor incremental impact on these habitats and habitats for other special status plants	▪ Likely span Argyle Canyon and the potential special status plant habitats located in the canyon; incremental impact of the project on these resources would be minimal or would not occur
Wildlife		
Affected environment (miles crossed)	▪ 3.3 miles of elk crucial winter range ▪ 3.7 miles of moose crucial winter range ▪ 3.2 miles of mule deer crucial winter range	▪ 1.0 mile of elk crucial winter range ▪ 3.8 miles of moose crucial winter range ▪ 0.5 mile of mule deer crucial winter range
Environmental consequences (miles crossed)	3.7 miles of low impacts	3.8 miles of low impacts
Selective mitigation	12 and 15	12 and 15
Cumulative effects	Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on wildlife in the area	Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on wildlife in the area
Special Status Wildlife		
Affected environment (miles crossed)	2.7 miles of Mexican spotted owl potential habitat	4.0 miles of Mexican spotted owl potential habitat
Environmental consequences (miles crossed)	2.7 miles of moderate impacts	4.0 miles of moderate impacts
Selective mitigation	2, 4, 5, 7, and 12	2, 4, 5, 7, and 12
Cumulative effects	Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on Mexican spotted owl habitat	Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on Mexican spotted owl habitat
Fish and Aquatics		
Affected environment	No specific resources analyzed in detail in the EIS were identified in this area. However, water resources present in the area may provide habitats for fish and aquatic resources.	Same as COUT-C
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-41 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Utility Corridors (miles)		
Designated (BLM and USFS)	0.0	0.0
West-wide Energy Corridor	0.0	0.0
Parallel Linear Facilities (miles)		
500kV	0.0	0.0
345kV	0.0	0.0
138kV	0.0	0.0
230kV	0.0	0.0
Pipeline	0.0	0.0
Existing Land Use		
Affected environment and consequences	No key impacts	Crosses 0.8 mile of irrigated farmland resulting in a moderate residual impact
Selective mitigation	None	11
Cumulative effects	None	The short-term cumulative effects, in addition to the past and present actions and RFFAs, potential for limited access to fields or agriculture operations during construction. The long-term cumulative effects would be utility and industrial infrastructure that potentially could reduce the amount of and/or alter agriculture production lands.
Authorized Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Future Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Zoning and General Plan Management Direction[1]		
Generalized permitting	No permitting requirements	No permitting requirements
Selective mitigation	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No
NOTES: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.		

TABLE F-42 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; CONGRESSIONAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Parks, Preservation, and Recreation		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Transportation and Access		
Affected environment	Crosses Argyle Canyon Road and other roadways	Crosses Argyle Canyon Road and other roadways
Environmental consequences	Anticipate moderate impacts where temporary closures and/or delays would occur from construction of the Project when crossing roadways (e.g. Argyle Canyon Road). See Section 3.2.13 for more information.	Same as COUT-C
Selective mitigation	5 and 9	5 and 9
Cumulative effects	Not applicable	Not applicable
Congressional Designations		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Special Designations and Other Management Areas		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Lands with Wilderness Characteristics		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas		
Affected environment	None	None
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-43 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Affected Environment		
Scenery (miles crossed)	▪ 0.7 mile of Class A ▪ 3.4 miles of Class B	▪ 2.3 miles of Class A ▪ 1.7 miles of Class B
High concern viewers (miles crossed)	▪ 0.3 mile of views within 0.5 mile ▪ 1.7 mile of views between 0.5 mile and 1.0 mile	▪ 1.3 miles of views within 0.5 mile ▪ 1.1 miles of views between 0.5 mile and 1.0 mile
Moderate concern viewers (miles crossed)	▪ 0.8 mile of views within 0.5 mile ▪ 0.6 mile of views between 0.5 mile and 1.0 mile	▪ 2.3 miles of views within 0.5 mile ▪ 0.7 mile of views between 0.5 mile and 1.0 mile
Federal Agency Visual Management Objectives	2.0 miles of BLM VRM Class III	1.7 miles of BLM VRM Class III
Environmental Consequences		
Scenery	High impact on Class A (Argyle Canyon) and Class B scenery	Additional high impacts on Class A scenery (Argyle Canyon)
Residences	High impact on views from residence in Argyle Canyon	Longer duration high impact on view from residence in Argyle Canyon
Travel routes	High impact on views from Argyle Canyon Road	Longer duration high impact on views from Argyle Canyon Road
Recreation areas	No key impacts	No key impacts
Special designations	High impact on views from Nine Mile Canyon ACEC	Similar to COUT-C
Selective mitigation	3, 4, and 5	3, 4, and 5
Cumulative effects	Colocation with the TransWest Express transmission line would consolidate effects on scenery and on views	Similar to COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	Yes, VFO4

TABLE F-44 ARGYLE RIDGE – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U413 (4.1 miles)**	**Variation 1 Link U407 (4.0 miles)**
Affected environment	▪ No sites were identified by the Class I inventory. ▪ There are no known sites in the Project APE ▪ Key resources include Argyle Canyon Rock Art (Archaeological Sites) and Nine Mile Canyon ACEC; Argyle Canyon Rock Art (Archaeological Sites) is in the Project APE ▪ No NHTs or potential NHTs, NHLs, or TCPs were identified ▪ High potential for encountering numerous unrecorded archaeological sites (e.g., rock art, granaries, ceremonial sites, and habitations) and historic coal mining sites along Argyle Canyon and the vicinity of Nine Mile Canyon	Same as COUT-C
Environmental consequences	0.0 mile of high, moderate, and low cultural resource intensity	Same as COUT-C
Selective mitigation	Specific mitigation measures for historic properties, if encountered, would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies	Same as COUT-C
Cumulative effects	The addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources	Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

Camp Timberlane/Argyle Canyon

F.6 Camp Timberlane/Argyle Canyon

This variation area is located 10 miles north of Helper, Utah and directly north of Emma Park between Argyle Canyon and Soldier Summit (Map F-6).

Early in 2014, the Church of Jesus Christ of Latter Day Saints (the LDS Church) contacted the BLM, USFS, and Applicant to inform them that the alignment of the route of Alternative COUT-C (the Agency Preferred Alternative) as described in the Draft EIS crosses an area of privately owned parcels operated by the LDS Church as a youth camp, Camp Timberlane (Link U437, U511). In subsequent meetings, representatives of the LDS Church realty division requested a route variation be developed that avoids crossing through the camp.

South and west of Camp Timberlane is a subdivision developed with seasonal residences. (Affected links include primarily U520, U434, U439, U512, and U443.) Many of the landowners in the subdivision organized and protested the location of the alternative routing, and attended the public open house meeting for the Draft EIS in Price, Utah. In August, the landowners requested a field trip with the Applicant to review a potential routing variation for the proposed transmission line that would be acceptable to the landowners.

Considering routing to avoid Camp Timberlane and considering the routing identified with the Argyle Canyon landowners, the Applicant developed several route variations along the path of the Agency Preferred Alternative route for environmental review. A series of route options were developed and through review of these route options, six refined route variations were established to traverse this area to balance resource impacts. Once the route variations were developed, the BLM analyzed the effects of and compared the alternative route variations. The alignment that emerged from the analysis with the least impact was, starting from the east, Links U408, U411, U417, U445, U504, U508, U514, U516, and U560; which is responsive to both the LDS Church and the Argyle Canyon landowners concerns.

The lands crossed by the route of Alternative COUT-C (the Agency Preferred Alternative) and the route variations are mostly privately owned with areas of BLM-, USFS-, and state-administered lands. Primary resource issues in this area include: Camp Timberlane and Crescent Regional Camp, dispersed residences and summer cabins, greater sage-grouse leks in Emma Park, special status plant potential habitat, IRA roadless and wilderness characteristics, and the Reservation Ridge Scenic Backway.

Table F-45 is a comparison of substantive resource issues for each route variation. Table F-46 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-47 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-48 to F-55 describe the inventory, impacts, and plan compliance for each resource in a side-by-side comparison of route variations. The length and links of each routing options are as follows:

Route/Route Variation	Links	Length (miles)
Alternative COUT-C	U408, U411, U417, U445, U504, U508, U514, U516, U560	35.3
Variation 1	U408, U411, U415, U417, U441, U443, U502, U508, U514, U516, U560	34.4
Variation 2	U408, U411, U417, U415, U441, U439, U512, U514, U540, U515, U560	34.7
Variation 3	U409, U414, U417, U445, U504, U508, U514, U516, U560	35.3
Variation 4	U409, U419, U437,U511, U520, U514, U516, U560	34.6
Variation 5	U409, U419, U437, U511, U513, U515, U560	33.5

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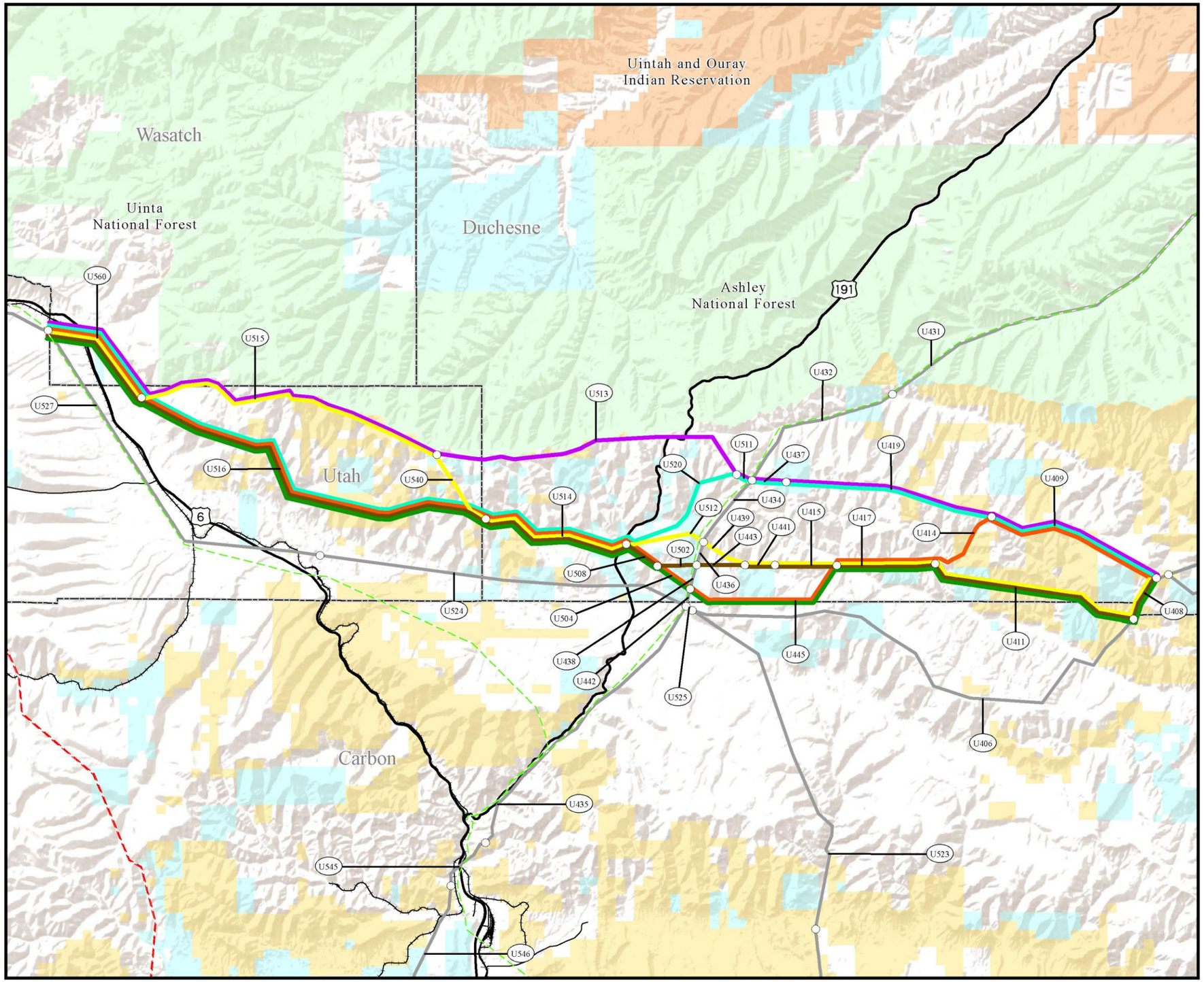

Map F-6

Camp Timberlane/ Argyle Canyon

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative COUT-C
- Variation 1
- Variation 2
- Variation 3
- Variation 4
- Variation 5
- All Other Alternative Routes
- Link Number
- Link Node

Land Ownership

- Bureau of Land Management
- Indian Reservation
- U.S. Forest Service
- State Land
- Private Land

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- Railroad
- U.S. Highway
- State Highway
- Other Road
- County Boundary

SOURCES:
Land Jurisdiction, BLM 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; County Boundary, ESRI 2013;
U.S. Forest Service Boundary, USFS 2006

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Alternative routes are graphically depicted on map and, in most cases, share centerline alignment in common areas.

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

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TABLE F-45
CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS BY RESOURCE

Resource	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.1 for this alternative route.	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Earth Resources (miles crossed) (for detailed information, refer to Table F-48)	▪ 0.1 mile of Prime Farmland ▪ 2.7 miles of moderate susceptibility to water erosion ▪ 1.4 miles of moderate susceptibility to wind erosion. ▪ 22.4 miles of moderate landslide susceptibility. ▪ 9.7 miles of oil and gas leases	▪ 0.1 mile of Prime Farmland. ▪ 2.2 miles of moderate susceptibility to water erosion and 1.4 miles of moderate susceptibility to wind erosion ▪ 22.6 miles of moderate landslide susceptibility ▪ 9.6 miles of oil and gas leases	▪ 0.1 mile of Prime Farmland ▪ 2.0 miles of moderate susceptibility to water erosion ▪ 2.0 miles of moderate susceptibility to wind erosion ▪ 23.8 miles of moderate landslide susceptibility. ▪ 11.5 miles of oil and gas lease	▪ 2.1 miles of moderate susceptibility to water erosion ▪ 0.7 mile of moderate susceptibility to wind erosion. ▪ 20.3 miles of moderate landslide susceptibility ▪ 7.7 miles of oil and gas leases	▪ 1.6 miles of moderate susceptibility to water erosion ▪ 0.7 mile of moderate susceptibility to wind erosion ▪ 18.8 miles of moderate landslide susceptibility ▪ 6.4 miles of oil and gas leases ▪ 0.2 mile with active mines or producing wells	▪ 1.5 miles of moderate susceptibility to water erosion ▪ 1.3 miles of moderate susceptibility to wind erosion ▪ 15.9 miles of moderate landslide susceptibility ▪ 7.0 miles of oil and gas leases ▪ 0.2 mile with active mines or producing wells
Paleontological Resources (for detailed information, refer to Table F-49)	Almost entire route crosses area in PFYC of 4	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Water Resources (for detailed information, refer to Table F-50)	No critical impacts	No critical impacts	No critical impacts	No critical impacts	No critical impacts	No critical impacts
Biological Resources						
Vegetation (for detailed information, refer to Table F-51)	No critical impacts	No critical impacts	No critical impacts	No critical impacts	No critical impacts	No critical impacts
Special Status Plants (for detailed information, refer to Table F-51)	None	None	None	Crosses Grahams and White River penstemon potential habitat	Crosses Grahams and White River penstemon potential habitat	Crosses Grahams and White River penstemon potential habitat
Wildlife (for detailed information, refer to Table F-51)	No critical impacts	No critical impacts	No critical impacts	No critical impacts	No critical impacts	No critical impacts
Special Status Wildlife (for detailed information, refer to Table F-51)	1.3 miles of high impacts on greater sage-grouse priority habitat (in an area heavily affected by existing infrastructure) and 4.1 miles of moderate impacts on Mexican spotted owl potential habitat This route is located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	1.3 miles of high impacts on greater sage-grouse priority habitat (in an area heavily affected by existing infrastructure) and 5.5 miles of moderate impacts on Mexican spotted owl potential habitat This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	1.3 miles of high impacts on greater sage-grouse priority habitat (in an area heavily affected by existing infrastructure) and 5.3 miles of moderate impacts on Mexican spotted owl potential habitat This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	1.3 miles of high impacts on greater sage-grouse priority habitat (in an area heavily affected by existing infrastructure) and 1.8 miles of moderate impacts on Mexican spotted owl potential habitat This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	1.3 miles of high impacts on greater sage-grouse priority habitat (in an area heavily affected by existing infrastructure) and 4.1 miles of moderate impacts on Mexican spotted owl potential habitat This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	1.3 miles of high impacts on greater sage-grouse priority habitat (in an area heavily affected by existing infrastructure) and 1.3 miles of moderate impacts on Mexican spotted owl potential habitat This route would avoid all areas within 4 miles of sage-grouse leks in the Emma Park area.

TABLE F-45
CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS BY RESOURCE

Resource	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
Migratory Birds (for detailed information, refer to Table F-51)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.9 for this alternative route.	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C
Fish and Aquatics (for detailed information, refer to Table F-51)	None	None	None	None	None	None
Land Use						
Land Use (miles crossed) (for detailed information, refer to Table F-52)	0.1 mile of moderate impacts from crossing residential properties	0.1 mile of moderate impacts from crossing residential properties	0.2 mile of moderate impacts from crossing residential properties	0.1 mile of moderate impacts from crossing residential properties	0.2 mile of moderate impacts from crossing residential properties	0.6 mile of moderate impacts from crossing residential properties
Parks, Preservation, and Recreation areas (miles crossed) (for detailed information, refer to Table F-53)	▪ 1.1 miles of semi-primitive non-motorized recreation opportunity spectrum ▪ 0.2 mile of the Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway	▪ 1.1 miles of semi-primitive non-motorized recreation opportunity spectrum ▪ 0.2 mile of the Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway	▪ 0.6 mile of the Church of Jesus Christ of Latter-Day Saints Crescent Regional Recreational Camp ▪ 1.1 miles of semi-primitive non-motorized recreation opportunity spectrum ▪ 1.8 miles of the Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway and Reservation Ridge Scenic Backway	▪ 0.2 mile of the Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway	▪ 1.0 mile of the Church of Jesus Christ of Latter-Day Saints Camp Timberlane Recreational Camp ▪ 0.2 mile of the Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway	▪ 1.6 mile of the Church of Jesus Christ of Latter-Day Saints Camp Timberlane Recreational Camp ▪ 4.2 miles of the Dinosaur Diamond Prehistoric Byway and Indian Canyon Scenic Byway and Reservation Ridge Scenic Backway
Transportation and Access (for detailed information, refer to Table F-53)	None	None	None	None	None	None
Congressional Designations (for detailed information, refer to Table F-53)	None	None	None	None	None	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-53)	None	None	None	None	None	None
Lands with Wilderness Characteristics (for detailed information, refer to Table F-53)	None	None	None	None	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-53)	None	None	Low impacts on Soldier Creek Inventoried Roadless Area (IRA)	None	None	Moderate impacts on IRA 0401012 and low impacts on Soldier Creek IRA

TABLE F-45
CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS BY RESOURCE

Resource	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
Visual Resources (for detailed information, refer to Table F-54)	▪ High impact on Class B scenery ▪ High impact on views from residences (Minnie Maud Creek, U.S. Highway 191, Willow Creek, and Soldier Summit), Dinosaur Diamond/Indian Canyon Scenic Byways (U.S. Highway 191), and Crescent Regional Recreation Camp	▪ Similar impact on scenery as COUT-C ▪ Similar impacts on views as COUT-C except for high impact on views from residences on Minnie Maud Ridge	▪ Similar impacts on scenery as COUT-C ▪ Similar impacts on views as COUT-C except for high impact on views from the Reservation Ridge Scenic Backway and longer duration views from the Crescent Regional Recreation Camp ▪ One plan amendment (ANF2)	▪ Decreased impacts on scenery compared to COUT-C ▪ Similar impacts on views as COUT-C	▪ Similar impacts on scenery as COUT-C ▪ High impact on views from residences (Argyle Ridge, U.S. Highway 191, Willow Creek, and Soldier Summit), Dinosaur Diamond/Indian Canyon Scenic Byways (U.S. Highway 191), Camp Timberlane, and Crescent Regional Recreation Camp	▪ Greater impacts on scenery as compared to COUT-C ▪ High impact on views from residences (Argyle Ridge, Argyle Canyon, Reservation Ridge, and Soldier Summit), Dinosaur Diamond/Indian Canyon Scenic Byways (U.S. Highway 191), Reservation Ridge Scenic Backway, Argyle Canyon Road, Avintaquin Campground, Camp Timberlane, and Crescent Regional Recreation Camp ▪ Three plan amendments (ANF1, ANF2, and VFO5)
Cultural Resources (for detailed information, refer to Table F-55)	▪ 39 sites identified by the Class I inventory; no known sites in the Project APE ▪ 0.0 mile of high cultural resource intensity ▪ Unrecorded segments of the U.S. Highway 6 and a standard gauge railroad are crossed by Link U560. The railroad, formerly part of the Utah and Pleasant Valley Railway ([U&PV]1879-1882), the Denver and Rio Grande Western Railway (1882-1889), and the Rio Grande Western Railway (1890), is currently owned by the Union Pacific (Central Corridor) ▪ Key resources include Argyle Canyon Rock Art (Archaeological Sites), Soldier Summit, U.S. Highway 6, the Emma Park Road, and the historic standard gauge railroad owned by the Union Pacific; of these resources, only unrecorded segments of the U.S. Highway 6 and the railroad are in the Project APE ▪ High potential for encountering numerous unrecorded archaeological sites (primarily rock art) and historic coal mining sites along Minnie Maud Creek and the vicinity of Argyle Canyon	▪ Same as COUT-C	▪ 21 sites identified by the Class I inventory; no known sites in the Project APE ▪ 0.0 mile of high cultural resource intensity ▪ Same unrecorded historic linear sites are crossed ▪ Same key resources as COUT-C with the exception of the Emma Park Road ▪ Same potential for encountering unrecorded cultural resources	▪ Same as COUT-C	▪ 37 sites identified by the Class I inventory; no known sites in the Project APE ▪ 0.0 mile of high cultural resource intensity ▪ Same unrecorded historic linear sites are crossed ▪ Same key resources as Variation 2 ▪ Same potential for encountering unrecorded cultural resources	▪ 37 sites identified by the Class I inventory; no known sites in the Project APE ▪ 0.0 mile of high cultural resource intensity ▪ Same unrecorded historic linear sites are crossed ▪ Same key resources as Variation 2 with the exception of Argyle Canyon Rock Art (Archaeological Sites), which is in the Project APE ▪ Same potential for encountering unrecorded cultural resources
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.21 for this alternative route.	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C

TABLE F-45
CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS BY RESOURCE

Resource	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
Social and Economic Conditions	Effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.22 for this alternative route.	Same as COUT-C	Same as COUT-C, except 23 additional residences are located within a quarter mile and 6 additional residences within a tenth of a mile of Variation 2.	Same as COUT-C	Same as COUT-C, except 27 additional residences are located within a quarter mile and 13 additional residences within a tenth of a mile of Variation 4.	Same as COUT-C, except 32 additional residences are located within a quarter mile and 17 additional residences within a tenth of a mile of Variation 5.
Public Health (EMF)	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.23 for this alternative route.	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C

TABLE F-46
CAMP TIMBERLANE/ARGYLE CANYON – 500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION

Focus of Comparison	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
Jurisdiction (miles crossed)						
BLM	6.8	6.8	7.5	5.2	5.8	9.3
USFS	0.0	0.0	1.4	0.0	0.0	1.8
NPS	0.0	0.0	0.0	0.0	0.0	0.0
State	5.3	3.6	4.0	3.9	4.2	1.4
Tribal	0.0	0.0	0.0	0.0	0.0	0.0
Private	23.2	24.0	21.8	26.2	24.6	21.0

TABLE F-47
CAMP TIMBERLANE/ARGYLE CANYON – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS

Focus of Comparison	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
Temporary disturbance (acres)[1, 4]	369	360	363	369	362	352
Permanent disturbance (acres)[2, 4]	392	379	413	326	263	294
Total disturbance (acres)	761	739	776	695	625	645
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	566	550	535	573	671	560
Access Roads						
Existing (miles)[5]	14.2	14.1	14.1	19.8	27.0	24.6
New (miles)[6]	21.1	20.3	20.6	15.5	7.6	8.9

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

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

TABLE F-48 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Geologic Hazards						
Affected environment (miles crossed)	▪ No mine subsidence ▪ Low susceptibility to flood hazard ▪ 22.4 miles of moderate susceptibility for landslides	▪ No mine subsidence ▪ Low susceptibility to flood hazard ▪ 11.8 miles of moderate susceptibility for landslides	▪ No mine subsidence ▪ Low susceptibility to flood hazard ▪ 10.9 miles of moderate susceptibility for landslides	▪ No mine subsidence ▪ Low susceptibility to flood hazard ▪ 15 miles of moderate susceptibility for landslides	▪ No mine subsidence ▪ Low susceptibility to flood hazard ▪ 15.8 miles of moderate susceptibility for landslides	▪ No mine subsidence ▪ Low susceptibility to flood hazard ▪ 17.6 miles of moderate susceptibility for landslides
Environmental consequences	Moderate susceptibility for landslides	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Selective mitigation	3	3	3	3	3	3
Cumulative effects	Could have incremental impacts on areas prone to landslides	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Soil Resources						
Affected Environment (miles crossed)	▪ 2.7 miles of moderate susceptibility to water erosion ▪ 1.4 miles of moderate susceptibility to wind erosion ▪ 0.1 mile of Prime or Unique Farmland	▪ 2.2 miles of moderate susceptibility to water erosion ▪ 1.4 miles of moderate susceptibility to wind erosion ▪ 0.1 mile of Prime or Unique Farmland	▪ 1.6 miles of high and 2.0 miles of moderate susceptibility to water erosion ▪ 2.0 miles of moderate susceptibility to wind erosion ▪ 0.1 mile of Prime or Unique Farmland	▪ 2.1 miles of moderate susceptibility to water erosion ▪ 0.7 mile of moderate susceptibility to wind erosion ▪ No Prime or Unique Farmland	▪ 1.6 miles of moderate susceptibility to water erosion ▪ 0.7 mile of moderate susceptibility to wind erosion ▪ No Prime or Unique Farmland	▪ 1.8 miles of high and 1.5 miles of moderate susceptibility to water erosion ▪ 1.3 miles of moderate wind erosion ▪ No Prime or Unique Farmland

TABLE F-48 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Environmental consequences	Moderate impact to soils with wind and water erosion	Same as COUT-C	Most impacts on soils for wind and water erosion	Same as COUT-C	Lowest impacts on soils	Highest impacts on soils with high susceptibility to water erosion
Selective mitigation	2 and 7	2 and 7	2 and 7	2 and 7	2 and 7	2 and 7
Cumulative effects	Could have incremental impacts on soils with moderate susceptibility to wind and water erosion	Same as COUT-C	Could have incremental impacts on soils with moderate and high susceptibility to wind and water erosion	Same as COUT-C	Same as COUT-C	Could have incremental impacts on soils with moderate and high susceptibility to wind and water erosion
Mineral Resources						
Affected environment (miles crossed)	▪ Crosses no active mines or producing wells ▪ 9.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases	▪ Crosses no active mines or producing wells ▪ 9.6 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases	▪ Crosses no active mines or producing wells ▪ 11.5 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases	▪ Crosses no active mines or producing wells ▪ 7.7 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases	▪ 0.2 mile of active mines or producing wells ▪ 6.4 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases	▪ 0.2 mile of active mines or producing wells ▪ 7.0 miles of permitted mines, coal leases, oil and gas leases, or geothermal leases
Environmental consequences	Crosses the second greatest mileage of leases	Crosses the third greatest mileage of leases	Crosses the greatest mileage of leases	Crosses the fourth greatest mileage of leases	Crosses the least amount leases; crosses small area with producing wells	Crosses the fifth greatest mileage of leases; cross small area with producing wells
Selective mitigation	None	None	None	None	2 and 7	2 and 7
Cumulative effects	Could have incremental impacts on leases	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C

TABLE F-48 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Plan Compliance						
Plan amendment (Yes or No)	No	No	No	No	No	No

TABLE F-49 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Affected Environment						
PFYC formations	PFYC 2 and 4	PFYC 2 and 4	PFYC 2 and 4	PFYC 2 and 4	PFYC 2 and 4	PFYC 2 and 4
Known locality density within 1.0 mile of the centerline	Low	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Environmental Consequences						
PFYC formations (miles crossed)	34.1 miles of PFYC 4	33.2 miles of PFYC 4	33.5 miles of PFYC 4	34.1 miles of PFYC 4	33.4 miles of PFYC 4	32.3 miles of PFYC 4
Percent of route crossing PFYC 4	97	97	97	97	97%	96
Impacts on paleontological resources anticipated	Could have high impacts on paleontological resources	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Selective mitigation	None	None	None	None	None	None
Cumulative effects	Could have incremental impacts on paleontological resources	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Plan Compliance						
Plan amendment (Yes or No)	No	No	No	No	No	No

TABLE F-50
CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES

Focus of Comparison	Alternative COUT-C (35.3 miles)	Variation 1 (34.4 miles)	Variation 2 (34.7 miles)	Variation 3 (35.3 miles)	Variation 4 (34.6 miles)	Variation 5 (33.5 miles)
▪ Affected Environment						
Class 1: Outstanding waters	None	None	15 crossings	None	None	15 crossings
Class 4: State-listed impaired waters	None	None	None	None	None	None
Palustrine emergent wetlands	1 crossing	1 crossing	1 crossing	1 crossing	None	None
Palustrine forested overstory wetlands	None	None	None	None	None	None
Palustrine scrub/shrub wetlands	None	None	None	None	None	None
Perennial stream/river	15 crossings	14 crossings	22 crossings	15 crossings	9 crossings	13 crossings
Intermittent stream	24 crossings	26 crossings	32 crossings	22 crossings	18 crossings	20 crossings
Riparian areas	None	None	None	None	None	None
Swamp/marsh/estuary	None	None	None	None	None	None
Well/spring	None	None	None	None	None	None
Environmental Consequence						
Residual impacts (miles crossed)	▪ 1.7 miles of moderate impacts ▪ 7.7 miles of low impacts	▪ 1.5 miles of moderate impacts ▪ 7.2 miles of low impacts	▪ 1.7 miles of moderate impacts ▪ 7.8 miles of low impacts	▪ 1.7 miles of moderate impacts ▪ 7.1 miles of low impacts	▪ 1.0 mile of moderate impacts ▪ 6.4 miles of low impacts	▪ 0.9 mile of moderate impacts ▪ 4.6 miles of low residual impacts
Selective mitigation	1, 2, 7, and 11	1, 2, 7, and 11	1, 2, 7, and 11	1, 2, 7, and 11	1, 2, 7, and 11	1, 2, 7, and 11
Cumulative effects	Vicinity of the proposed TransWest Express transmission line, west of U.S. Highway 191, leading to minor incremental impacts on water resources in the area.	Similar to COUT-C	Similar to COUT-C	Vicinity of the proposed TransWest Express transmission line, except in proximity to U.S. Highway 191, leading to minor incremental impacts on water resources in the area.	Vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on water resources in the area.	Similar to Variation 4

TABLE F-50 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Plan Compliance						
Plan amendment (Yes or No)	No	No	No	No	No	No

TABLE F-51 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Vegetation						
Affected environment (miles of vegetation communities crossed)	▪ 0.1 mil of alpine ▪ 0.8 mile of aspen ▪ 0.8 mile of barren ▪ 16.1 miles of big sagebrush ▪ 0.4 mile of grassland ▪ 3.1 miles of montane forest ▪ 3.2 miles of mountain shrub ▪ 3.5 miles of pinyon-juniper ▪ 0.1 mile of shrub/shrub steppe	▪ 0.1 miles of alpine ▪ 7.2 miles of aspen ▪ 0.9 mile of barren ▪ 15.6 miles of big sagebrush ▪ 0.4 mile of grassland ▪ 3.6 miles of montane forest ▪ 3.4 miles of mountain shrub ▪ 3.1 miles of pinyon-juniper ▪ 0.1 mile of shrub/shrub steppe	▪ 5.1 miles of aspen ▪ 0.8 mile of barren ▪ 16.4 miles of big sagebrush ▪ 0.6 mile of grassland ▪ 4.8 miles of montane forest ▪ 3.9 miles of mountain shrub ▪ 3.0 miles of pinyon-juniper ▪ 0.1 mile of shrub/shrub steppe	▪ 0.1 mile of alpine ▪ 9.6 miles of aspen ▪ 0.5 mile of barren ▪ 16.0 miles of big sagebrush ▪ 0.6 mile of grassland ▪ 3.5 miles of montane forest ▪ 2.7 miles of mountain shrub ▪ 2.2 miles of pinyon-juniper ▪ 0.1 mile of shrub/shrub steppe	▪ 0.1 mile of alpine ▪ 10.5 miles of aspen ▪ 12.8 miles of big sagebrush ▪ 0.5 mile of grassland ▪ 6.9 miles of montane forest ▪ 2.4 miles of mountain shrub ▪ 1.3 miles of pinyon-juniper ▪ 0.1 mile shrub/shrub steppe	▪ 5.8 miles of aspen ▪ 15.2 miles of big sagebrush ▪ 0.7 mile of grassland ▪ 8.5 miles of montane forest ▪ 2.4 miles of mountain shrub ▪ 0.9 mile of pinyon-juniper
Environmental consequences (miles crossed)	▪ 31.7 miles of moderate impacts ▪ 3.6 miles of low-moderate impacts	▪ 31.2 miles of moderate impacts ▪ 3.2 miles of low-moderate impacts	▪ 31.6 miles of moderate impacts ▪ 3.1 miles of low-moderate impacts	▪ 33.0 miles of moderate impacts ▪ 2.3 miles of low-moderate impacts	▪ 33.2 miles of moderate impacts ▪ 1.4 miles of low-moderate impacts	▪ 32.6 miles of moderate impacts ▪ 0.9 mile of low-moderate impacts
Selective mitigation	1, 2, 4, and 7	1, 2, 4, and 7	1, 2, 4, and 7	1, 2, 4, and 7	1, 2, 4, and 7	1, 2, 4, and 7
Cumulative effects	Project would be located in the vicinity of the proposed TransWest Express transmission project, west of U.S.	Similar to COUT-C	Similar to COUT-C	The Project would be located in the vicinity of the proposed TransWest Express Transmission Project,	The Project would be located in the vicinity of the proposed TransWest Express Transmission Project	Similar to Variation 4

TABLE F-51 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	Highway 191, leading to minor incremental impacts on vegetation in the area.			except in proximity to U.S. Highway 191, leading to minor incremental impacts on vegetation in the area.	leading to minor incremental impacts on vegetation in the area.	
Special Status Plants						
Affected environment (miles crossed)	No identifiable special status plant habitat crossed	No identifiable special status plant habitat crossed	No identifiable special status plant habitat crossed	4.8 miles of Grahams penstemon potential habitat 4.8 miles of White River penstemon potential habitat	9.5 miles of Grahams penstemon potential habitat 9.5 miles of White River penstemon potential habitat	10.6 miles of Grahams penstemon potential habitat 10.6 miles of White River penstemon potential habitat
Environmental consequences (miles crossed)	None	None	None	4.8 miles of low impacts	9.5 miles of low impacts	10.6 miles of low impacts
Selective mitigation	None	None	None	2 and 7	2 and 7	2 and 7
Cumulative effects	None	None	None	Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on special status plants in the area	Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on special status plants in the area	Similar to Variation 4
Wildlife						
Affected environment (miles crossed)	▪ 15.9 miles of elk crucial winter range ▪ 1.5 miles of elk crucial year-long range ▪ 33.1 miles of moose crucial winter range ▪ 2.2 miles of moose crucial year-long range	▪ 14.7 miles of elk crucial winter range ▪ 1.5 miles of elk crucial year-long range ▪ 32.2 miles of moose crucial winter range ▪ 2.2 miles of moose crucial year-long	▪ Elk crucial summer range – 2.2 ▪ Elk crucial winter range – 11.8 ▪ Elk crucial year-long range – 1.5 ▪ Moose crucial winter range – 31.9	▪ 14.1 miles of elk crucial winter range ▪ 1.5 miles of elk crucial year-long range ▪ 33.1 miles of moose crucial winter range ▪ 2.2 miles of moose crucial year-long	▪ 9.8 miles of elk crucial winter range ▪ 1.5 miles of elk crucial year-long range ▪ 32.4 miles of moose crucial winter range ▪ 2.2 miles of moose crucial year-long	▪ 2.9 miles of elk crucial summer range ▪ 3.8 miles of elk crucial winter range ▪ 1.5 miles of elk crucial year-long range

TABLE F-51 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	▪ 2.2 miles of moose calving grounds ▪ 31.8 miles of mule deer crucial summer range ▪ 0.2 mile of mule deer crucial winter range	range ▪ 2.2 miles of moose calving grounds ▪ 30.9 miles of mule deer crucial summer range ▪ 0.2 mile of mule deer crucial winter range	▪ Moose crucial yearlong range – 0.6 ▪ Moose calving grounds – 0.6 ▪ Mule deer crucial summer range – 31.2 ▪ Mule deer crucial winter range – 0.2	range ▪ 2.2 miles of moose calving grounds ▪ 34.0 miles of mule deer crucial summer range ▪ 1.3 miles of mule deer crucial winter range	range ▪ 2.2 miles of moose calving grounds ▪ 33.3 miles of mule deer crucial summer range ▪ 1.3 miles of mule deer crucial winter range	▪ 30.0 miles of moose crucial winter range ▪ 0.6 mile of moose crucial year-long range ▪ 0.6 mile of moose calving grounds ▪ 32.2 miles of mule deer crucial summer range ▪ 1.3 miles of mule deer crucial winter range
Environmental consequences (miles crossed)	▪ 35.3 miles of low impacts	▪ 34.4 miles of low impacts	▪ 34.7 miles of low impacts	▪ 35.3 miles of low impacts	▪ 34.6 miles of low impacts	▪ 33.5 miles of low impacts
Selective mitigation	▪ 12 and 15	▪ 12 and 15	▪ 12 and 15	▪ 12 and 15	▪ 12 and 15	▪ 12 and 15
Cumulative effects	▪ Project would be located in the vicinity of the proposed TransWest Express transmission line, west of U.S. Highway 191, leading to minor incremental impacts on wildlife in the area.	▪ Similar to COUT-C	▪ Similar to COUT-C	▪ Project would be located in the vicinity of the proposed TransWest Express transmission line, except in proximity to U.S. Highway 191, leading to minor incremental impacts on wildlife in the area.	▪ Project would be located in the vicinity of the proposed TransWest Express transmission line leading to minor incremental impacts on wildlife in the area.	▪ Similar to Variation 4
Special Status Wildlife						
Affected environment (miles crossed)	▪ 4.1 miles of Mexican spotted owl potential habitat ▪ 1.3 miles of greater	▪ 5.5 miles of Mexican spotted owl potential habitat ▪ 1.3 miles of greater	▪ 5.3 miles of Mexican spotted owl potential habitat ▪ 1.3 miles of greater	▪ 1.8 miles of Mexican spotted owl potential habitat ▪ 1.3 miles of greater	▪ 2.9 miles of Mexican spotted owl potential habitat ▪ 1.3 miles of greater	▪ 1.3 miles of Mexican spotted owl potential habitat

TABLE F-51 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	sage-grouse priority habitat area (this area contains high densities of existing infrastructure (i.e., highways, railroads, powerlines, and residential development.) ▪ Note: Residents in Argyle Canyon area report observations of sage-grouse outside of mapped habitat in forested areas. These areas are not typical sage-grouse habitat, there have been no confirmed sage-grouse in this area, and this area contains Utah Division of Wildlife Resources (UDWR) designated blue grouse habitat ▪ This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route largely would be in a sparsely wooded area, topographically separated (but potentially visible)	sage-grouse priority habitat area (this area contains high densities of existing infrastructure (i.e., highways, railroads, powerlines, and residential development.) ▪ Note: Residents in Argyle Canyon area report observations of sage-grouse outside of mapped habitat in forested areas. These areas are not typical sage-grouse habitat, there have been no confirmed sage-grouse in this area, and this area contains UDWR designated blue grouse habitat ▪ This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically	sage-grouse priority habitat area (this area contains high densities of existing infrastructure (i.e., highways, railroads, powerlines, and residential development.) ▪ Note: Residents in Argyle Canyon area report observations of sage-grouse outside of mapped habitat in forested areas. These areas are not typical sage-grouse habitat, there have been no confirmed sage-grouse in this area, and this area contains UDWR designated blue grouse habitat ▪ This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	sage-grouse priority habitat area (this area contains high densities of existing infrastructure (i.e., highways, railroads, powerlines, and residential development.) ▪ Note: Residents in Argyle Canyon area report observations of sage-grouse outside of mapped habitat in forested areas. These areas are not typical sage-grouse habitat, there have been no confirmed sage-grouse in this area, and this area contains UDWR designated blue grouse habitat ▪ This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically	sage-grouse priority habitat area (this area contains high densities of existing infrastructure (i.e., highways, railroads, powerlines, and residential development.) ▪ Note: Residents in Argyle Canyon area report observations of sage-grouse outside of mapped habitat in forested areas. These areas are not typical sage-grouse habitat, there have been no confirmed sage-grouse in this area, and this area contains UDWR designated blue grouse habitat ▪ This route would be located within 4 miles of sage-grouse leks in the Emma Park area, but outside of designated habitats. The route would largely be in a sparsely wooded area, topographically separated (but potentially visible) from sage-grouse habitats.	▪ 4.1 miles of Mexican spotted owl potential habitat ▪ 1.3 miles of greater sage-grouse priority habitat area (this area contains high densities of existing infrastructure (i.e., highways, railroads, powerlines, and residential development.) ▪ Note: Residents in Argyle Canyon area report observations of sage-grouse outside of mapped habitat in forested areas. These areas are not typical sage-grouse habitat, there have been no confirmed sage-grouse in this area, and this area contains UDWR designated blue grouse habitat ▪ This route would avoid all areas within 4 miles of sage-grouse leks in the Emma Park

TABLE F-51 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	from sage-grouse habitats.	separated (but potentially visible) from sage-grouse habitats.		separated (but potentially visible) from sage-grouse habitats.		area.
Environmental consequences (miles crossed)	▪ 1.3 miles of high impacts ▪ 4.1 miles of moderate impacts	▪ 1.3 miles of high impacts ▪ 5.5 miles of moderate impacts	▪ 1.3 miles of high impacts ▪ 5.3 miles of moderate impacts	▪ 1.3 miles of high impacts ▪ 1.8 miles of moderate impacts	▪ 1.3 miles of high impacts ▪ 2.9 miles of moderate impacts	▪ 1.3 miles of high impacts ▪ 1.3 miles of moderate impacts
Selective mitigation	2, 4, 5, 7, 12, 13, and 15	2, 4, 5, 7, 12, 13, and 15	2, 4, 5, 7, 12, 13, and 15	2, 4, 5, 7, 12, 13, and 15	2, 4, 5, 7, 12, 13, and 15	2, 4, 5, 7, 12, 13, and 15
Cumulative effects	In locations where the Project would be located in the vicinity of the proposed TransWest Express transmission line, minor incremental impacts on special status wildlife would occur, whereas areas not collocated with the TransWest Express transmission line would have similar impacts on those described for the Project.	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C
Fish and Aquatics						
Affected environment	No specific resources analyzed in detail in the EIS were identified in this area.	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Environmental consequences	None	None	None	None	None	None
Selective mitigation	None	None	None	None	None	None
Cumulative effects	None	None	None	None	None	None

TABLE F-51 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Plan Compliance						
Plan amendment (Yes or No)	No	No	No	No	No	No

TABLE F-52 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR LAND USE						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Utility Corridors (miles)						
Designated (BLM and USFS)	0.0	0.0	0.0	0.0	0.0	0.0
West-wide Energy Corridor	0.0	0.0	0.0	0.0	0.0	0.0
Parallel Linear Facilities (miles)						
500kV	0.0	0.0	0.0	0.0	0.0	0.0
345kV	0.0	0.0	0.0	0.0	0.0	0.0
138kV	1.3	1.2	1.3	1.3	1.3	1.3
230kV	0.0	0.0	0.0	0.0	0.0	0.0
Pipeline	0.0	0.0	0.0	0.0	0.0	0.0
Plan Compliance						
Plan amendment (Yes or No)	Yes, PFO5	Yes, PFO5	Yes, SLFO1 and PFO5	No	No	Yes, SLFO1
NOTES: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.						

TABLE F-53 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Parks, Preservation, and Recreation areas						
Affected environment and consequences (miles crossed)	▪ 1.1 miles of semi-primitive non-motorized recreation opportunity spectrum ▪ 0.2 mile of the Dinosaur Diamond Prehistoric Scenic Byway/Indian Canyon Scenic Byway.	▪ 1.1 miles of semi-primitive non-motorized recreation opportunity spectrum ▪ 0.2 mile Dinosaur Diamond Prehistoric Scenic Byway/Indian Canyon Scenic Byway and Reservation Ridge Scenic Backway.	▪ 0.6 mile of the Church of Jesus Christ of Latter-Day Saints Crescent Regional Recreational Camp resulting in a moderate impact ▪ 1.1 miles of semi-primitive non-motorized recreation opportunity spectrum ▪ 1.8 miles of Dinosaur Diamond Prehistoric Scenic Byway/Indian Canyon Scenic Byway	▪ 0.2 mile of Dinosaur Diamond Prehistoric Scenic Byway/Indian Canyon Scenic Byway	▪ 1.0 mile of the Church of Jesus Christ of Latter-Day Saints Camp Timberlane Recreational Camp resulting in a moderate impact. ▪ 0.2 mile of Dinosaur Diamond Prehistoric Scenic Byway/Indian Canyon Scenic Byway	▪ 1.6 miles of the Church of Jesus Christ of Latter-Day Saints Camp Timberlane Recreational Camp resulting in a moderate impact ▪ 4.2 miles of the Dinosaur Diamond Prehistoric Scenic Byway/Indian Canyon Scenic Byway and Reservation Ridge Scenic Backway
Selective mitigation	None	None	5 and 7	None	5 and 7	5, 7, and 9
Cumulative effects	The short-term cumulative effects of the Project crossing this Recreation Opportunity Spectrum (ROS) category, in addition to any past and present action and RFFA, would be potentially	The short-term cumulative effects of the Project crossing this ROS category, in addition to any past and present action and RFFA, would be potentially limited access to the ROS area	(See COUT-C and Variation 1 for ROS information) The short-term cumulative effects of the Project crossing the recreational camp, in addition to any past/present and	None	Similar to Variation 2	Similar to Variation 2

TABLE F-53 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	limited access to the ROS area and increased noise during construction actions. Long-term effects on the semi-primitive non-motorized ROS area are not anticipated	and increased noise during construction actions. Long-term effects on the semi-primitive non-motorized ROS area are not anticipated	RFFA actions, would potentially limit and/or hinder access to and/or in the recreation camp and increase noise during construction. The long-term cumulative effects would be additional industrial development in recreation camp, which could limit some recreational opportunities			
Transportation and Access						
Affected environment	Crosses U.S. Highways 191 and 6, other roadways, and a railroad.	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Environmental consequences	Moderate impacts would be anticipated where temporary closures and/or delays would occur from construction of the project when crossing roadways (e.g. U.S. Highway 191). See Section 3.2.13 for more information.	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C

TABLE F-53 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Selective mitigation	5 and 9	5 and 9	5 and 9	5 and 9	5 and 9	5 and 9
Cumulative effects	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Congressional Designations						
Affected environment and consequences	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts
Selective mitigation	None	None	None	None	None	None
Cumulative effects	None	None	None	None	None	None
Special Designations and Other Management Areas						
Affected environment and consequences	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts
Selective mitigation	None	None	None	None	None	None
Cumulative effects	None	None	None	None	None	None
Lands with Wilderness Characteristics						
Affected environment and consequences	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts
Selective mitigation	None	None	None	None	None	None
Cumulative effects	None	None	None	None	None	None

TABLE F-53 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; CONGRESSIONAL DESIGNATIONS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Inventoried Roadless Areas and Unroaded/Undeveloped Areas						
Affected environment	None	None	Crosses Soldier Creek IRA for 0.3 mile	None	None	▪ Crosses Soldier Creek IRA for 0.3 mile ▪ Crosses IRA 0401012 for 0.1 mile
Environmental consequences	None	None	Low impacts on Soldier Creek IRA attributes	None	None	▪ Moderate impacts on IRA 0401012 attributes ▪ Low impacts on Soldier Creek IRA attributes
Selective mitigation	None	None	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, and 16	None	None	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, and 16
Cumulative effects	None	None	Colocation with the TransWest Express transmission line would consolidate effects on IRAs.	None	None	Colocation with the TransWest Express transmission line would consolidate effects on IRAs.
Plan Compliance						
Plan amendment (Yes or No)	No	No	No	No	No	No

TABLE F-54 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Affected Environment						
Scenery (miles crossed)	▪ 33.7 miles of Class B ▪ 1.6 miles of Class C	▪ 32.8 miles of Class B ▪ 1.6 miles of Class C	▪ 33.1 miles of Class B ▪ 1.6 miles of Class C	▪ 33.7 miles of Class B ▪ 1.6 miles of Class C	▪ 33.0 miles of Class B ▪ 1.6 miles of Class C	▪ 31.9 miles of Class B ▪ 1.6 miles of Class C
High concern viewers (miles crossed)	▪ 6.1 miles of views within 0.5 mile ▪ V11.2 miles of views between 0.5 mile and 1.0 mile	▪ 7.5 miles of views within 0.5 mile ▪ 12.7 miles of views between 0.5 mile and 1.0 mile	▪ 14.5 miles of views within 0.5 mile ▪ 12.9 miles of views between 0.5 mile and 1.0 mile	▪ 6.1 miles of views within 0.5 mile ▪ 8.0 miles of views between 0.5 mile and 1.0 mile	▪ 7.9 miles of views within 0.5 mile ▪ 10.2 miles of view between 0.5 mile and 1.0 mile	▪ 17.8 miles of views within 0.5 mile ▪ 8.0 miles of views between 0.5 mile and 1.0 mile
Moderate concern viewers (miles crossed)	▪ 1.8 miles of views within 0.5 mile ▪ 1.8 miles of views between 0.5 mile and 1.0 mile	▪ 1.8 miles of views within 0.5 mile ▪ 1.8 miles of views between 0.5 mile and 1.0 mile	▪ 1.8 miles of views within 0.5 mile ▪ 1.7 miles of views between 0.5 mile and 1.0 mile	▪ 1.8 miles of views within 0.5 mile ▪ 1.8 miles of views between 0.5 mile and 1.0 mile	▪ 1.8 miles of views within 0.5 mile ▪ 1.8 miles of views between 0.5 mile and 1.0 mile	▪ 3.2 miles of views within 0.5 mile ▪ 3.0 miles of views between 0.5 mile and 1.0 mile
Federal Agency Visual Management Objectives (miles crossed)	▪ 6.9 miles of BLM VRM Class III	▪ 6.9 miles of BLM VRM Class III	▪ 4.1 miles of BLM VRM Class III ▪ 3.4 miles of BLM VRM Class IV	▪ 5.2 miles of BLM VRM Class III	▪ 5.9 miles of BLM VRM Class III	▪ 5.9 miles of BLM VRM Class III ▪ 3.4 miles of BLM VRM Class IV
Environmental Consequences						
Scenery	High impact on Class B scenery	Similar level of high impact on Class B scenery as COUT-C	Similar level of high impact on Class B scenery as COUT-C	Decreased level of high impact on Class B scenery compared to COUT-C	Similar level of high impact on Class B scenery as COUT-C	Most high impacts on Class B scenery
Residences	High impact on views from residences along Minnie Maud Creek, adjacent to U.S. Highway 191, along Willow Creek, and in Soldier Summit	Similar to COUT-C except for high impact on views from residences on Minnie Maud Ridge	Similar to Variation 1	Similar to COUT-C	High impact on views from residences on Argyle Ridge, adjacent to U.S. Highway 191, along Willow Creek, and in Soldier Summit	High impact on views from residences on Argyle Ridge, in Argyle Canyon, on Reservation Ridge, and in Soldier Summit

TABLE F-54 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Travel routes	High impact on views from Dinosaur Diamond/Indian Canyon Scenic Byways (U.S. Highway 191) Moderate impact on views from U.S. Highway 6	Similar to COUT-C	Similar impacts as COUT-C with high impact on views from Reservation Ridge Scenic Backway	Similar to COUT-C	Similar to COUT-C	Similar impacts as COUT-C with high impact on views from Argyle Canyon Road and Reservation Ridge Scenic Backway
Recreation areas	High impact on views from Crescent Regional Recreation Camp	Similar to COUT-C	Similar impacts as COUT-C with long duration views from Crescent Regional Recreation Camp	Similar to COUT-C	High impact on views from Camp Timberlane and Crescent Regional Recreation Camp	High impact on views from Camp Timberlane, Crescent Regional Recreation Camp Avintaquin Campground
Special designations	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts	No key impacts
Selective mitigation	2, 3, 4, 5, 9, and 16	2, 3, 4, 5, 9, and 16	2, 3, 4, 5, 9, and 16	2, 3, 4, 5, 9, and 16	2, 3, 4, 5, 9, and 16	2, 3, 4, 5, 7, 9, and 16
Cumulative effects	Colocation with the TransWest Express transmission line would consolidate effects on scenery and on views	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C	Similar to COUT-C
Plan Compliance						
Plan amendment (Yes or No)	No	No	Yes, ANF2	No	No	Yes, ANF1, ANF2, and VFO5

TABLE F-55 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
Affected environment	▪ 39 sites identified by the Class I inventory ▪ There are no known sites in the Project APE ▪ Unrecorded segments of the U.S. Highway 6 and a standard gauge railroad are crossed by Link U560 ▪ Key resources include Argyle Canyon Rock Art (Archaeological Sites), Soldier Summit, the U.S. Highway 6, the Emma Park Road, and the standard gauge railroad; of these resources, only unrecorded segments of the U.S. Highway 6 and the railroad are in the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified ▪ High potential for encountering numerous unrecorded archaeological sites (primarily rock art) and historic coal	Same as COUT-C	▪ 21 sites identified by the Class I inventory ▪ There are no known sites in the Project APE ▪ Same unrecorded historic linear sites are crossed ▪ Same key resources as COUT-C with the exception of the Emma Park Road ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified ▪ Same potential for encountering unrecorded cultural resources as COUT-C	Same as COUT-C	▪ 37 sites identified by the Class I inventory ▪ There are no known sites in the Project APE ▪ Same unrecorded historic linear sites are crossed ▪ Same key resources as Variation 2 ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified ▪ Same potential for encountering unrecorded cultural resources as COUT-C	▪ 21 sites identified by the Class I inventory ▪ There are no known sites in the Project APE ▪ Same unrecorded historic linear sites are crossed ▪ Same key resources as Variation 2 with the exception of Argyle Canyon Rock Art (Archaeological Sites), which is in the Project APE (Link U513) ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified ▪ Same potential for encountering unrecorded cultural resources as COUT-C

TABLE F-55 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	mining sites along Minnie Maud Creek and the vicinity of Argyle Canyon					
Environmental consequences (miles crossed)	▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ 0.2 mile of moderate cultural resource intensity ▪ 35.1 miles of low cultural resource intensity	Compared to COUT-C, Variation 1 would include: ▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ Same miles of moderate cultural resource intensity ▪ 0.9 fewer mile of low cultural resource intensity	Compared to COUT-C, Variation 2 would include: ▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ Same miles of moderate cultural resource intensity ▪ 0.6 fewer mile of low cultural resource intensity	Compared to COUT-C, Variation 3 would include: ▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ Same miles of moderate and low cultural resource intensity	Compared to COUT-C, Variation 4 would include: ▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ An additional 0.2 miles of moderate cultural resource intensity ▪ 0.9 fewer miles of low cultural resource intensity	Compared to COUT-C, Variation 5 would include: ▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ An additional 0.2 miles of moderate cultural resource intensity ▪ 2.0 fewer miles of low cultural resource intensity
Selective mitigation	Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant and implemented to mitigate	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C

TABLE F-55 CAMP TIMBERLANE/ARGYLE CANYON – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES						
Focus of Comparison	**Alternative COUT-C (35.3 miles)**	**Variation 1 (34.4 miles)**	**Variation 2 (34.7 miles)**	**Variation 3 (35.3 miles)**	**Variation 4 (34.6 miles)**	**Variation 5 (33.5 miles)**
	any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies					
Cumulative effects	The addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C	Same as COUT-C
Plan Compliance						
Plan amendment (Yes or No)	No	No	No	No	No	No

Spanish Fork Canyon/
U.S. Highway 6

F.7 Spanish Fork Canyon/U.S. Highway 6

This variation area is located 12 miles east of Thistle, Utah, (intersection of U.S. Highway 6 and U.S. Highway 89) on U.S. Highway 6 (Map F-7). During the collaborative effort of colocating the alignments of the Project and TransWest Express transmission project, TransWest Express LLC aligned its route in a narrow window on a steep slope north of Highway 6 and south of existing transmission lines (Link U533). North of the existing transmission lines is the Tie Fork Inventoried Roadless Area in the Uinta National Forest. Because the narrow window precluded the siting of the two proposed transmission lines, the Applicant shifted its alignment to parallel U.S. Highway 6 and railroad on the south side (which would avoid potential locations of the endangered clay phacelia) then crossing to return to the slope on the north side of Highway 6 and the railroad (Link U535).

Through continued discussions with the USFS and the announcement that the TransWest Express transmission project agency preferred alternative route is located in a different area, a Project route variation was added to maintain colocation with the existing transmission lines north of U.S. Highway 6. The lands crossed by the route of Alternative COUT-C (Agency Preferred Alternative route) and the route variations are a mixture of USFS-administered and privately owned lands. Primary resource issues in this area include: special status plant potential habitat, views from U.S. Highway 6, and view from adjacent residences.

Table F-56 is a side-by-side comparison of substantive resource issues for each route variation. Table F-57 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-58 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-59 to F-66 describe the inventory, impacts, and plan compliance for each resource in a side-by-side comparison of the route variations.

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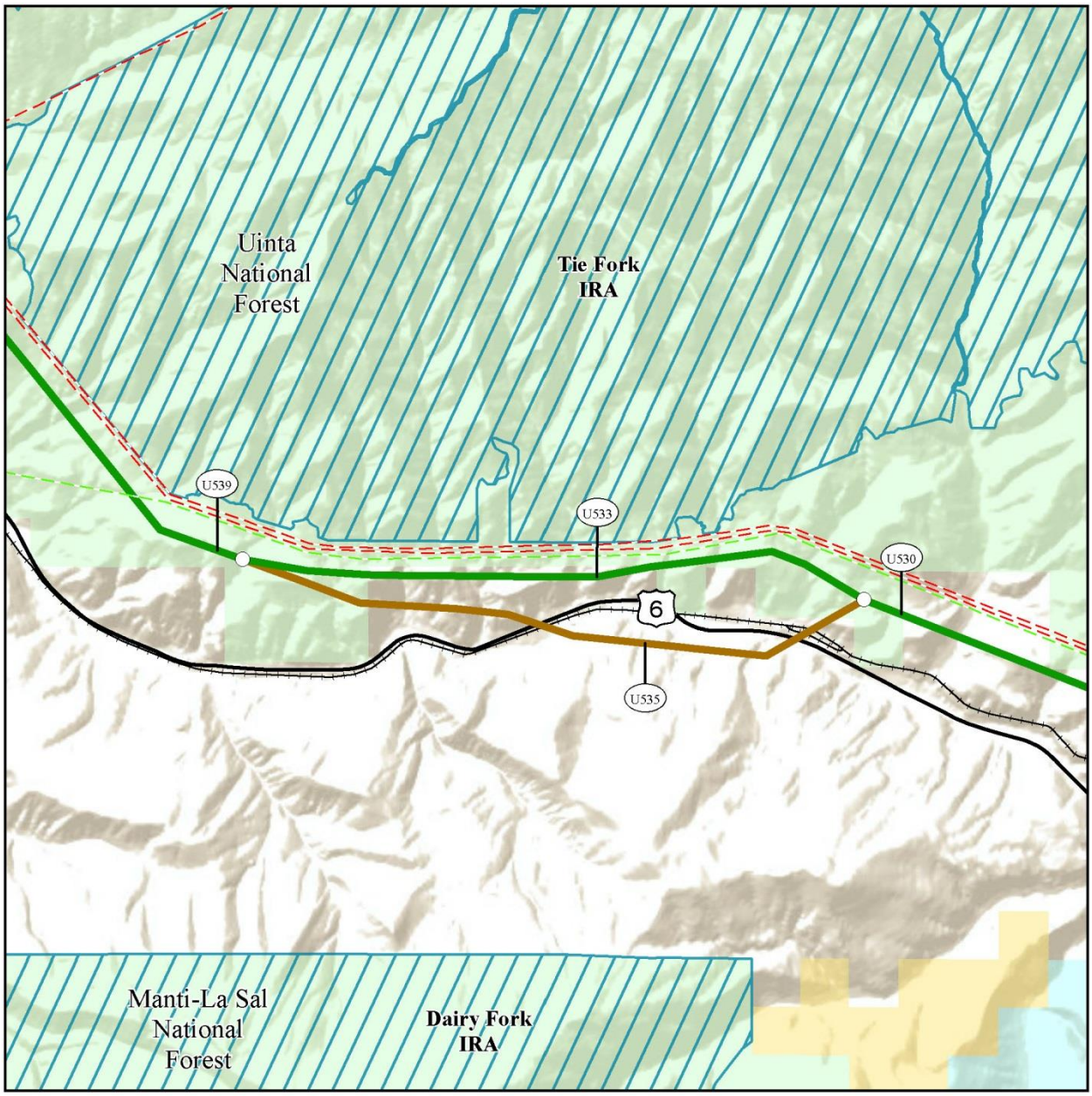

Map F-7

Spanish Fork Canyon/U.S. Highway 6

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative COUT-C
- Variation 1
- Link Number
- Link Node

Land Ownership

- Bureau of Land Management
- U.S. Forest Service
- State Land
- Private Land

General Reference

- 345kV Transmission Line
- 138kV Transmission Line
- Railroad
- U.S. Highway
- Inventoried Roadless Area (IRA)

SOURCES:
Land Jurisdiction, BLM 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013;
Inventoried Roadless Areas, USFS 2012

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.

Alternative routes last revised: September 23, 2014

FINAL EIS: September 2015

0 0.5 1 Miles

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TABLE F-56 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.1 for this alternative route.	Same as COUT-C
Earth Resources (miles crossed) (for detailed information, refer to Table F-59)	▪ 1.1 miles of high susceptibility to water erosion ▪ 3.3 miles of Prime Farmland ▪ 1.8 miles of oil and gas leases ▪ 2.1 miles of moderate susceptibility to landslides	▪ 0.1 mile of high susceptibility to water erosion ▪ 3.3 miles of Prime Farmland ▪ 0.9 mile of oil and gas leases ▪ 1.4 miles of moderate susceptibility to landslides
Paleontological Resources (miles crossed) (for detailed information, refer to Table F-60)	3.3 miles of PFYC 4	2.8 miles of PFYC 4
Water Resources (for detailed information, refer to Table F-61)	No critical impacts	Two crossings of the Spanish Fork River
Biological Resources		
Vegetation (for detailed information, refer to Table F-62)	No critical impacts	No critical impacts
Special Status Plants (miles crossed) (for detailed information, refer to Table F-62)	▪ 0.3 mile of moderate impacts on clay phacelia potential habitat This route would be colocated with existing transmission lines through potential clay phacelia habitat. Colocation would help reduce new surface disturbance and erosion associated with road construction. The FWS has expressed concern about the potential effects of additional development to suitable and occupied clay phacelia habitat, including the construction and operation of the Energy Gateway South and TransWest Express transmission lines (if colocated). As described in Section 3.2.6.4.2, FWS concerns relate to FWS's ability to recover the species through reintroduction becoming more limited as a result of loss of unoccupied, suitable habitat.	▪ 0.5 mile of moderate impacts on clay phacelia potential habitat ▪ 0.3 mile of low impacts on potential Ute ladies' tresses habitat This route would be only partially colocated with existing transmission lines through potential clay phacelia habitat. Colocation would help reduce new surface disturbance and erosion associated with road construction. The FWS has expressed concern about the potential effects of additional development to suitable and occupied clay phacelia habitat, including the construction and operation of the Energy Gateway South and TransWest Express transmission lines (if colocated). As described in Section 3.2.6.4.2, FWS concerns relate to FWS's ability to recover the species through reintroduction becoming more limited as a result of loss of unoccupied, suitable habitat.

TABLE F-56 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Wildlife (for detailed information, refer to Table F-62)	No critical impacts	No critical impacts
Special Status Wildlife (for detailed information, refer to Table F-62)	None	0.3 mile of moderate impacts on yellow-billed cuckoo potential habitat
Migratory Birds (for detailed information, refer to Table F-62)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.9 for this alternative route.	Similar to COUT-C
Fish and Aquatics (for detailed information, refer to Table F-62)	None	Route would make two crossings of the Spanish Fork River, which provides habitat for fish and other aquatic species.
Land Use		
Land Use (for detailed information, refer to Table F-63)	Crosses 0.2 mile of residential land resulting in a moderate residual impact	None
Parks, Preservation, and Recreation (for detailed information, refer to Table F-64)	None	None
Transportation and Access (for detailed information, refer to Table F-64)	None	None
Congressional Designations (for detailed information, refer to Table F-64)	None	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-64)	None	None
Lands with Wilderness Characteristics (for detailed information, refer to Table F-64)	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-64)	None	None
Visual Resources (for detailed information, refer to Table F-65)	▪ Moderate impact on views from residences adjacent to U.S. Highway 6 ▪ Low impact on views from U.S. Highway 6	▪ Moderate impact on Class B scenery ▪ High impact on views from residences adjacent to U.S. Highway 6 ▪ Moderate impact on views from U.S. Highway 6

TABLE F-56 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Cultural Resources (for detailed information, refer to Table F-66	▪ 25 sites identified by the Class I inventory; one known site in the Project APE ▪ Crosses 0.1 mile of high cultural resource intensity ▪ Key resources are the Mill Fork Cemetery, the U.S. Highway 6, and the Utah and Pleasant Valley (U&PV) Railway; these resources are outside of the Project APE	▪ Sites identified by the Class I inventory are the same as those identified for COUT-C; no known sites in the Project APE ▪ Crosses 0.0 mile of high cultural resource intensity ▪ Unrecorded segments of the U&PV and the U.S. Highway 6 are crossed in two different locations by Link U535 ▪ Same key resources as COUT-C with the exception of two unrecorded historic linear sites in the Project APE
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.21 for this alternative route.	Same as COUT-C
Social and Economic Conditions	Effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.22 for this alternative route.	Same as COUT-C
Public Health (EMF)	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.23 for this alternative route.	Same as COUT-C

TABLE F-57 SPANISH FORK CANYON/U.S. HIGHWAY 6 – 500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Jurisdiction (miles crossed)		
BLM	0.0	0.0
USFS	1.8	0.9
NPS	0.0	0.0
State	0.0	0.0
Tribal	0.0	0.0
Private	1.5	2.4

TABLE F-58 SPANISH FORK CANYON/U.S. HIGHWAY 6 – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Temporary disturbance (acres)[1, 4]	37	37
Permanent disturbance (acres)[2, 4]	25	25
Total disturbance (acres)	61	61
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	10	10
Access Roads		
Existing (miles)[5]	3.3	3.3
New (miles)[6]	0.0	0.0

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

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

TABLE F-59 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Geologic Hazards		
Affected environment (miles crossed)	▪ Crosses no mine subsidence ▪ Crosses all low flood hazard ▪ 2.1 miles of moderate susceptibility to landslides	▪ Crosses no mine subsidence ▪ Crosses all low flood hazard ▪ 1.4 miles of moderate susceptibility to landslides
Environmental consequences	Crosses more miles of moderate landslide susceptibility	Crosses fewer miles of moderate landslide susceptibility
Selective mitigation	None	None
Cumulative effects	Could have incremental impacts on areas prone to landslides	Same as COUT-C
Soil Resources		
Affected environment (miles crossed)	▪ 1.1 miles of high susceptibility to water erosion ▪ 1.1 miles of moderate susceptibility to water erosion ▪ 1.1 miles of moderate susceptibility to wind erosion ▪ 3.3 miles of Prime or Unique Farmland	▪ 0.1 mile of high susceptibility to water erosion ▪ 0.9 mile of moderate susceptibility to water erosion ▪ 0.9 mile of moderate susceptibility to wind erosion ▪ 3.3 miles of Prime or Unique Farmland
Environmental consequences	Greater impact on soils with moderate and high susceptibility to wind and water erosion	Lower impacts on soils
Selective mitigation	1, 3, 7, and 13	1, 3, 7, and 13
Cumulative effects	Could have incremental impacts on Prime Farmlands and soils with moderate and high susceptibility to wind and water erosion	Same as COUT-C
Mineral Resources		
Affected environment (miles crossed)	▪ Crosses no active mines or producing wells ▪ 1.8 miles of oil and gas leases	▪ Crosses no active mines or producing wells ▪ 0.9 mile of oil and gas leases
Environmental consequences	Crosses twice as much oil and gas leases as Variation 1	Crosses less miles with oil and gas leases
Selective mitigation	None	None
Cumulative effects	Could have incremental impacts on leases	Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-60 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Affected Environment		
PFYC formations	PFYC 2 and 4	Same as COUT-C
Known locality density within 1.0 mile of the centerline	Low	Same as COUT-C

TABLE F-60 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Environmental Consequences		
PFYC formations (miles crossed)	3.3 miles of PFYC 4	2.8 miles of PFYC 4
Percent of route crossing PFYC 4	100	85
Impacts on paleontological resources anticipated	Could be high	Same as COUT-C
Selective mitigation	None	None
Cumulative effects	Could have incremental impacts on paleontological resources	Same
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-61 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Affected Environment		
Class 1: Outstanding waters	7 crossings	3 crossings
Class 4: State-listed impaired waters	None	2 crossings
Palustrine emergent wetlands	None	None
Palustrine forested overstory wetlands	None	None
Palustrine scrub/shrub wetlands	None	None
Perennial stream/river	None	2 crossings of Spanish Fork River, which is not crossed by COUT-C
Intermittent stream	7 crossings	5 crossings
Riparian areas	None	5 crossings
Swamp/marsh/estuary	None	None
Well/spring	None	None
Environmental Consequences		
Residual impacts (miles crossed)	0.9 miles of low impacts	0.3 miles of moderate impacts 1.0 mile of low impacts
Selective mitigation	1, 2, 7, and 11	1, 2, 7, and 11
Cumulative effects	Project would be located in the vicinity of existing high-voltage transmission lines and the proposed TransWest Express transmission line (if colocated) leading to minor incremental impacts on water resources in the area	Project would be located on the opposite side of U.S. Highway 6 from the existing transmission lines and the proposed TransWest Express transmission line (if colocated) leading to more incremental impacts on water resources in the area.

TABLE F-61 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-62 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Vegetation		
Affected environment (miles of vegetation communities crossed)	▪ 0.2 mile of barren ▪ 0.2 mile of big sagebrush ▪ 0.3 mile of mountain shrub ▪ 0.6 mile of pinyon-juniper	▪ 0.3 mile of barren ▪ 0.2 mile of big sagebrush ▪ 0.1 mile of developed ▪ 2.4 miles of pinyon-juniper ▪ 0.3 mil of riparian
Environmental consequences (miles crossed)	▪ 0.7 mile of moderate impacts ▪ 2.6 miles of low-moderate impacts	▪ 0.5 mile of moderate impacts ▪ 0.7 mile of low-moderate impacts
Selective mitigation	None	1, 2, 4, and 7
Cumulative effects	Project would be located in the vicinity of existing high-voltage transmission lines and the proposed TransWest Express transmission line (if colocated) leading to minor incremental impacts on vegetation resources in the area	Project would be located on the opposite side of U.S. Highway 6 from the existing transmission lines and the proposed TransWest Express transmission line (if collocated) leading to more incremental impacts on vegetation resources in the area.
Special Status Plants		
Affected environment (miles crossed)	▪ 0.3 mile of clay phacelia potential habitat ▪ No known clay phacelia sites or reintroduction areas are within 650 feet of this route.	▪ 0.5 mile of clay phacelia potential habitat ▪ 0.3 mile of Ute ladies'-tresses potential habitat (associated with Spanish Fork River) ▪ No known clay phacelia sites or reintroduction areas are within 650 feet of this route.
Environmental consequences (miles crossed)	▪ 0.3 miles of moderate impacts ▪ Route would be colocated with existing transmission lines through potential clay phacelia habitat. Colocation would help reduce new surface disturbance and erosion associated with road construction	▪ 0.5 miles of moderate impacts ▪ 0.3 miles of low impacts ▪ Route would be only partially colocated with existing transmission lines through potential clay phacelia habitat. Colocation would help reduce new surface disturbance and erosion associated with road construction
Selective mitigation	2, 3, and 7	2, 3, and 7

TABLE F-62 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Cumulative effects	Project would be located in the vicinity of existing high-voltage transmission lines and the proposed TransWest Express transmission project (if colocated) leading to incremental impacts on clay phacelia habitat; the FWS has expressed concern about the potential effects of additional development to suitable and occupied clay phacelia habitat, including the construction and operation of the Energy Gateway South and TransWest Express transmission lines (if colocated). As described in Section 3.2.6.4.2, FWS concerns relate to FWS' ability to recover the species through reintroduction becoming more limited as a result of loss of unoccupied, suitable habitat.	Project would be located on the opposite side of U.S. Highway 6 from the existing transmission lines and the proposed TransWest Express transmission line (if colocated) leading to more incremental impacts on clay phacelia habitat; the FWS has expressed concern about the potential effects of additional development to suitable and occupied clay phacelia habitat, including the construction and operation of the Energy Gateway South and TransWest Express transmission lines (if colocated). This route may also incrementally affect potential Ute ladies' tresses habitat. As described in Section 3.2.6.4.2, FWS concerns relate to FWS' ability to recover the species through reintroduction becoming more limited as a result of loss of unoccupied, suitable habitat.
Wildlife		
Affected environment (miles crossed)	▪ 3.0 miles of elk crucial winter range ▪ 3.3 miles of mule deer crucial winter range	▪ 1.9 miles of elk crucial winter range ▪ 1.2 miles of moose crucial year-long range ▪ 1.2 miles of moose calving grounds ▪ 1.7 miles of mule deer crucial winter range
Environmental consequences (miles crossed)	3.3 miles of low impacts	3.3 miles of low impacts
Selective mitigation	12 and 15	12 and 15
Cumulative effects	Project would be located in the vicinity of existing high-voltage transmission lines and the proposed TransWest Express transmission line (if colocated) leading to minor incremental impacts on wildlife	Project would be located on the opposite side of U.S. Highway 6 from the existing transmission lines and proposed TransWest Express transmission line (if collocated) leading to more incremental impacts on wildlife
Special Status Wildlife		
Affected environment (miles crossed)	No special status wildlife crossed	0.3 mile of yellow-billed cuckoo potential habitat
Environmental consequences (miles crossed)	None	0.3 miles of moderate residual impacts
Selective mitigation	None	2, 4, 5, 7, and 12
Cumulative effects	None	Project would contribute incrementally to the existing impacts on potential yellow-billed cuckoo habitat in Spanish Fork Canyon.

TABLE F-62 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Fish and Aquatics		
Affected environment	No specific resources analyzed in detail in the EIS were identified in this area.	No specific resources analyzed in detail in the EIS were identified in this area, though this variation would make 2 crossings of the Spanish Fork River, which provides habitat for fish and aquatic species.
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-63 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Utility Corridors (miles)		
Designated (BLM and USFS)	1.4	0.3
West-wide Energy Corridor	1.8	0.9
Parallel Linear Facilities (miles)		
500kV	0.0	0.0
345kV	3.3	1.8
138kV	3.3	1.9
230kV	0.0	0.0
Pipeline	0.0	0.0
Existing Land Use		
Environmental Consequences	Crosses 0.2 mile of residential land resulting in a moderate residual impact	No key impacts
Selective mitigation	7	None
Cumulative effects	Short-term cumulative effects of the Project in addition to any past/present and RFFAs could limit and/or alter access to existing residence(s) and noise may be produced during construction of the project. Long-term cumulative effects could restrict use of property where projects occur on private lands.	None
Authorized Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None

TABLE F-63 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING, AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Cumulative effects	None	None
Future Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Zoning and General Plan Management Direction[1]		
Generalized permitting	No key permitting requirements	No key permitting requirements
Selective mitigation	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No
NOTE: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.		

TABLE F-64 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; CONGRESSIONAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Parks, Preservation, and Recreation		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Transportation and Access		
Affected environment	Crosses other roadways	Crosses U.S. Highway 6 twice and a railroad twice.
Environmental consequences	See Section 3.2.13 for information on effects common to all alternatives.	Same as COUT–C with the addition that moderate impacts would be anticipated where temporary closures and/or delays would occur from construction of the project when crossing roadways and railroads (e.g. U.S. Highway 6)
Selective mitigation	None	5 and 9
Cumulative effects	Not applicable	Not applicable
Congressional Designations		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None

TABLE F-64 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; CONGRESSIONAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Special Designations and Other Management Areas		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Lands with Wilderness Characteristics		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas		
Affected environment	None	None
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-65 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Affected Environment		
Scenery (miles crossed)	▪ 3.3 miles of Class B	▪ 3.3 miles of Class B
High concern viewers (miles crossed)	▪ 1.9 miles of views within 0.5 mile ▪ 1.5 miles of views between 0.5 mile and 1.0 mile	▪ 1.9 miles of views within 0.5 mile ▪ 1.4 miles of views between 0.5 mile and 1.0 mile
Moderate concern viewers (miles crossed)	▪ 3.1 miles of views within 0.5 mile ▪ 0.3 miles of views within 0.5 miles and 1.0 miles	▪ 3.2 miles of views within 0.5 mile ▪ 0.1 mile of views within 0.5 miles and 1.0 miles
Federal Agency Visual Management Objectives (miles crossed)	▪ 1.6 miles of USFS Partial Retention VQO ▪ 0.3 mile of USFS Modification VQO	▪ 0.2 mile of USFS Retention VQO ▪ 0.3 mile of USFS Partial Retention VQO ▪ 0.3 mile of USFS Modification VQO

TABLE F-65 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Environmental Consequences		
Scenery	No key impacts	Moderate impact on Class B scenery
Residences	Moderate impact on views from residences adjacent to U.S. Highway 6	High impact on views from residences adjacent to U.S. Highway 6
Travel routes	Low impact on views from U.S. Highway 6 due to proximity to existing transmission lines	Moderate impact on views from U.S. Highway 6 due to the double crossing of the highway
Recreation areas	No key impacts	No key impacts
Special designations	No key impacts	No key impacts
Selective mitigation	3, 4, 8, and 16	3, 4, and 16
Cumulative effects	Colocation with the TransWest Express transmission line would consolidate effects on scenery and on views	Due to separation from existing transmission lines, more expansive cumulative effects on scenery and increased impacts on views from U.S. Highway 6
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-66 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Affected environment	▪ 25 sites identified by the Class I inventory ▪ One known site in the Project APE ▪ Key resources include the Mill Fork Cemetery, U.S. Highway 6, and the U&PV Railway; these resources are outside of the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified	▪ Class I sites potentially affected by Variation 1 are the same as those identified for COUT-C ▪ There are no known sites in the Project APE ▪ Unrecorded segments of the U&PV and U.S. Highway 6 are crossed in two different locations by Link U535 ▪ Same key resources as COUT-C with the exception of unrecorded segments of the two historic linear sites in the Project APE ▪ No NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified
Environmental consequences (miles crossed)	▪ 0.1 miles of high cultural resource intensity ▪ 0.2 miles of moderate cultural resource intensity ▪ 3.0 miles of low cultural resource intensity	▪ 0.0 mile of high cultural resource intensity, except there are two historic linear sites in the Project APE ▪ 0.2 miles of moderate cultural resource intensity ▪ 3.1 miles of low cultural resource intensity

TABLE F-66 SPANISH FORK CANYON/U.S. HIGHWAY 6 – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	**Alternative COUT-C Link U533 (3.3 miles)**	**Variation 1 Link U535 (3.3 miles)**
Selective mitigation	▪ Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies	▪ Same as COUT-C
Cumulative effects	▪ The addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources.	▪ Same as COUT-C
Plan Compliance		
Plan amendment (Yes or No)	No	No

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Chipman Creek

F.8 Chipman Creek

This variation area is located near the Wasatch-Utah county line on the Uinta National Forest approximately 20 miles southwest of Fruitland, Utah (Map F-8). The original route (Link U428) parallels an existing 345kV transmission line adjacent to the southern edge of the Chipman Creek IRA as part of Alternative COUT-A (not the Agency Preferred Alternative route). Variation 1 (Link U429) was developed to avoid the IRA. On the east side of the IRA, the route turns to the southwest, crosses the 345kV transmission line, turns to parallel the 345kV line, then turns to the northwest, crosses the 345kV line again and rejoins the original route on the east side of the IRA.

All lands crossed by the routing options are administered by the USFS. Primary resource issues in this area include IRA roadless and wilderness characteristics, White River/Strawberry Road Scenic Backway, and partial retention Visual Quality Objectives.

Table F-67 is a side-by-side comparison of substantive resource issues for each route variation. Table F-68 is a comparison of miles of each jurisdiction crossed by the route variations, and Table F-69 is a summary of estimated ground disturbance and vegetation clearing for the route variations. Tables F-70 to F-77 describe the inventory, impacts, and plan compliance for each resource in a side-by-side comparison of route variations.

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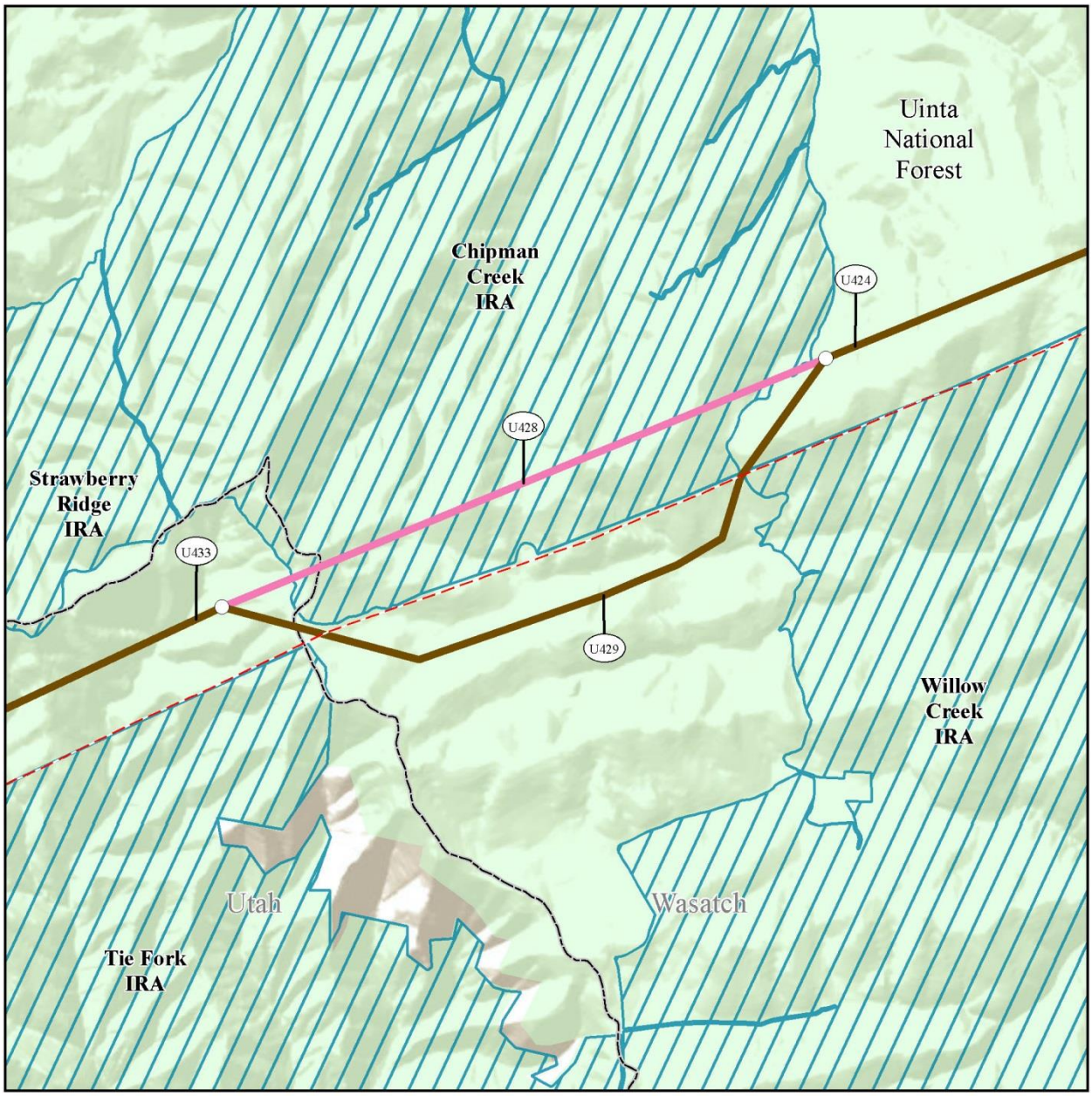

Map F-8

Chipman Creek

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Alternative COUT-A
- Variation 1
- Link Number
- Link Node

Land Ownership

- U.S. Forest Service
- Private Land

General Reference

- 345kV Transmission Line
- County Boundary
- Inventoried Roadless Area (IRA)

SOURCES:
Land Jurisdiction, BLM 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
County Boundaries, ESRI 2013
Inventoried Roadless Areas, USFS 2012

NOTES:
• The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.

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

0 0.5 1
Miles

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TABLE F-67 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Climate and Air Quality	Due to the regional-scale of climate and air quality data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-A are consistent with those described in Section 3.2.1 for this alternative route.	Same as COUT-A
Earth Resources (miles crossed) (for detailed information, refer to Table F-70)	0.4 mile of high susceptibility to water erosion	▪ 0.6 mile of high susceptibility to water erosion ▪ 0.6 mile of moderate susceptibility to wind erosion
Paleontological Resources (for detailed information, refer to Table F-71)	Entire route crosses areas with PFYC 4 and 5	Entire route crosses areas with PFYC 4 and 5
Water Resources (for detailed information, refer to Table F-72)	No critical issues	No critical issues
Biological Resources		
Vegetation (for detailed information, refer to Table F-73)	No critical issues	No critical issues
Special Status Plants (for detailed information, refer to Table F-73)	None	None
Wildlife (for detailed information, refer to Table F-73)	No critical issues	No critical issues
Special Status Wildlife (for detailed information, refer to Table F-73)	None	None
Migratory Birds (for detailed information, refer to Table F-73)	Due to the regional-scale of migratory bird data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-A are consistent with those described in Section 3.2.9 for this alternative route.	Similar to COUT-A
Fish and Aquatics (for detailed information, refer to Table F-73)	None	None
Land Use		
Land Use (for detailed information, refer to Table F-74)	None	None
Parks, Preservation, and Recreation areas (for detailed information, refer to Table F-75)	Crosses 0.4 mile of the White River/Strawberry Road scenic backway.	Crosses 0.5 mile of the White River/Strawberry Road scenic backway.
Transportation and Access (for detailed information, refer to Table F-75)	None	None

TABLE F-67 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS BY RESOURCE		
Resource	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Congressional Designations (for detailed information, refer to Table F-75)	None	None
Special Designations and Other Management Areas (for detailed information, refer to Table F-75)	None	None
Lands with Wilderness Characteristics (for detailed information, refer to Table F-75)	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas (for detailed information, refer to Table F-75)	Low impacts on Chipman Creek and Willow Creek IRAs	Moderate impacts on Chipman Creek IRA
Visual Resources (for detailed information, refer to Table F-76	Moderate impact on Class B scenery High impact on views from White River/Strawberry Road Scenic Backway	Similar to COUT-A
Cultural Resources (for detailed information, refer to Table F-77)	Two sites identified by the Class I inventory; no known sites in the Project APE 0.0 mile of high cultural resource intensity No key resources were identified	Same as COUT-A
Fire Ecology and Management	Due to the regional-scale of fire ecology and management data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-C are consistent with those described in Section 3.2.21 for this alternative route.	Same as COUT-A
Social and Economic Conditions	Effects associated with this portion of Alternative COUT-A are consistent with those described in Section 3.2.22 for this alternative route.	Same as COUT-A
Public Health (EMF)	Due to the scale of public health data and the associated analysis for the Project, effects associated with this portion of Alternative COUT-A are consistent with those described in Section 3.2.23 for this alternative route.	Same as COUT-A

TABLE F-68 CHIPMAN CREEK – 500-KILOVOLT TRANSMISSION LINE PARALLEL CONDITIONS AND JURISDICTION BY ROUTE VARIATION		
Focus of Comparison	Alternative **COUT-A** **Link U429 (3.8 miles)**	**Variation 1** **Link U428 (3.4 miles)**
Jurisdiction (miles crossed)		
BLM	0.0	0.0
USFS	3.8	3.4
NPS	0.0	0.0
State	0.0	0.0
Tribal	0.0	0.0
Private	0.0	0.0

TABLE F-69 CHIPMAN CREEK – SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING FOR THE 500-KILOVOLT TRANSMISSION LINE AND SERIES COMPENSATION STATIONS		
Focus of Comparison	Alternative **COUT-A** **Link U429 (3.8 miles)**	**Variation 1** **Link U428 (3.4 miles)**
Temporary disturbance (acres)[1, 4]	36	56
Permanent disturbance (acres)[2, 4]	30	9
Total disturbance (acres)	66	65
Transmission-line right-of-way vegetation clearing (acres)[3, 4]	51	83
Access Roads		
Existing (miles)[5]	3.3	0.6
New (miles)[6]	0.5	2.8

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

[4]Disturbance calculations include an additional 5 percent contingency. Acres in table are rounded; therefore, 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.

TABLE F-70 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR EARTH RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Geologic Hazards		
Affected environment (miles crossed)	▪ Crosses no mine subsidence ▪ Crosses all low flood hazard ▪ 2.1 miles of moderate susceptibility to landslides	▪ Crosses no mine subsidence ▪ Crosses all low flood hazard ▪ 1.4 miles of moderate susceptibility to landslides
Environmental consequences	Mostly low impacts for geologic hazards, but has greater amount of moderate susceptibility to landslides	Mostly low impacts for geologic hazards, and less amount of moderate susceptibility to landslides
Selective mitigation	None	None
Cumulative effects	Could have incremental impacts on areas prone to landslides	Same as COUT-A
Soil Resources		
Affected environment (miles crossed)	▪ 0.4 mile of moderate susceptibility to water erosion ▪ Crosses all low susceptibility to wind erosion ▪ Crosses no Prime or Unique Farmland	▪ 0.6 miles of moderate susceptibility to water erosion ▪ 0.6 miles of moderate susceptibility to wind erosion ▪ Crosses no Prime or Unique Farmland
Environmental consequences	Would have least impacts on soils susceptible to erosion	Would have greater impact on soil resources than COUT-A
Selective mitigation	1, 3, 7, and 13	1, 3, 7, and 13
Cumulative effects	Could have incremental impacts on soils susceptible to water erosion	Could have incremental impacts on soils susceptible to wind and water erosion
Mineral Resources		
Affected environment (miles crossed)	▪ 0.1 mile of active mines or producing wells ▪ 3.8 miles of permitted mines, coal lases, oil and gas leases, or geothermal leases	▪ Crosses no active mines or producing wells ▪ 3.4 miles of permitted mines, coal lases, oil and gas leases, or geothermal leases
Environmental consequences	Would have greater impact on mineral resources than Variation 1	Would have least impacts on mineral resources
Selective mitigation	2 and 7	None
Cumulative effects	Could have incremental impacts on oil and gas leases and producing wells	Could have incremental impacts on oil and gas leases
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-71 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Affected Environment		
PFYC formations	PFYC 4 and 5	Same as COUT-A
Known locality density within 1.0 mile of the centerline	Low	Low

TABLE F-71 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR PALEONTOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Environmental Consequences		
PFYC formations	Entire route crosses areas with PFYC 4 and 5	Same as COUT-A
Percent of route crossing PFYC 4 and 5	100	100
Impacts on paleontological resources anticipated	Could be high	Could be high
Selective mitigation	None	None
Cumulative effects	Could have incremental impacts on paleontological resources	Same as COUT-A
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-72 CHIPMAN CREEK –COMPARISON OF ROUTE VARIATIONS FOR WATER RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Affected Environment		
Class 1: Outstanding waters	2 crossings	1 crossing
Class 4: State-listed impaired waters	2 crossings	1 crossing
Palustrine emergent wetlands	None	None
Palustrine forested overstory wetlands	None	None
Palustrine scrub/shrub wetlands	None	None
Perennial stream/river	None	None
Intermittent stream	2 crossings	1 crossing
Riparian areas	5 crossings	9 crossings
Swamp/marsh/estuary	None	None
Well/spring	None	None
Environmental Consequences		
Residual impacts (miles crossed)	1.6 miles of low impacts	2.4 miles of low impacts
Selective mitigation	1, 2, 7, and 11	1, 2, 7, and 11
Cumulative effects	▪ Colocated with an existing high-voltage transmission line and the proposed TransWest Express transmission line (if collocated) ▪ Incremental contribution to the effects on water resources in the area	Similar to COUT-A
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-73 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Vegetation		
Affected environment (miles of vegetation crossed)	▪ 0.2 mile of alpine ▪ 1.5 miles of aspen ▪ 1.8 miles of big sagebrush ▪ 0.1 mile of montane forest ▪ 0.2 mile of riparian	▪ 2.1 miles of aspen ▪ 0.1 mile of barren ▪ 0.1 mile of big sagebrush ▪ 0.5 mile of montane forest ▪ 0.6 mile of riparian
Environmental consequences (miles crossed)	▪ 0.6 mile of moderate-high impacts ▪ 2.8 miles of moderate impacts	▪ 0.2 mile of moderate-high impacts ▪ 3.6 miles of moderate impacts
Selective mitigation	1, 2, 4, and 7	1, 2, 4, and 7
Cumulative effects	This variation would be collocated with an existing high-voltage transmission line and the proposed TransWest Express transmission line (if collocated). The Project would have an incremental contribution to the effects on vegetation in the area.	Similar to COUT-A
Special Status Plants		
Affected environment (miles crossed)	No identifiable special status plant habitat crossed.	No identifiable special status plant habitat crossed.
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Wildlife		
Affected environment (miles crossed)	▪ 3.8 miles of elk crucial spring/fall range ▪ 3.8 miles of moose crucial spring/fall range ▪ 3.8 miles of mule deer crucial summer range	▪ 3.4 miles of elk crucial spring/fall range ▪ 3.4 miles of moose crucial spring/fall range ▪ 3.4 miles of mule deer crucial summer range
Environmental consequences (miles crossed)	3.8 miles of low impacts	3.4 miles of low impacts
Selective mitigation	12 and 15	12 and 15
Cumulative effects	This variation would be collocated with an existing high-voltage transmission line and the proposed TransWest Express transmission line (if collocated). The Project would have an incremental contribution to the effects on wildlife in the area.	Similar to COUT-A
Special Status Wildlife		
Affected environment (miles crossed)	No specific resources analyzed in detail in the EIS were identified in this area.	Similar to COUT-A
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None

TABLE F-73 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR BIOLOGICAL RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Fish and Aquatics		
Affected environment	No specific resources analyzed in detail in the EIS were identified in this area.	Same as COUT-A
Environmental consequences	None	None
Selective mitigation	None	None
Cumulative effects	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-74 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR LAND USE (EXISTING, AUTHORIZED, AND FUTURE), ZONING AND GENERAL PLAN MANAGEMENT DIRECTION		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Utility Corridors (miles)		
Designated (BLM and USFS)	0.1	0.0
West-wide Energy Corridor	3.8	0.6
Parallel Linear Facilities (miles)		
500kV	0.0	0.0
345kV	3.8	1.5
138kV	0.0	0.0
230kV	0.0	0.0
Pipeline	0.0	0.0
Existing Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Authorized Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Future Land Use		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Zoning and General Plan Management Direction[1]		
Generalized permitting	No key permitting requirements	No key permitting requirements.
Selective mitigation	None	None
Plan Compliance		
Plan amendment (Yes or No)	No	Yes, UNF1
NOTEs: [1]Generalized permitting is based on review of city and county zoning and general plan management direction. The ultimate decision to permit the project within the jurisdictions crossed will be made by the applicable state, city or county. The generalized permitting is for disclosure and comparison only.		

TABLE F-75 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR PARKS, PRESERVATION, AND RECREATION; TRANSPORTATION AND ACCESS; SPECIAL DESIGNATIONS AND OTHER MANAGEMENT AREAS; CONGRESSIONAL DESIGNATIONS; LANDS WITH WILDERNESS CHARACTERISTICS; AND INVENTORIED ROADLESS AREAS AND UNROADED/UNDEVELOPED AREAS		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Parks, Preservation, and Recreation areas		
Affected environment and consequences	Crosses 0.4 mile of the White River/Strawberry Road scenic backway.	Crosses 0.5 mile of the White River/Strawberry Road scenic backway.
Selective mitigation	None	None
Cumulative effects	None	None
Transportation and Access		
Affected environment	Crosses other roadways	Crosses other roadways
Environmental consequences	See Section 3.2.13 for information on effects common to all alternatives.	Same as COUT-A
Selective mitigation	5 and 9	5 and 9
Cumulative effects	Not applicable	Not applicable
Congressional Designations		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Special Designations and Other Management Areas		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Lands with Wilderness Characteristics		
Affected environment and consequences	No key impacts	No key impacts
Selective mitigation	None	None
Cumulative effects	None	None
Inventoried Roadless Areas and Unroaded/Undeveloped Areas		
Affected environment (miles crossed)	0.1 mile of Chipman Creek IRA 0.1 mile of Willow Creek IRA	3.1 miles of Chipman Creek IRA
Environmental consequences	Low impacts on Chipman Creek and Willow Creek IRA attributes	Moderate impacts on Chipman Creek IRA attributes
Selective mitigation	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, and 16	1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13, and 16
Cumulative effects	Colocation with the TransWest Express transmission line would consolidate effects on IRAs	Colocation with the TransWest Express transmission Project would consolidate effects on IRAs
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-76 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR VISUAL RESOURCES		
Focus of Comparison	**Alternative COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Affected Environment		
Scenery (miles crossed)	▪ 3.8 miles of Class B	▪ 3.4 miles of Class B
High concern viewers (miles crossed)	▪ 1.4 miles of views within 0.5 mile ▪ 0.7 mile of views within 0.5 miles and 1.0 miles	▪ 1.1 miles of views within 0.5 mile ▪ 0.7 mile of views within 0.5 miles and 1.0 miles
Moderate concern viewers (miles crossed)	▪ 3.8 miles of views within 0.5 mile ▪ 0.0 mile of views between 0.5 mile and 1.0 mile	▪ 3.1 miles of views within 0.5 mile ▪ 0.3 mile of views between 0.5 mile and 1.0 mile
Federal Agency Visual Management Objectives (miles crossed)	▪ 3.8 miles of USFS Partial Retention VQO	▪ 3.3 miles of USFS Partial Retention VQO ▪ 0.1 mile of USFS Modification VQO
Environmental Consequences		
Scenery	Moderate impact on Class B scenery	Similar to COUT-A
Residences	No key impacts	No key impacts
Travel routes	High impact on views from White River/Strawberry Road Scenic Backway	Similar to COUT-A
Recreation areas	No key impacts	No key impacts
Special designations	No key impacts	No key impacts
Selective mitigation	3, 4, 5, and 9	3, 4, 5, and 9
Cumulative effects	Colocation with the TransWest Express transmission line would consolidate effects on scenery and on views	Similar to COUT-A
Plan Compliance		
Plan amendment (Yes or No)	No	No

TABLE F-77 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	Alternative **COUT-A Link U429 (3.8 miles)**	**Variation 1 Link U428 (3.4 miles)**
Affected environment	▪ Two sites identified by the Class I inventory ▪ No known sites in the Project APE ▪ No key resources, NHTs or potential NHTs, NHLs, TCPs, or ACECs with cultural components were identified	Same as COUT-A
Environmental consequences (miles crossed)	▪ 0.0 miles of high cultural resource intensity ▪ 0.1 miles of moderate cultural resource intensity ▪ 3.7 miles of low cultural resource intensity	Compared to COUT-A, Variation 1 would include: ▪ 0.0 mile of high cultural resource intensity ▪ 0.3 fewer miles of moderate cultural resource intensity ▪ An additional 0.1 miles of low cultural resource intensity

TABLE F-77 CHIPMAN CREEK – COMPARISON OF ROUTE VARIATIONS FOR CULTURAL RESOURCES		
Focus of Comparison	Alternative **COUT-A** **Link U429 (3.8 miles)**	**Variation 1** **Link U428 (3.4 miles)**
Selective mitigation	▪ Specific mitigation measures for historic properties would be developed by the BLM in consultation with the consulting parties to the Programmatic Agreement, American Indian tribes, and the Project Applicant and implemented to mitigate any identified adverse impacts. These may include, but are not limited to, Project modifications and data recovery studies	Same as COUT-A
Cumulative effects	The addition of the Project to past and present actions and RFFAs would result in a greater potential for cumulative effects on historic properties and other potentially significant cultural resources	Same as COUT-A
Plan Compliance		
Plan amendment (Yes or No)	No	No