ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

BIOLOGICAL EVALUATION

Prepared for:

Ashley National Forest, Manti-La Sal National Forest, Uinta National Forest

Approved by: David Olsen **Date:** 11 January 2016
David Olsen
Wildlife Biologist, Ashley National Forest

Approved by: Terry R Miller **Date:** 11 JANUARY 2016
Terry Miller
Botanist, USDA Forest Service

Approved by: Chris Mease **Date:** 11 January 2016
Chris Mease
Fisheries Biologist, USDA Forest Service

Prepared by:

Environmental Planning Group, LLC
208 East 800 South
Salt Lake City, Utah 84111

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LIST OF ACRONYMS AND ABBREVIATIONS

Applicant	PacifiCorp, doing business as Rocky Mountain Power
APLIC	Avian Power Line Interaction Committee
BE	Biological Evaluation
BLM	Bureau of Land Management
CIC	Compliance Inspection Contractor
EIS	Environmental impact statement
EO	Element occurrence
EPG	Environmental Planning Group, LLC
FWS	U.S. Fish and Wildlife Service
GIS	Geographic information systems
HUC	Hydrologic Unit Code
IUCN	International Union for Conservation of Nature
kV	Kilovolt
NHD	National Hydrography Dataset
OHV	Off-highway vehicle
PFA	Post-fledgling area
Project	Energy Gateway South Transmission Project
POD	Plan of Development
UDWR	Utah Division of Wildlife Resources
UNHP	Utah Natural Heritage Program
UNPS	Utah Native Plant Society
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey

1.0 Introduction

This Biological Evaluation (BE) is prepared in accordance with policy provided in Forest Service Manual 2670 (U.S. Forest Service [USFS] 2005). This policy is designed to avoid impacts that may cause a trend toward listing a species under the Endangered Species Act or loss of species viability on USFS-administered land. The purpose of this document is to determine the potential effects of the USFS issuing a special-use authorization for construction, operation, and maintenance of the Energy Gateway South Transmission Project (the Project) along the agency-preferred route identified in the Final Environmental Impact Statement (EIS) (Bureau of Land Management [BLM] 2015) on the USFS Region 4 sensitive species that may occur on the national forests crossed by the Project. This analysis complements other analyses conducted for the Project, including those contained in specialist reports prepared by the USFS.

2.0 Current Management Direction

Forest Service Manual 2670 provides objectives and standards directing the review and analysis to be conducted in a BE (USFS 2011a). This evaluation will ensure that Project actions (1) do not contribute to loss of viability of any native or desired non-native species or contribute to trends toward federal listing of any species; (2) comply with the requirements of the Endangered Species Act; and (3) provide full consideration of threatened, endangered, proposed, and sensitive species throughout the decision-making process in a consistent and standard manner. According to the Forest Service Manual, a BE must meet the following requirements:

- Identification of all listed, proposed, and sensitive species known or expected to be in the Project area or that the Project potentially affects. Contact the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service as part of the informal consultation process for a list of endangered, threatened, or proposed species that may be present in the Project area.
- Identification and description of all occupied and unoccupied habitat recognized as essential for listed or proposed species recovery, or to meet Forest Service objectives for sensitive species.
- Analysis of the effects of the Project on species or their occupied habitat or on any unoccupied habitat required for recovery.
- Discussion of cumulative effects resulting from the Project in relationship to existing conditions and other related projects.
- Determination of no effect, beneficial effect, or “may” effect on the species and the process and rationale for the determination documented in the environmental assessment or the EIS.
- Recommendations for removing, avoiding, or compensating for any adverse effects.

This BE does not analyze species listed or proposed to be listed under the Endangered Species Act; those species are addressed in a separate analysis prepared as a Biological Assessment for the BLM, the lead agency for this Project (Environmental Planning Group [EPG] 2015). The Biological Assessment was submitted to the FWS on July 20, 2015. This BE satisfies USFS requirements to protect and manage sensitive species as established in the Forest Service Manual 2670.32 (USFS 2011a).

3.0 Description of the Proposed Project

3.1 Proposed Project

This document evaluates the USFS action of issuing a special-use authorization for construction and operation of the Project on land administered by the agency for the agency-preferred route analyzed in the Final EIS prepared by the BLM and USFS. The Project includes the following:

- Constructing, operating, and maintaining a 500-kilovolt (kV) single-circuit alternating current transmission line from the Aeolus Substation near Medicine Bow in Carbon County, Wyoming, to the Clover Substation near Mona in Juab County, Utah, a distance of 429 miles
- Constructing two series compensation stations, at points between the Aeolus and Clover substations, to improve the transport capacity and efficiency of the transmission line
- Constructing communication regeneration stations (approximately every 55 miles)
- Rebuilding two existing 345kV transmission lines between the Clover and Mona Substations (in the existing right-of-way), a total distance of approximately 9 miles of transmission lines between substations approximately 3 miles apart
- Rerouting of the Mona to Huntington 345kV transmission line through the Clover Substation
- Relocating a 2-mile-long section of the Bears Ears to Bonanza Flats 345kV transmission line

The Applicant's (PacifiCorp, doing business as Rocky Mountain Power) statement of the purpose and need is explained in Chapter 1 and Appendix A of the EIS. A detailed Project description is provided in Chapter 2 and Appendix B of the EIS.

As proposed, approximately 8.4 miles of 500kV overhead transmission line would be constructed on USFS-administered land. Impacts disclosed in this BE are based on the Project design as described in the EIS.

3.2 Project Area

The agency-preferred route is described as a combination of a route segment in the northern portion of the Project area (Links W15, W21, W30, W32, W35, W36, W101, W108, W113, W116, W125, W302, W411, C31, C61, C71, C91, C94, C95, and C175 [referred to in the EIS as Alternative WYCO-B, Variation 2 in the Deerlodge Road area]) and a route segment in the southern portion of the Project area (Links C186, C188, U242, U280, U285, U300, U400, U401, U404, U408, U411, U413, U417, U418, U445, U460, U504, U508, U514, U516, U530, U533, U539, U560, U621, U625, U638, U639, and U650 [referred to in the EIS as Alternative COUT-C]). The agency-preferred route crosses Carbon and Sweetwater counties in Wyoming; Moffat and Rio Blanco counties in Colorado; and Duchesne, Sanpete, Uintah, Utah, Wasatch, and Juab counties in Utah (Figure 1).

No USFS-administered land would be crossed in Wyoming or Colorado. In Utah, the southern portion of the route segment would cross the Duchesne Ranger District of the Ashley National Forest; the Ferron, Price, and Sanpete Ranger Districts of the Manti-La Sal National Forest; and the Heber-Kamas and Spanish Fork Ranger Districts of the Uinta National Forest (Figure 2).

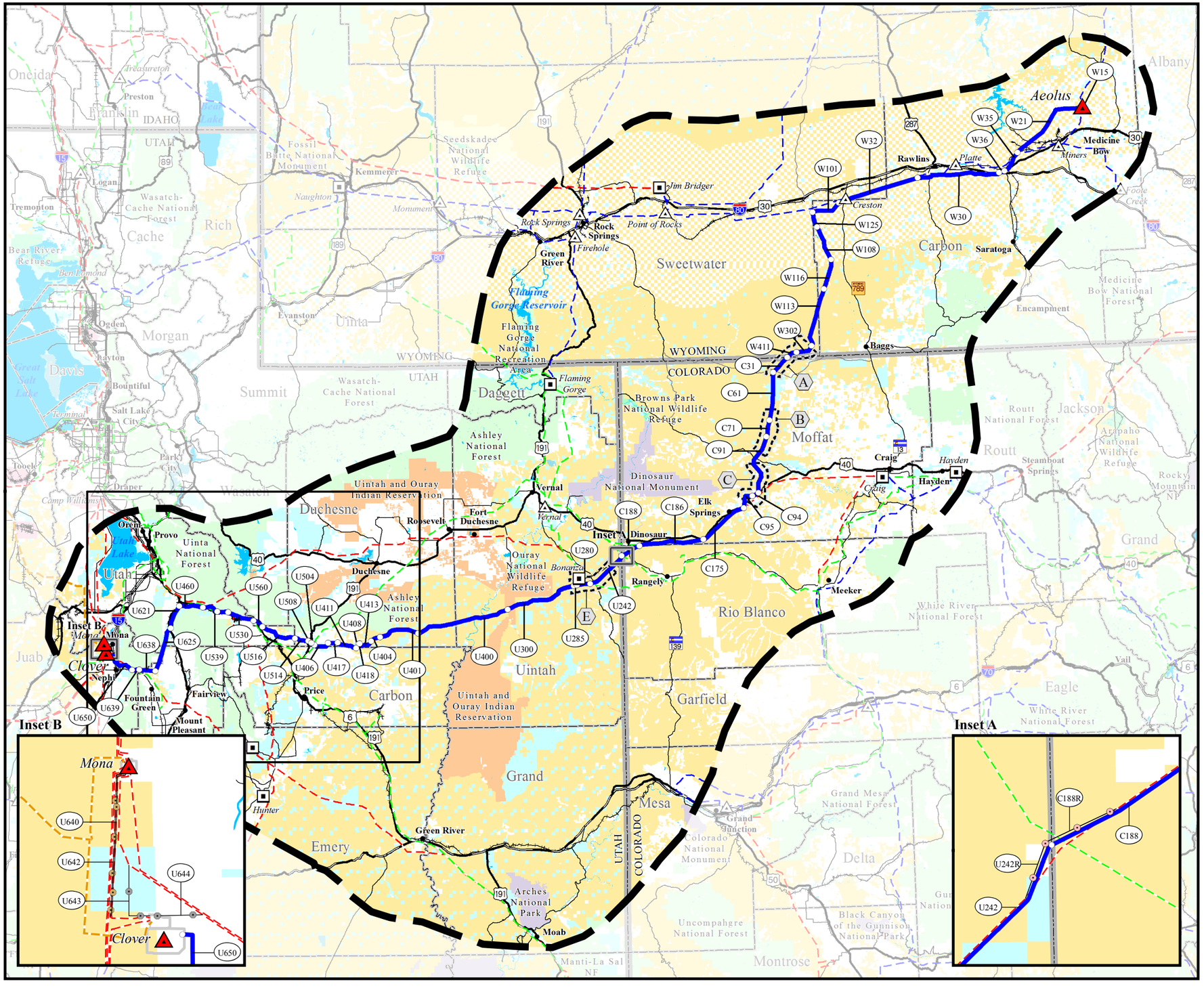

Figure 1

Project Area

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Agency-preferred Alternative Route
- Link Number
- Link Node
- 345kV Proposed Relocation (Inset A)
- 345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
- 345kV Proposed Reroute (Segment 4c - Inset B)
- Series Compensation Station Siting Area

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- State Land
- Private Land

General Reference

- City or Town
- 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 and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
September 2015

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Miles

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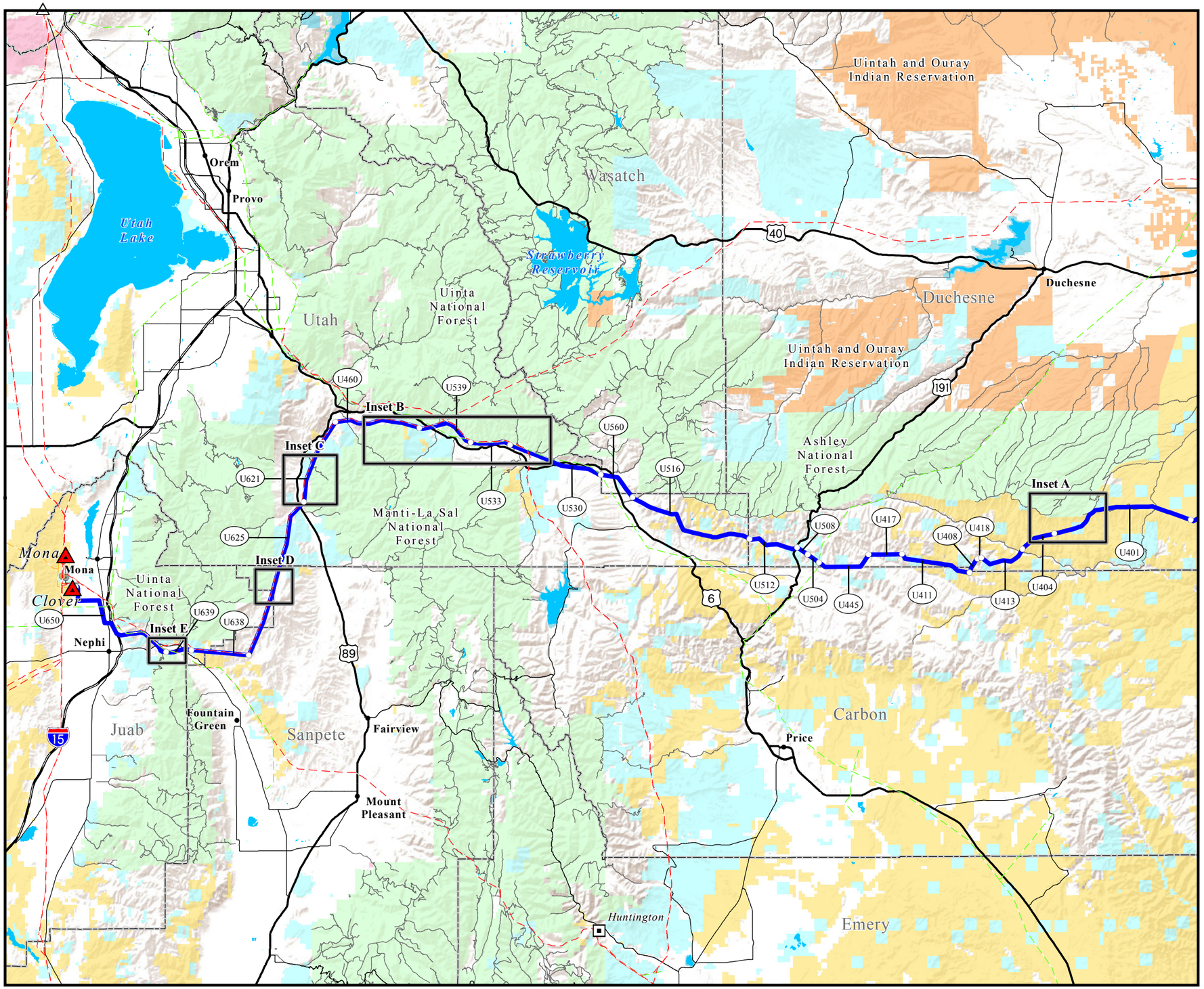

Figure 2

Land Ownership

ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

Land Ownership

- Bureau of Land Management
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Forest Service
- State Land
- Private Land

Project Features

- Substation (Project Terminal)
- Agency-preferred Alternative Route
- Link Number
- Link Node
- 345kV Proposed Rebuild (Segment 4a and 4b)
- 345kV Proposed Reroute (Segment 4c)

General Reference

- City or Town
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- USFS Road
- Lake or Reservoir
- 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; USFS Roads, USFS 2013;
Water Features, ESRI 2008, USGS 2010; 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
September 2015

0 2 4 8 12 16
Miles

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The portion of the southern route segment in Utah parallels the existing Bonanza to Bears Ears 345kV transmission line to approach the town of Bonanza, Utah. The route continues to the west and crosses the Green River approximately 8 miles north of Sand Wash boat launch, continuing west toward the western end of the Tavaputs Plateau. Within the plateau, it traverses through Argyle Ridge for approximately 12 miles in a southwest direction toward U.S. Highway 191, following U.S. Highway 191 through Indian Canyon for approximately 2 miles; it then crosses the highway heading west/northwest toward Soldier Summit for a distance of approximately 21 miles. The route continues west toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. It continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, turning south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The route continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the 500kV transmission line segment's terminus at the Clover Substation. The two existing 345kV transmission lines proposed for rebuilding cross between the Clover and Mona substations, which are approximately 3 miles apart.

3.3 Schedule

Construction would begin following the issuance of the special-use authorization. The Record of Decision is currently planned for December 2015. Construction would likely involve multiple construction contracts over a 3- to 4-year period ending in December 2020. Multiple spreads would be under construction at the same time. Operation and maintenance are anticipated to be permanent as the Project does not include plans for decommissioning the Project.

3.4 Design Features of the Project for Environmental Protection

Design features of the Project for environmental protection are measures the Applicant will implement as standard practice of construction, operation, and/or maintenance, as applicable. These measures were developed from a review of land-use plans relevant to the Project to identify design features and other measures to mitigate potential Project impacts. Additional selective mitigation measures have been developed to reduce specific resource impacts. These selective mitigation measures will be applied selectively through the planning process. The environmental protection measures are applied to all lands, regardless of jurisdiction or ownership, where appropriate. A full description of both the design features and selective mitigation measures is included in Appendix A of this document.

4.0 Existing Environment

4.1 Species Account, Life History, and Habitat Status

Sensitive species lists were obtained from the most current USFS Region 4 sensitive species lists (USFS 2013). Information concerning life histories, suitable habitats, threats, and population trends for sensitive species that are known or suspected to occur in the Project area were obtained from the Uinta National Forest monitoring reports (USFS 2011b), *Endangered, Threatened, Sensitive, and Management Indicator Species Accounts, Terrestrial Wildlife Species, Dixie, Fishlake, and Manti-La Sal National Forests* (USFS 2014), and the USFS Land and Resource Management Plan for the Ashley National Forest (USFS 1986).

Natural history, conservation status, monitoring, and population trend information were obtained from the Western boreal toad Statewide Monitoring Summary (Utah Division of Wildlife Resources [UDWR] 2008); Intermountain Region (Region 4) Threatened, Endangered, Proposed, and Sensitive Species: Known and Suspected Distribution by Forest (USFS 2013); the Life History and Analysis of Endangered, Threatened, Candidate, and Sensitive Species of the Ashley National Forest (Christensen and Abeyta 2006); and the Uinta-Wasatch-Cache National Forest State of the Forest Report for Uinta Planning Area (USFS 2011b), as well as the Utah Natural Heritage Program (UNHP) Dataset (UNHP 2012).

Information from the UNHP and USFS regarding the locations of sensitive plants was used, when available, to determine species occurrences on USFS-administered land. However, inventories of sensitive plants have not been conducted in all areas and comprehensive data regarding the area of habitat and location of individual sensitive plants on the national forests are generally not available. Habitat descriptions, ranges, geologic substrates, and elevations from the Utah Native Plant Society (UNPS) (2012), A Utah Flora (Welsh et al. 2008), and the NatureServe Online Encyclopedia (NatureServe 2013) were used.

Habitat modeling was conducted to initially screen for habitat known to support Region 4 species that may occur in the Project area. To identify suitable habitat for Region 4 sensitive species, geospatial datasets (e.g., land-cover types, geology, soils, topography) representing the habitat requirements of each species were developed and reviewed with aerial imagery to refine the areas identified. The datasets were reviewed by agency and EPG biologists and, based on the natural history requirements of each species and the Project biologists' knowledge of the Project area, the presence of potentially suitable habitat for each species was evaluated.

Table 1 identifies the Region 4 sensitive species that may be present on USFS-administered land in the Project area and are analyzed in this document. The species listed in Table 1 include only species with the potential to be affected by Project activities or could occur in the Project area based on communication with USFS personnel and a review of potential habitat with USFS personnel.

TABLE 1
REGION 4 SENSITIVE SPECIES CARRIED FORWARD FOR ANALYSIS

Common Name	Scientific Name	Habitat Suitability or Known Occurrence on the Ashley, Manti-La Sal, or Uinta National Forests
Plants		
Canyon sweet-vetch	*Hedysarum occidentale* var. *canone*	The Project would cross potentially suitable habitat on the Uinta and Manti-La Sal National Forests. Documented occurrences exist on the Manti-La Sal National Forest 10 miles southeast of the agency-preferred route (Utah Natural Heritage Program 2012).
Goodrich's blazingstar	*Mentzelia goodrichii*	The Project would cross within 1 mile of potentially suitable habitat on the Ashley National Forest. Documented occurrences exist on the Ashley National Forest 1.5 miles north of the agency-preferred route (Utah Natural Heritage Program 2012).
Green River greenthread	*Thelesperma caespitosum*	The Project would cross potentially suitable habitat on the Uinta and Manti-La Sal National Forests.
Untermann's daisy	*Erigeron untermannii*	The Project would cross within 1 mile of potentially suitable habitat on the Ashley National Forest. Documented occurrences exist on the Ashley National Forest 5 miles north of the agency-preferred route (Utah Natural Heritage Program 2012).

TABLE 1 REGION 4 SENSITIVE SPECIES CARRIED FORWARD FOR ANALYSIS		
Common Name	**Scientific Name**	**Habitat Suitability or Known Occurrence on the Ashley, Manti-La Sal, or Uinta National Forests**
Wheeler's angelica	*Angelica wheeleri*	The Project would cross potentially suitable habitat on the Uinta National Forest. Documented occurrences exist on the Uinta National Forest less than 5 miles north of the agency-preferred route (Utah Natural Heritage Program 2012).
Fish		
Bonneville cutthroat trout	*Oncorhynchus clarkii utah*	The Project would be located near and/or would cross occupied habitat and designated conservation and persistence habitat on the Manti-La Sal and Uinta National Forests.
Southern leatherside chub	*Lepidomeda aliciae*	The Project would be located near and/or would cross occupied habitat and designated conservation and persistence water bodies on the Manti-La Sal and Uinta National Forests.
Colorado River cutthroat trout	*Oncorhynchus clarki pleuriticus*	The Project would be located near and/or would cross occupied habitat and designated conservation and persistence water bodies on the Manti-La Sal and Uinta National Forests.
Birds		
Bald eagle	*Haliaeetus leucocephalus*	Potentially suitable nesting, wintering and roosting areas, and foraging habitat occur in the Project area on the three national forests.
Flammulated owl	*Otus flammeolus*	Potentially suitable nesting and foraging habitat occur in the Project area on the three national forests.
Northern goshawk	*Accipiter gentilis*	Potentially suitable nesting and foraging habitat occur in the Project area on the three national forests.
Peregrine falcon	*Falco peregrinus anatum*	Potentially suitable nesting and foraging habitat occur in the Project area on the three national forests.
Three-toed woodpecker	*Picoides dorsalis*	Potentially suitable nesting and foraging habitat occur in the Project area on the three national forests.
Mammals		
Spotted bat	*Euderma maculatum*	Potentially suitable roosting and foraging habitat occur in the Project area on the three national forests.
Townsend's big-eared bat	*Corynorhinus townsendii*	Potentially suitable roosting and foraging habitat occur in the Project area on the three national forests.
Amphibians		
Western boreal toad	*Bufo boreas*	The Project would cross potentially suitable habitat on the Uinta and Manti-La Sal National Forests.
Columbia spotted frog	*Rana luteiuentris*	The Project would cross potentially suitable habitat on the Uinta and Manti-La Sal National Forests.

Table 2 identifies the Region 4 sensitive species that do not occur or do not have suitable habitat in the Project area on the Ashley, Manti-La Sal, or Uinta National Forests; therefore, no identifiable impacts would occur on these species and further analysis is not required.

TABLE 2 REGION 4 SENSITIVE SPECIES NOT CARRIED FORWARD FOR ANALYSIS		
Common Name	**Scientific Name**	**Rationale for Elimination from Analysis**
Plants		
Graham columbine	*Aquilegia grahamii*	No modeled habitat for this species is mapped in the Project area.
Petiolate wormwood	*Artemisia campestris* ssp. *borealis* var. *petiolata*	No modeled habitat for this species is mapped in the Project area.
Dainty moonwort	*Botrychium crenulatum*	No modeled habitat for this species is mapped in the Project area.
Slender moonwort	*Botrychium lineare*	This species is not known to occur within 1.5 miles of the agency-preferred route in the last 60 years. Surveys at the site in 2003 failed to locate the species. No modeled habitat for this species is mapped in the Project area.
Brownie ladyslipper	*Cypripedium parviflorum*	This species is not known to occur within 10 miles of the agency-preferred route. No modeled habitat for this species is mapped in the Project area.
Rockcress draba	*Draba globosa*	This species is not known to occur within 4 miles of the agency-preferred route. No modeled habitat for this species is mapped in the Project area.
Arctic poppy	*Papaver radicatum* var. *pygmaeum*	No modeled habitat for this species is mapped in the Project area.
Stemless beardtongue	*Penstemon acaulis* var. *acaulis*	No modeled habitat for this species is mapped in the Project area.
Chatterley onion	*Allium geyeri* var. *chatterleyi*	No modeled habitat for this species is mapped in the Project area.
Sweet-flowered rock jasmine	*Androsace chamaejasme* ssp. *carinata*	No modeled habitat for this species is mapped in the Project area.
Link Trail columbine	*Aquilegia flavescens* var. *rubicunda*	This species is not known to occur within 10 miles of the agency-preferred route. No modeled habitat for this species is mapped in the Project area.
Bicknell milkvetch	*Astragalus consobrinus*	No modeled habitat for this species is mapped in the Project area.
Isley's milkvetch	*Astragalus iselyi*	No modeled habitat for this species is mapped in the Project area.
Pinnate spring-parsley	*Cymopterus beckii*	No modeled habitat for this species is mapped in the Project area.
Abajo Peak draba	*Draba abajoensis*	No modeled habitat for this species is mapped in the Project area.
Abajo daisy	*Erigeron abajoensis*	No modeled habitat for this species is mapped in the Project area.
Kachina daisy	*Erigeron kachinensis*	No modeled habitat for this species is mapped in the Project area.
LaSal daisy	*Erigeron mancus*	No modeled habitat for this species is mapped in the Project area
Canyonlands lomatium	*Lomatium latilobum*	No modeled habitat for this species is mapped in the Project area.
Arizona willow	*Salix arizonica*	No modeled habitat for this species is mapped in the Project area.
Musinea groundsel	*Senecio musiniensis*	No modeled habitat for this species is mapped in the Project area.

TABLE 2 REGION 4 SENSITIVE SPECIES NOT CARRIED FORWARD FOR ANALYSIS		
Common Name	**Scientific Name**	**Rationale for Elimination from Analysis**
Maguire campion	*Silene petersonii*	This species is not known to occur within 10 miles of agency-preferred route in the past 30 years. No modeled habitat for this species is mapped in the Project area
Wasatch fitweed	*Corydalis casaeana* spp. *brachycarpa*	No modeled habitat for this species is mapped in the Project area.
Wasatch draba	*Draba brachystylis*	This species was recorded within 1 mile of Links U460 and U621 in 1901. No other recent occurrences of the species have been recorded in the Project area. No modeled habitat for this species is mapped in the Project area.
Santaquin draba	*Draba santaquinensis*	No modeled habitat for this species is mapped in the Project area.
Garrett's fleabane	*Erigeron garrettii*	No modeled habitat for this species is mapped in the Project area.
Utah ivesia	*Ivesia utahensis*	No modeled habitat for this species is mapped in the Project area.
Wasatch jamesia	*Jamesia Americana* var. *macrocalyx*	No modeled habitat for this species is mapped in the Project area.
Wasatch pepperwort	*Lepidium montanum* var. *alpinum*	No modeled habitat for this species is mapped in the Project area.
Garrett bladderpod	*Lesquerella garrettii*	No modeled habitat for this species is mapped in the Project area.
Barneby woody aster	*Tonestus kingii* var. *barnebyana*	No modeled habitat for this species is mapped in the Project area.
Carrington daisy	*Erigeron carringtonae*	This species is not known to occur within 10 miles of the agency-preferred route. No modeled habitat for this species is mapped in the Project area.
Creutzfeldt's cat's-eye	*Cryptantha creutzfeldtii*	This species is not known to occur within 10 miles of the agency-preferred route. No modeled habitat for this species is mapped in the Project area.
Birds		
Greater sage-grouse	*Centrocercus urophasianus*	Proposed project impacts on greater sage-grouse habitat do not occur on USFS-administered land.
Great gray owl	*Strix nebulosa*	Predicted range for this species is outside the Project area. The species is not known to occur in the Project area (UNHP 2012). No modeled habitat for this species is mapped in the Project area.
Yellow-billed cuckoo	*Coccyzus americanus*	No modeled habitat for this species is mapped in the Project area.
Boreal owl	*Aegolius funereus*	No modeled habitat for this species is mapped in the Project area.
Mammals		
California bighorn sheep	*Ovis canadensis californiana*	Species has been translocated to Utah (Antelope Island, Oak Creek, and Newfoundland Mountain Range), but translocation areas are outside the Project area.
Desert bighorn sheep	*Ovis c. nelsoni*	No modeled habitat for this species is mapped in the Project area.

TABLE 2 REGION 4 SENSITIVE SPECIES NOT CARRIED FORWARD FOR ANALYSIS		
Common Name	**Scientific Name**	**Rationale for Elimination from Analysis**
Fisher	*Martes pennanti*	Predicted range for the species is outside the Project area. The species is not known to occur in the Project area (UNHP 2012). No modeled habitat for this species is mapped in the Project area.
Rocky mountain bighorn sheep	*Ovis canadensis canadensis*	No modeled habitat for this species is mapped in the Project area.

The Project is not expected to result in impacts on greater sage-grouse habitat on USFS-administered land as the agency-preferred route would avoid all occupied, brood-rearing, and winter habitat on the Ashley, Manti-La Sal, or Uinta National Forests. Project use of access roads on USFS-administered land would avoid all sage-grouse habitat and all active leks by at least 4 miles. Greater sage-grouse on USFS-administered land is not expected to be affected by Project activities and, therefore, are not included for analysis in this document.

4.2 Methodology

Effects on USFS-sensitive species were evaluated by quantitatively assessing the Project's potential effects on habitat and known occurrences of each species using geographic information systems (GIS). Habitat for each species analyzed was identified using the best available information regarding individual species' life history characteristics and habitat requirements. Where possible, existing data maintained by the UDWR or USFS (e.g., observed occurrence locations, nest locations, mapped known or potential habitat) were obtained and used to analyze effects on individual species. For species without pre-existing habitat data on USFS-administered land, potentially suitable habitat was identified using GIS methods and available data. GIS data representing land cover (U.S. Geological Survey [USGS] 2012), elevation and slope (USGS 1999), and locations of waterways (USGS 2009) were collected from publicly available sources. Landcover data were reclassified using methods described in Section 3.2.5.4 of the EIS. These data were manipulated using methods described in the Vegetation and Special Status Plants Report, the Fish and Aquatic Resources Specialist Report, and the Special Status Wildlife Report (USFS 2015a, b, c) to identify areas of potentially suitable habitat for each species based on their life history requirements. In general, the habitat modeling methods used were conservative and are likely to overestimate the amount of habitat available for each species on the landscape as the models do not take into account species-specific selection of habitat features in a given ecological community.

4.3 Existing Habitat

The agency-preferred route centerline crosses both the Manti-La Sal and Uinta National Forests, but does not cross into the Ashley National Forest. Existing forest access roads, which potentially may be used for Project construction and maintenance activities, are located on all three forests. The following discussion addresses where the agency-preferred route crosses into each national forest. Figure 2 shows the geographic region by land jurisdiction.

4.3.1 Ashley National Forest

The agency-preferred route does not cross into the Ashley National Forest. However, existing forest access roads may be used by the Project for construction or maintenance activities. The agency-preferred route crosses near the Ashley National Forest in the vicinity of Reservation Ridge. Habitat in the 2-mile-wide Project area in the vicinity of Reservation Ridge is on the very southern edge of the Ashley National Forest and has been largely unmodified and unaffected by anthropogenic events. The existing ungraded

forest road (the Reservation Ridge Road) is rough and only suitable for low-speed vehicle use, is located far from major population centers, and receives only minor public use. Additionally, Reservation Ridge is located approximately 4 miles north of a major highway, railroad, and other human activity in the Emma Park area.

4.3.2 Manti-La Sal National Forest

The agency-preferred route crosses the edge of the Manti-La Sal National Forest in the vicinity of Spanish Fork and Thistle Creek canyons. Habitats in the 2-mile-wide Project area in Spanish Fork and Thistle Creek canyons have been heavily modified by anthropogenic and natural events. The corridor parallels existing linear facilities, including a steel-lattice 345kV transmission line, U.S. Highways 6 and 89, and the Rio Grande Western Railroad.

4.3.3 Uinta National Forest

The agency-preferred route crosses the Uinta National Forest through Spanish Fork Canyon. Habitats in the 2-mile-wide Project area in Spanish Fork Canyon have been heavily modified by anthropogenic and natural events. Native vegetation has been cleared and non-native invasive plants have become established in many areas of disturbance. The corridor parallels existing linear facilities, including two steel-lattice 345kV transmission lines, several lower voltage transmission lines, U.S. Highway 6, and the Rio Grande Western Railroad. The development of multiple high-voltage transmission lines, major highways (e.g. U.S. Highway 6), and the railroad has resulted in increased levels of human activity, noise, and construction of significant barriers to terrestrial wildlife movement.

4.4 Existing Condition of Affected Species

4.4.1 Plants

4.4.1.1 Canyon Sweet-vetch

Canyon sweet-vetch, also known as the coal-cliffs sweet-vetch, is endemic to Carbon, Duchesne, and Emery counties, Utah (UNPS 2012). Canyon sweet-vetch is found in pinyon-juniper, serviceberry, maple, alderleaf mountain mahogany, and sagebrush communities between 6,400 and 8,300 feet (UNPS 2012) on or below the coal measures of the Mesa Verde group in Carbon, Duchesne, and Emery counties (Welsh et al. 2008).

Canyon sweet-vetch habitat models based on landcover and underlying geology predict canyon sweet-vetch habitat occurring throughout the Project area ranging north to Duchesne, south to Ferron, east to Carbon City, and west to Moroni (EPG 2013a). The bulk of its habitat lies to the south of the agency-preferred route on the Manti-La Sal National Forest but is on both the Uinta and Manti-La Sal National Forests. Refer to Appendix B, Map B-1, for occurrence and potential habitat present in the Project area.

Comprehensive range-wide surveys have not been conducted for canyon sweet-vetch, and population estimates are not available. Several known element occurrences (EO) exist in the Project vicinity throughout the Roan Cliffs near Helper, Utah. None of these EOs is present on USFS-administered land. There are 15 EOs of canyon sweet-vetch on, or within 1 mile, of the Manti-La Sal National Forest in the vicinity of East Mountain. These sites were last surveyed in 1989 with count estimates at each EO ranging from “Scattered” to “Abundant” (UNHP 2012). In light of 25 years of development in the area, these counts may no longer be accurate and canyon sweet-vetch may be extirpated from some of the EOs. The closest of these EOs is 26 miles from the centerline of the agency-preferred route.

As canyon sweet-vetch is restricted to coal bearing geologic formations, coal mining and development pose the greatest threat. However, roads and oil and gas development account for most of the disturbance to potential habitat in the Project area.

4.4.1.2 Goodrich's Blazingstar

Goodrich's blazingstar grows on steep, white, marly, calciferous shale outcrops of the Green River Formation at 8,100 to 8,800 feet. It is endemic to southern Duchesne County where it is known to occur along the Badland Cliffs above Argyle Canyon and west into Avintaquin Canyon (Franklin 2005) and along the escarpment of Willow Canyon and the Anthro Mountain area of the West Tavaputs Plateau (UDWR 1998). Associated vegetation includes limber pine, pinyon pine, Douglas fir, mountain mahogany, and rabbitbrush (UNPS 2012). UNHP- and USFS-mapped occurrences in Utah range in elevation from 7,100 to 9,300 feet.

Goodrich's blazingstar habitat models based on landcover and underlying geology predict Goodrich's blazingstar from Argyle Canyon northeast to Timber Canyon (EPG 2013a). Of the three forests in this analysis, potential habitat is present on the Ashley National Forest. Most of the habitat lies north of the agency-preferred route, but the agency-preferred route does cross habitat in Argyle Canyon south of the Ashley National Forest. Refer to Appendix B, Map B-2 for occurrence and potential habitat present in the Project area.

Comprehensive range-wide surveys have not been conducted for Goodrich's blazingstar, and population estimates are not available. Six EOs are known to exist on, or within 1 mile of, the Ashley National Forest near Anthro Mountain and Sowers Creek. The closest of these EOs is 1.5 miles north of the agency-preferred route. Population counts for these six EOs are not available. Goodrich's blazingstar is largely unaffected by off-highway vehicles (OHV) or grazing but may be threatened by increasing oil and gas development (NatureServe 2013).

4.4.1.3 Green River Greenthread

The Green River greenthread is found on white shale slopes and ridges of the Green River Shale and Uinta Formations at approximately 5,900 feet in Duchesne and Uintah counties (UNPS 2012; Welsh et al. 2008). UNHP- and USFS-mapped locations of Green River greenthread occur at elevations from 5,800 to 8,400 feet. Green River greenthread habitat models based on underlying geology and landcover class predict Green River greenthread habitat existing on all three national forests, with the majority occurring on the Ashley National Forest along the Badland Cliffs north of the agency-preferred route. The potential habitat on the Uinta and Manti-La Sal National Forests is near Spanish Fork Canyon to the north and south of the agency-preferred route. Refer to Appendix B, Map B-3 for occurrence and potential habitat information.

Comprehensive range-wide surveys have not been conducted for Green River greenthread and population estimates are not available. Four EOs occur on, or within 1 mile of, the Ashley National Forest along the southern slopes of Anthro Mountain. Count estimates in 1995 for these EOs range from 1,000 to 10,000 individuals. The closest of these EOs is 1.5 miles from the centerline of the agency-preferred route. Threats to Green River greenthread habitat include OHV use and increasing oil and gas development.

4.4.1.4 Untermann's Daisy

Untermann's daisy is found on calcareous shales and sandstones of the Uinta and Green River formations in pinyon-juniper, mountain mahogany, limber pine, bristlecone pine, and sagebrush communities between 7,000 and 9,400 feet in elevation (UNPS 2012) on the Tavaputs Plateau (Welsh et al. 2008). UNHP- and USFS-mapped occurrences in Utah range in elevation from 6,800 to 9,400 feet. Untermann's

daisy habitat models based on underlying geology and landcover class predict Untermann's daisy on the Tavaputs Plateau from the Strawberry River south to Valley Mountain (EPG 2013a). Potential habitat exists only on the Ashley National Forest. Potential habitat stretches to the north and south of the agency-preferred route, and the route crosses potential habitat along the Badland Cliffs and Argyle Canyon south of the Ashley National Forest. Refer to Appendix B, Map B-4, for occurrence and potential habitat present in the Project area.

Comprehensive range-wide surveys have not been conducted for Untermann's daisy, and population estimates are not available. Fifty-three EOs occur on, or within 1 mile of, the Ashley National Forest along the ridgelines dividing Lake, Indian, and Sowers canyons and escarpments near the mouth of Sowers Canyon. The closest of these EOs is 5 miles north of the agency-preferred route along the ridgeline separating the head of Sower's Canyon from Argyle Canyon. Counts conducted from 1988 to 1992 estimate 2,500 to 10,000 or more individuals for each EO with a total population of 55,000 individuals (UNHP 2012; Franklin 2005). Untermann's daisy is largely restricted to ridgelines and plateaus and remains unaffected by grazing or continuing oil and gas development but faces threats from expanding OHV travel (Franklin 2005).

4.4.1.5 Wheeler's Angelica

Wheeler's angelica inhabits boggy or very wet areas in riparian communities, seeps, and springs from 5,380 to 10,000 feet in elevation (UNPS 2012) in Cache, Juab, Piute, Salt Lake, Sevier, and Utah counties (Welsh et al. 2008). UNHP-mapped occurrences in Utah range in elevation from 5,700 to 6,400 feet.

Wheeler's angelica habitat models based on landcover and underlying geology predict Wheeler's angelica habitat extending from Mt. Timpanogos south to Nephi and occurring only on the Uinta National Forest. The habitat closest to the agency-preferred route exists as isolated patches north of Nephi, but larger more contiguous patches exist in the Project area along Nebo and Bennie creeks. Refer to Appendix B, Map B-5, for occurrence and potential habitat present in the Project area.

Comprehensive range-wide surveys have not been conducted for Wheeler's angelica and population estimates are not available. Three EOs occur on, or within 1 mile of, the Uinta National Forest along Salt Creek and north near Mt. Timpanogas (UNHP 2012). Although not identified in the UNHP mapping data, another occurrence of Wheeler's angelica exists on the Uinta National Forest in the Indian Creek watershed (Leinbach 2012). This occurrence is not shown on Map B-5 in Appendix B; however, USFS assumes Wheeler's angelica occurs in the Project area on the Uinta National Forest. Count estimates for each EO were not conducted. More detailed study of Wheeler's angelica would be required to accurately assess potential threats, but the wetland and riparian habitats it occupies are particularly sensitive to weed invasion, livestock trampling, and hydrologic regime changes (NatureServe 2013).

4.4.2 Fish

4.4.2.1 Bonneville Cutthroat Trout

Bonneville cutthroat trout populations are known to occur on both the Manti-La Sal and Uinta National Forests. Potential habitat is present on the Ashley, Manti-La Sal, and Uinta National Forests within 2,000 feet of the agency-preferred route centerline and is crossed by existing forest access roads on all three national forests.

On the Manti-La Sal National Forest, Bonneville cutthroat trout occur in the Cottonwood Creek-San Pitch River, Lower Thistle Creek, Middle Thistle Creek, and Nebo Creek subwatersheds. On the Uinta National Forest, Bonneville cutthroat trout are known to occur in the Tie Fork subwatershed, as well as the Lower, Middle, and Upper Soldier Creek subwatersheds. Bonneville cutthroat trout population trends are stable

overall on the Uinta National Forest. Refer to Appendix B, Map B-6, for potential habitat present in the Project area.

4.4.2.2 Colorado River Cutthroat Trout

On the Manti-La Sal National Forest, Colorado River cutthroat trout occur in the Gooseberry Creek and Indian Creek subwatersheds.

On the Uinta National Forest, Colorado River cutthroat trout occur in the Right Fork White River, Tabbyune Creek-White River, and Willow Creek subwatersheds. The Vat Creek diversion has prevented upstream migration of non-native fish into the West Fork of the Duchesne River (USFS 2011b).

On the Ashley National Forest, Colorado River cutthroat trout occur in aquatic habitats in the South Fork Avintaquin and the Tabbyune Creek-White River subwatersheds. Colorado River cutthroat trout are stocked annually in several lakes across the national forest (Bartlett and Crosby 2005). Management and conservation of the species has contributed to population stability across the national forest (USFS 2009a).

Potential habitat for Colorado River cutthroat trout was identified as all perennial lentic and lotic waters selected from the National Hydrography Dataset (NHD) (USGS 2009) in subbasins (8-digit hydrologic unit code [HUC]) crossed by the agency-preferred route centerlines having documented occurrences of sensitive fish. Refer to Appendix B, Map B-6, for potential habitat present in the Project area.

4.4.2.3 Southern Leatherside Chub

Southern leatherside chub is not known to occur in the Project area on the Manti-La Sal or Uinta National Forests but occurrences do exist in the Project area in the Middle Thistle Creek subwatershed, in Thistle Creek (UNHP 2012). It is possible that given hydrologic connectivity and relative proximity, suitable habitat on the Manti-La Sal and Uinta National Forests supports populations of the species.

Potential aquatic habitat for southern leatherside chub was identified as all perennial lentic and lotic waters selected from the NHD (USGS 2009) in subbasins (8-digit HUC) crossed by reference centerlines having documented occurrences of southern leatherside chub. Refer to Appendix B, Map B-9, for potential habitat present in the Project area.

4.4.3 Amphibians

4.4.3.1 Western Boreal Toad

Western boreal toad is found in wetlands in Utah that are surrounded by a variety of upland vegetation communities, including sagebrush and grassland, pinyon-juniper, mountain shrubs, and coniferous forest at or above 5,151 feet in elevation (UDWR 2005). The Western boreal toad breeds in streams with low velocity and low gradient, off-channel marshes, beaver ponds, small lakes, reservoirs, stock ponds, wet meadows, seeps, and associated woodlands. In higher elevations, Western boreal toads were found in wetlands and streams containing native Bonneville cutthroat trout (Thompson et al. 2004). Terrestrial and breeding habitat is present on both the Manti-La Sal and Uinta National Forests crossed by the agency-preferred route.

Potential breeding habitat for Western boreal toad was identified as perennial lentic, lotic, and spring wetland features selected from the NHD, as well as wetland classes selected from the National Wetlands Inventory, including habitat types of Palustrine Emergent and Riverine Upper and Lower Perennial systems. The selection of habitats is based on life history accounts and reference populations identified in

the EIS. Aquatic and semiaquatic habitats were buffered by 100 and 300 feet to quantify the area of potentially suitable habitats (100-foot buffer) as well as the area of riparian influence (300-foot buffer) in acres. Potential Western boreal toad terrestrial habitat was based on literature review and personal communications with local biologists. Refer to Appendix B, Map B-7, for potential habitat present in the Project area.

4.4.3.2 Columbia Spotted Frog

The Columbia spotted frog is likely to occur in lentic, lotic, riparian, and wetland habitats on the Ashley, Manti-La Sal, and Uinta National Forests. On the Manti-La Sal National Forest, Columbia spotted frog are known to occur in the Oak Creek-San Pitch River subwatershed with major populations inhabiting the San Pitch River. In the Uinta National Forest, Columbia spotted frog are known to occur in the West Creek-Current Creek subwatershed with major populations occurring just outside of the national forest boundary in the Current Creek and Burraston Ponds wetland complex north of Nephi, Utah.

Potential aquatic and semiaquatic habitat for Columbia spotted frog was identified as perennial lentic, lotic, and spring features using the NHD, as well as palustrine emergent, riverine perennial and intermittent, and lacustrine wetland classes selected from the National Wetland Inventory database (FWS 2012). The selection of habitats is based on life history accounts and reference populations identified in the EIS. Refer to Appendix B, Map B-8, for potential habitat present in the Project area.

4.4.4 Wildlife

4.4.4.1 Bald Eagle

Bald eagles are widely distributed across North America and may occur throughout Utah wherever suitable habitat is present. Most often, bald eagles are winter visitors but successful nests have been documented in Utah, usually in proximity to a large waterbody (UNHP 2012). Typical bald eagle nesting, wintering, and roosting habitats associated with riparian, wetland, montane, agriculture, and cliff types occur throughout the Project area. Bald eagles are opportunistic feeders and do not show any preference in foraging habitat (Buehler 2000).

Potential bald eagle nesting, wintering and roosting, and foraging habitats were identified using reclassified GAP landcover (EPG 2013b). Potential nesting, wintering, and roosting habitat was identified in riparian, wetland, montane forest, agriculture, and two ecological systems in the GAP dataset: the Inter-Mountain Basins Cliff and Canyon and the Rocky Mountain Cliff, Canyon and Massive Bedrock ecological system. Due to the lack of preferred foraging habitat, potential foraging habitat was identified in every landcover occurring in the Project area.

Potential nesting, wintering, and roosting habitats occur throughout the Project area on all three national forests. Potential foraging habitat includes the entire Project area, and the centerline of the agency-preferred route crosses potential foraging habitat on USFS-administered land. Refer to Appendix B, Map B-10, for potential habitat present in the Project area.

4.4.4.2 Flammulated Owl

The distribution of flammulated owl ranges from southern British Columbia to El Salvador and may occur throughout Utah wherever suitable habitat is present. Flammulated owl nests and forages primarily in open pine and fir forests at mid elevations (Hayward 1994), but studies in northern Utah (Marti 1997) indicate the use of montane aspen forests.

Potential flammulated owl habitat was identified using the reclassified GAP landcovers for aspen and montane forest (EPG 2013b). In the Project area, potential habitat is mostly restricted to upper elevations and is present on all three national forests. Refer to Appendix B, Map B-11 for potential habitat present in the Project area.

4.4.4.3 Northern Goshawk

Northern goshawk is widely distributed across North America and may occur in Utah wherever suitable habitat is present. Northern goshawk nests in a variety of forested habitats, preferring to nest in mature conifer and aspen stands, but occasionally nesting in riparian cottonwood galleries (Graham et al. 1999). Post-fledging areas (PFAs) crucial to the development and success of young hawks surround nesting sites and usually occupy mature conifer and aspen stands similar to suitable nesting habitat (Reynolds et al. 1992). Northern goshawk prey on a wide range of species, and suitable foraging habitat includes not only forested areas, but vegetation communities interspersed with and adjacent to forested areas.

Potential northern goshawk foraging and nesting habitats were identified using reclassified GAP landcover (EPG 2013b). Potential nesting habitat was identified in aspen, montane forest, ponderosa pine, and riparian vegetation communities; potential foraging was identified in shrub/shrub steppe, pinyon-juniper, mountain shrub, big sagebrush, riparian, aspen, and two ecological systems in the GAP dataset: disturbed/succession- recently chained pinyon-juniper and disturbed, non-specific. Potential nesting and foraging habitat models based on landcover predict nesting and foraging habitat to occur throughout the Project area on each of the national forests. Potential nesting habitat is present mostly on USFS-administered land in small patches of cottonwoods along the White River, Price River, Spanish Fork River, and Soldier Creek. Potential foraging habitat covers a large extent of the Project area, and the centerline of the agency-preferred route crosses potential foraging habitat on USFS-administered land. Refer to Appendix B, Map B-12, for occurrences and potential habitat present in the Project area.

Several PFAs and known nesting sites also exist in the vicinity of the Project on USFS-administered land; however, no PFAs or nests are crossed by the centerline of the agency-preferred route. Both the nearest nest and PFA occur on the Uinta National Forest. The nearest nest to the agency-preferred route is 1.6 miles north in Indian Creek Canyon (UNHP 2012) and the nearest PFA is 5.2 miles north along the Strawberry Ridge (USFS 2011c).

4.4.4.4 Peregrine Falcon

Peregrine falcons are cosmopolitan in distribution and may occur in Utah wherever suitable nesting habitat is present. Peregrine falcon(s) typically nest(s) on broad ledges on tall cliffs but have been documented nesting on manmade structures and existing stick nests (Tordoff 2000; Cade 1961). Research indicates that other factors—including prey density, topographic relief, and proximity to permanent surface water—may influence nest selection and success (Ellis 1982). Peregrine falcons prey on a wide range of bird species, and suitable foraging habitat includes open terrain with a large concentration of birds (i.e., riparian corridors, grasslands, and bodies of open water).

Potential peregrine falcon nesting and foraging habitats were identified using reclassified GAP landcovers and existing classifications in the GAP dataset (EPG 2013b). Potential nesting habitat was identified in three ecological systems in the GAP dataset: Inter-Mountain Basins Cliff and Canyon, Rocky Mountain Cliff, Canyon and Massive Bedrock, and Western Great Plains Cliff and Outcrop. Potential foraging habitat was identified in riparian and grasslands. Potential nesting and foraging habitat was identified throughout the Project area and is present on all three national forests. Distribution of both habitats in the Project area is limited to small patches relatively isolated from each other. Refer to Appendix B, Map B-13, for potential habitat present in the Project area.

Documented nests do exist in the vicinity of the Project on USFS-administered land; however, the nearest is located near Provo Canyon, 15 miles north of the agency-preferred route (UNHP 2012). Other nests near Castle Dale are located closer to the agency-preferred route, approximately 7 miles south, near Helper, but these do not occur on USFS-administered land.

4.4.4.5 Three-toed Woodpecker

Three-toed woodpecker is widely distributed across northern North America and extends south to New Mexico along the Rocky Mountains (NatureServe 2013). In Utah, three-toed woodpecker is restricted to high-elevation conifer forests, usually dominated by spruce or lodgepole pine (NatureServe 2013).

Potential three-toed woodpecker habitat was identified using reclassified GAP landcover in montane forest vegetation communities (EPG 2013b). Potential habitat is present on the Ashley, Manti-La Sal, and Uinta National Forests, but exists in the Project area as small, isolated patches. Refer to Appendix B, Map B-14, for potential habitat present in the Project area.

4.4.4.6 Spotted Bat and Townsend's Big-eared Bat

Both spotted bat and Townsend's big-eared bat are widely distributed across western North America, ranging from central Mexico into British Columbia, but are patchily distributed on a local scale being restricted by available roosting habitat (Luce 2007 and Gruver 2006) Extensive surveys for both species have not been conducted in Utah, but historic collections and data from other states indicate both species are likely to occur throughout the state wherever suitable habitat is present (Oliver 2000). Both species roost in shallow caves or rock crevices and show no preference for foraging habitat (Oliver 2000).

Potential foraging and roosting habitat were identified through GAP landcover (EPG 2013b). Potential roosting habitat was identified as three ecological system types: Intermountain Basins Cliff and Canyon, Rocky Mountain Cliff, Canyon and Massive Bedrock, and Western Great Plains Cliff and Outcrop. Because both bat species show no preference in foraging habitat, potential foraging habitat was identified as every GAP landcover encompassing the Project area. Potential roosting habitat is on all three national forests, with the bulk occurring on the Ashley National Forest and the Tavaputs Plateau. Potential roosting habitat is very limited in the Project area on the Manti-La Sal and Uinta National Forests, mostly occurring as small (less than 50-acre), isolated patches. Refer to Appendix B, Map B-15, for occurrences and potential habitat present in the Project area.

Several observations and collections for both species occur on the Ashley, Manti-La Sal, and Uinta National Forests (UNHP 2012). The nearest observation of spotted bat is located near Chokecherry Canyon, 3.8 miles northeast of the agency-preferred route on the Ashley National Forest. The nearest observation of Townsend's big-eared bat is located above Salt Creek, 5.1 miles north of the agency-preferred route on the Uinta National Forest.

5.0 Effects of the Proposed Project

5.1 Direct Effects

5.1.1 Plants

Vegetation would be cleared prior to construction of access roads, tower sites, and work areas. Tall-growing vegetation (greater than 12 feet in height) would be removed from within the right-of-way throughout the life of the Project to allow for safe operation of the transmission line. Other impacts could include crushing of vegetation during construction, operation, and maintenance as a result of movement of public and construction vehicles off of areas cleared and maintained for vehicle access and

construction activities. These Project activities would result in individual plant mortalities, habitat alteration, and habitat loss in cases where avoidance mitigation measures cannot be implemented. If sensitive plant-occupied habitat cannot be avoided, loss of individuals and suitable habitat would occur in the portion of the right-of-way where roads and tower work areas would be located.

5.1.2 Fish and Amphibians

Direct effects on fish and aquatic resources would include mortality of individuals and modification of aquatic (lentic and lotic) and semiaquatic (wetland and riparian) habitats resulting from construction, operation, and maintenance of permanent Project facilities, including access roads, ancillary facilities, and transmission line towers (i.e., individuals crushed by vehicles and grading or blading activities that permanently remove habitat).

Construction of temporary Project facilities on USFS-administered land could require crossing numerous lotic habitats; potentially a few lentic habitats; and few, if any, wetland or riparian habitats supporting sensitive fish and/or aquatic species. Often, these crossings require the temporary placement of fill material (e.g., log bunks, crane pads, rock, soil, bridge pilings, culverts, wing walls, etc.) to provide a structure sufficient to support construction equipment and materials, while at the same time reducing potential environmental impacts, including those potential impacts on fish and aquatic species and their associated aquatic and semiaquatic habitats. Temporary stream or wetland crossing also may be required for the movement of equipment and materials across sensitive habitats.

5.1.3 Wildlife

Behavioral disturbance and displacement of wildlife, due to construction noise and the presence of humans and construction equipment activities, in areas in and adjacent to the right-of-way could occur during construction. Mortality of wildlife could occur during construction and maintenance if wildlife is crushed by or collides with moving construction equipment. Birds and bats may be lost due to collisions with the transmission line and other Project features during operation of the transmission line. Additionally, construction of access roads and the transmission line could result in loss, modification, and fragmentation of existing wildlife habitats, affecting their ability to satisfy the forage and shelter needs of wildlife.

Raptors could experience modification of foraging and nesting habitat due to construction of access roads and tower structures. Vegetation clearing and maintenance in the Project right-of-way also could modify or remove foraging and nesting habitat. Birds may abandon nests during breeding seasons as a result of increased stress from human presence and construction activities; however, such impacts would be mitigated through seasonal restrictions and active nest buffers (Appendix D of the EIS). Construction of tall structures that could be used by raptors for perching or nesting in habitats where perches are otherwise limited could increase raptor hunting and nesting success.

5.2 Indirect Effects

5.2.1 Plants

Project-related construction and maintenance activities, in addition to construction of access roads that could be used by the public for motorized access to previously inaccessible areas, could affect sensitive plant habitat in the Project area by introducing or spreading weeds and non-native plant species. These activities also potentially could alter the frequency of wildland fire in the Project area due to increased risk of fire ignition due to vehicle use, human presence, and spread of non-native plant species.

Construction and maintenance activities, along with an overall increase in the number and usage of roads, may increase the amount of dust generated around sensitive plant habitat; potentially altering the local plant productivity and natural pollination processes. Design features of the Project (as described in Table B-1 of Appendix A) would help reduce the risk of spreading noxious weeds and the risk of fire ignition due to vehicle use and human presence. These design features include development of a Noxious Weed Management Plan (Design Feature 14) and development of a Fire Protection Plan (Design Feature 5) in coordination with the agencies as part of the Plan of Development (POD).

5.2.2 Fish and Amphibians

Indirect effects on fish resources resulting from construction, operation, and maintenance of the Project may occur as a result of activities that increase the probability of erosion near aquatic habitats and subsequent sedimentation to those habitats as well as those activities that result in short-term modification of habitats supporting fish and amphibian species.

Ground-disturbing activities that alter natural channel morphology, substrate composition, and stability and those activities that would compact or decompact soils or remove riparian vegetation in proximity to fish and aquatic habitats could result in increased sediment loads, removal of water filtering and shading vegetation (wetlands or riparian vegetation), accidental spills of environmentally harmful materials (fuel, oil, concrete, etc.), and/or introduction of aquatic invasive species. All indirect effects would result in a reduction in fish and amphibian species fitness, reproductive potential (fecundity), survivability, and long-term adaptability.

5.2.3 Wildlife

Construction of the transmission line, access roads, and other Project facilities could fragment wildlife habitat, increase the potential for spread of noxious weeds, and increase the frequency of human-caused wildfires. Habitats affected by wildfires often take several years to recover and provide for the forage and shelter needs of wildlife. Construction of new access roads and associated increases in human visitation could cause disturbance of wildlife as well as increases in hunting and poaching pressure due to increased motorized access in habitats rarely visited by humans in their existing condition. Public access on newly constructed roads would be restricted to the extent feasible. Small mammals, passerines, game birds, and other raptor prey species could experience increased predation due to use of transmission structures by raptors as perches in habitats with otherwise limited perching opportunities. These impacts may cause degradation and abandonment of wildlife habitat and alter predator-prey relationships, which potentially could affect the carrying capacity of habitats in the Project area.

5.3 Cumulative Effects

The geographic scope of cumulative effects analysis areas for biological resources addressed in this BE are detailed in Table 3. The temporal scope of the analysis includes 2 years for direct and indirect impacts associated with Project construction. The culmination of Project effects along with other past, present, and reasonably foreseeable future actions could result incrementally in adverse effects, such as habitat fragmentation, loss of available habitat, decreased habitat quality, and loss of individuals. The quality and quantity of specific habitat types associated with wildlife are necessary for maintaining viable populations of sensitive wildlife species on the national forests. Beneficial effects also could result from past, present, and reasonably foreseeable future actions. The Applicant's proposed action does not include plans to decommission the Project; therefore, the temporal scope of analysis for impacts associated with operation and maintenance of the Project is based on the assumption that the effects of operating and maintaining the transmission line after construction would be permanent.

TABLE 3 CUMULATIVE EFFECTS ANALYSIS AREAS AND RATIONALE		
Common Name	**Rationale**	**Cumulative Effects Analysis Area (distance on either side of centerline)**
Plants		
Canyon sweet-vetch	Watershed boundaries would capture potential downslope effects on sensitive plant species.	6th Level Hydrologic Unit Code [1]
Goodrich's blazingstar		
Green River greenthread		
Untermann's daisy		
Wheeler's angelica		
Fish		
Bonneville cutthroat trout	Watershed boundaries would capture potential downstream effects on aquatic species.	6th Level Hydrologic Unit Code [1]
Colorado River cutthroat trout		
Southern leatherside chub		
Amphibians		
Western boreal toad	Typical dispersal distance from breeding habitats	1.55 to 1.86 miles from breeding habitats (Utah Division of Wildlife Resources 2005)
Columbia spotted frog	Potential riparian breeding habitat	Adjacent to crossed streams (U.S. Forest Service [USFS] 2005)
Birds		
Bald eagle	Two times the recommended 0.5-mile buffer for the species (U.S. Fish and Wildlife Service 2007)	1 mile from either side of the centerline, where the centerline crosses USFS-administered land
Flammulated owl	Two times the recommended 0.25-mile buffer for the species (Romin and Muck 2002)	0.5 mile from either side of the centerline, where the centerline crosses USFS-administered land
Northern goshawk	Average hunting range from nest (Squires and Kennedy 2006)	Known nest locations 1 mile from either side of the centerline, where the centerline crosses USFS-administered land
	Farthest recorded breeding range from nest (Squires and Kennedy 2006)	Nesting and foraging habitat- 6 miles from either side of the centerline, where the centerline crosses USFS-administered land
Peregrine falcon	Nest buffer: average hunting range of up to 2 miles from nesting cliff sites (U.S. Fish and Wildlife Service 1984)	2 miles from either side of the centerline, where the centerline crosses USFS-administered land
Three-toed woodpecker	Diameter of occupied territory (NatureServe 2013) Active nests identified through surveys require a 30-acre buffer (USFS 2003)	2,026 feet from either side of the centerline, where the centerline crosses USFS-administered land
Mammals		
Spotted bat and Townsend's big-eared bat	2 times known 1.5- mile roosting habitat distance from roost (Gruver and Keinath 2006, Luce and Keinath 2007)	Roosting habitat- 3 miles from either side of the centerline, where the centerline crosses USFS-administered land
	Known foraging distance from day roost (Wackenhut and McGraw 1998)	Foraging habitat- 6 miles from either side of the centerline, where the centerline crosses USFS-administered land
NOTE: [1] Hydrologic Unit Code areas are regions delineated by drainage areas starting at the mouth of the water body and proceeding to follow the highest elevation of land that divides the direction of surface water flow or watershed areas. They are crossed by the proposed route in national forest boundaries (U.S. Geological Survey 2012).		

5.3.1 Past, Present, and Reasonably Foreseeable Future Activities Relevant to Cumulative Effects Analysis

Past, present, and reasonably foreseeable future actions that contribute to cumulative effects have been identified and assessed for projects in the vicinity of the agency-preferred route and potential Project access roads. Projects considered for the cumulative effects analysis include those that may affect the loss of species habitat and the long-term sustainability of species populations. Projects evaluated under the cumulative effects analysis include the proposed installation of a fiber optic telephone line, construction of proposed 500kV electric transmission lines, construction and maintenance activities associated with several petroleum pipelines, development and operation of several oil and/or gas leases, coal and other mines, potential transportation improvements, including interstate roadways, intra-state highways or heavy railroad routes, and potential large diameter pipelines.

5.3.1.1 Sensitive Plants

The temporary and permanent effects of the Project on sensitive plant species would contribute cumulatively to the effects of past and future loss, fragmentation, and modification of sensitive plant species habitat in the cumulative effects analysis area. Other current and future actions that include wildfire management, agricultural and residential development, continued livestock grazing, OHV use, recreational use, noxious weed infestation and wildlife habitat management also would affect habitat for sensitive plant species in the cumulative effects analysis area.

Based on consideration of the extent of sensitive plant habitat that would be modified relative to habitat that is available, the proposed Project, in combination with present and reasonably foreseeable future actions, would not contribute to cumulative impacts on sensitive species plant resources that would result in a significant loss of sensitive plant species habitat resource functions or values in the cumulative effects analysis area.

5.3.1.2 Fish and Amphibians

Direct and indirect effects from the construction, operation, and maintenance of the Project would contribute to the effects of past, present, and reasonably foreseeable future actions on habitat potentially supporting or known to support sensitive fish and amphibians. The culmination of Project effects along with other past, present, and reasonably foreseeable future actions could result incrementally in adverse effects, such as habitat fragmentation, loss of available habitat, decreases in habitat quality, and loss of individuals. Beneficial effects also could result from past, present, and reasonably foreseeable future actions. Habitat improvement projects, including riparian and aquatic improvements could result in improved habitat conditions for sensitive fish and amphibian species.

Ground disturbance during construction may contribute cumulatively to sediment loading in streams that provide habitat for fish, amphibians, and other aquatic organisms in the cumulative effects analysis area. The incremental contribution of the proposed Project to cumulative sedimentation impacts is expected to be minor as avoidance (spanning) of aquatic features and implementation of storm water pollution prevention measures are included as design features of the Project.

5.3.1.3 Wildlife

Implementation of the proposed Project would result in cumulative impacts on fish and wildlife and habitats that support them in the cumulative effects analysis areas. Terrestrial habitat values for some species would be restored in many areas scheduled for temporary disturbance during Project construction and following successful reclamation, thereby reducing the overall magnitude of cumulative impacts on fish and wildlife. Future actions that include continued livestock grazing, agricultural and residential

development, wildlife habitat management, and wildfire management also would affect wildlife in the cumulative effects analysis areas.

The Project also would contribute to the cumulative impacts of human activity and anthropogenic noise on wildlife behavior in the area of potential Project effects and may result in modification of existing patterns of seasonal distribution and habitat use at some locations in the Project area. The magnitude of these cumulative effects would vary in direct proportion to the extent of Project-related construction and maintenance activities in wildlife habitats and cannot be quantified. Seasonal activity restrictions have been incorporated as selective mitigation in areas where wildlife may be most vulnerable to human activity during critical periods of their life cycles (e.g., nesting and brooding season).

5.4 Effects on Sensitive Plant Species

5.4.1 Effects Common to All Sensitive Plant Species

5.4.1.1 Direct Effects on Sensitive Plant Species

Direct effects (physical impacts) on the Region 4 sensitive plants considered in this BE would occur during construction of new access roads, widening or improvement of existing roads, and developing work areas (structure pads and pulling and tensioning sites). Any of these ground-disturbing activities could result in loss of plants through crushing or uprooting, altered growth, or reduced seed set. The magnitude of the direct effects on populations of these plants is dependent on the intensity and timing of disturbance relative to plant phenology (e.g., before or after seed set), as well as the number of plants at a specific location and the proportion of the population affected. Repeated physical disturbance and damage to native plants and soils can lead to the degradation of habitat and eventually to the replacement of native plant species (including the identified sensitive plants) with species more adapted to frequent disturbance, such as invasive weeds.

Widening of access roads may result in permanent loss of habitat on roadside margins. Work areas where only temporary ground disturbance would occur may be repopulated by dispersal of seed from the seed bank on the site and in surrounding areas and through topsoil salvage and replacement in work areas postconstruction.

5.4.1.2 Indirect Effects on Sensitive Plant Species

Indirect effects of the Project on Region 4 sensitive plants are those that would be separated temporally or geographically from Project activities. Indirect effects of transmission line construction may include changes in vegetation species composition as a result of physical modification of habitats, fragmentation of existing plant communities, and plant invasions that may reduce native plant vigor and cover. Once established, noxious weeds and other invasive species have the potential to affect sensitive plants directly through competition for nutrients, light, and water as well as through allelopathy[1] in some cases. Design features of the Project (as described in Appendix A) would help reduce the risk of spreading invasive species and noxious weeds due to vehicle use and human presence. A Noxious Weed Management Plan is included in the POD.

Soil compaction during construction activities can result in reduced precipitation infiltration, consequently lowering soil moisture and reducing rates of seed germination, seedling survival, and plant and root growth. The effects of soil compaction and erosion on plants also can include undercutting of root systems, burial by erosional debris, and reduction of the biological capability of the soil by physical modification and stripping of fertile layers.

[1]The production and release of chemical compounds by plants that inhibit the growth of other plants.

Fugitive dust resulting from increased motorized vehicle use during Project construction also has been shown to decrease native plant cover and vigor by reducing rates of photosynthesis, respiration, transpiration, and water-use and uptake efficiency in plants. On heavily traveled roads, dust impacts have been documented up to 32 feet (10 meters) from the roadside and dust layers of up to 4 inches (10 centimeters) thick found on mosses and other vegetation of low stature.

Most of the plant species considered in this analysis occupy dry, barren ridges, but both canyon sweet-vetch and Wheeler's angelica occur in areas characterized by shallow groundwater (NatureServe 2013). Project activities may affect these species by changing hydrologic regimes through altering runoff patterns, changing local topography, and increasing sedimentation.

5.4.1.3 Cumulative Effects on Sensitive Plant Species

Past, present, and future activities have altered and will continue to alter the sensitive plant occurrences in the cumulative effects analysis area, which includes all known occurrences or suitable habitat affected by the Project (Table 3). These activities include OHV use, grazing, fire suppression, mining, recreational use, road construction, and noxious weed infestation.

The additive effects of past actions, such as OHV use, wildfires, wildfire suppression, mining, non-native plant introductions, and ranching, have shaped the present landscape and the occurrences of the sensitive plants considered in this analysis. However, data describing the past distribution and abundance of these sensitive plant species are extremely limited, making it impossible to quantify the effects of historic activities on the resources and conditions present today. Of the species considered in this BE, only a few have been surveyed in the past decade (Franklin 2005). In many cases, even when past project-level surveys were conducted, there is very little documentation that describes whether past projects avoided or protected these species during project implementation. Construction of new access roads and vegetation clearing areas (e.g., structure pads, tensioning and pulling stations) could result in an increase of user-created OHV trails on disturbed areas. Effects on sensitive plants and native vegetation from OHV use are often tied to soil impacts. Soil compaction, erosion, and modification of soil properties can affect the distribution, abundance, growth rate, reproduction, and size of plants.

Present and future activities that would occur as a result of transmission line construction would affect occurrences of the sensitive plant species considered in this analysis. These activities would include road maintenance and increased levels of OHV use. The effects of other future activities (i.e., grazing, mining, future transmission line projects) would likely be similar to those described in this analysis. The incremental contribution of the Project to cumulative effects on these species will be minimized through implementation of Project-specific mitigation measures, including field surveys, protection of known sensitive plant species locations, and noxious weed management measures.

5.4.2 Canyon Sweet-vetch

5.4.2.1 Effects

Potential canyon sweet-vetch habitat is present on the Manti-La Sal and Uinta National Forests. The agency-preferred route would cross potential canyon sweet-vetch habitat on the Uinta National Forest for 0.1 mile, resulting in up to 2 acres of disturbance to potential habitat. This accounts for a very small portion of available habitat (less than 0.1 percent) in the cumulative impacts analysis area. No potential habitat would be crossed by the centerline of the agency-preferred route on the Manti-La Sal National Forest; therefore, no impacts on canyon sweet-vetch are expected on the Manti-La Sal National Forest as a result of Project activities. All known occurrences of canyon sweet-vetch on USFS-administered land are approximately 20 miles south of the agency-preferred route near East Mountain on the Manti-La Sal National Forest.

Where the centerline of the agency-preferred route passes near the Manti-La Sal and Uinta National Forests, existing access roads on and near the national forests may be used for Project activities. Use of these access roads could require blading, widening, importing road surface material, and developing new roads to access construction sites.

On the Uinta National Forest, use of these roads is not expected to result in impacts on potential habitat as nearby potential habitat is located across the Spanish Fork Canyon and is topographically separated from the Uinta National Forest by Soldier Creek and US Highway 6. On the Manti-La Sal National Forest, access-road use may result in impacts on potential habitat at an area in Spanish Fork Canyon near Lake Fork. Potential habitat at this location exists nearly 40 miles from the nearest known occurrence and outside typical distribution (Welsh et al. 2008). Given the low probability of canyon sweet-vetch occurring at this location, Project-related use of access roads on the Manti-La Sal National Forest is unlikely to result in impacts on canyon sweet-vetch.

Disturbance to canyon sweet-vetch potential habitat and individual canyon sweet-vetch plants could occur as result of Project activities. Potential Project effects on canyon sweet-vetch are summarized in Section 5.4, but include loss of individuals and habitat, habitat degradation, and adverse impacts on individuals.

5.4.2.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on canyon sweet-vetch. Design Features 1, 2, 3, 5, 9, 26, 27, 28, and 30 and Selective Mitigation Measures 1, 2, 3, 5, 7, and 15 (refer to Appendix A) are applicable to activities in proximity to sensitive plant habitats and would be used to reduce impacts on canyon sweet-vetch.

Prior to any ground-disturbing activities, focused, intuitive surveys of all access roads, work areas, and tower sites would be conducted in areas where canyon sweet-vetch may occur to identify the exact location of canyon sweet-vetch individuals (Design Feature 3).

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or special reclamation measures (e.g., seed collection and transplanting) (Design Feature 3). Canyon sweet-vetch populations and individuals would be avoided or spanned where feasible (Design Feature 9 and Selective Mitigation Measure 7). Where avoidance is not feasible, the transmission line would be designed to avoid and minimize effects on the species. Approval by the USFS would be required for any activities occurring near occupied habitat.

Other measures that may be implemented to avoid and minimize impacts on the species may include minimizing vegetation clearing to reduce impacts on habitat (Design Feature 1), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), restricting travel to existing access roads (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), implementing actions to control the spread of noxious weeds (Design Feature 5), limiting the widening of existing roads (Selective Mitigation Measure 1), and aligning new access roads to reduce erosion and minimize impacts on canyon sweet-vetch (Selective Mitigation Measure 3). Application of additional measures could include requiring dust abatement; implementing erosion controls; monitoring construction activities in proximity to individuals; and informing all Project personnel of the importance, purpose, necessity and regulation of protecting natural resources.

Following construction, reclamation would occur as required by the USFS (Design Feature 2). This could include recontouring areas of ground disturbance, reseeding using a USFS approved seed mix, developing

seed mixes to maximize canyon sweet-vetch recruitment in occupied habitat that is disturbed, rehabilitating or gating access roads to limit public access to reduce OHV-related impacts on canyon sweet-vetch (Selective Mitigation Measures 5 and 15). Postconstruction monitoring to determine the necessity of weed control and reseeding efforts may occur if impacts occur in proximity to individuals.

The USFS will not authorize any action that results in a greater than 15 percent cumulative disturbance to individuals of a sensitive plant species within a land planning unit. Cumulative effects would be assessed using counts or estimates of individuals occurring within the Project footprint relative to counts or estimates of individual occurring in occupied habitat. Individual abundance and limits of occupied habitat would be determined during preconstruction surveys. Cumulative impacts on occupied habitat from other past and present actions and reasonably foreseeable future actions also would be assessed on site-specific survey results, if available. The USFS also may provide additional mitigation measures based on the results of the preconstruction surveys. These measures could include monitoring requirements and seed collection.

5.4.2.3 Cumulative Effects

A summary of cumulative impacts on canyon sweet-vetch is presented in Table 4.

TABLE 4
SUMMARY OF CUMULATIVE EFFECTS ON CANYON SWEET-VETCH HABITAT IN ACRES

	Manti-La Sal National Forest	Uinta National Forest	Ashley National Forest
Project-related disturbance on U.S. Forest Service-administered land	–	2	–
Incremental Project-related disturbance in cumulative effects analysis area	–	79	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	–	854	–
Potentially suitable habitat in the cumulative effects analysis area	–	24,697	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	–	23,764	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.

On the Uinta National Forest, about 3.8 percent of potential canyon sweet-vetch habitat in the cumulative impact assessment areas for the agency-preferred route has been, or will be, disturbed by past, present, or future activities. Incremental disturbance resulting from Project activities would affect less than 0.1 percent of total available canyon sweet vetch habitat and minimally contribute to overall cumulative development. The centerline of the agency-preferred route does not cross potential habitat on the Ashley or Manti-La Sal National Forest. As such, cumulative effects were not identified in the cumulative impact analysis or included in Table 4.

Impacts on potential habitat on the Manti-La Sal National Forest resulting from the use or creation of access roads on the forest may occur. These impacts are expected to contribute minimal amounts of disturbance relative to the total available potential habitat. Furthermore, the habitat potentially affected is unlikely to be occupied by canyon sweet-vetch.

Past, present, and future activities have altered and will continue to alter the sensitive plant occurrences in the cumulative effects analysis area. These activities include OHV use, grazing, fire suppression, recreational use, road construction, and noxious weed infestation and are described in more detail in Section 5.4.1.

5.4.2.4 Determination

Construction, operation, and maintenance of the Project could affect individual canyon sweet-vetch plants and potential habitat in and around the proposed right-of-way, but would not result in a loss of viability on the Manti-La Sal or Uinta National Forests or cause a trend toward federal listing of the species.

5.4.3 Goodrich's Blazingstar

5.4.3.1 Effects

The agency-preferred route does not cross any potential Goodrich's blazingstar habitat on USFS-administered land. The nearest potential habitat to the agency-preferred route exists on the slopes of Argyle Canyon approximately 1 mile from the centerline of the agency-preferred route, located outside of USFS-administered land. The nearest potential habitat to the agency-preferred route on USFS-administered land is approximately 3.2 miles from the route at the head of Sowers Canyon on the Ashley National Forest. The closest known occurrences of Goodrich's blazingstar to the agency-preferred route on the Ashley National Forest are located on the ridgeline separating Argyle and Sowers canyons 1.5 miles north. Potential Goodrich's blazingstar habitat or occurrences are not present on the Uinta or Manti-La Sal National Forests.

Where the centerline of the agency-preferred route passes near the southeast corner of the Ashley National Forest, existing access roads on and near the forest may be used for Project activities. Use of these access roads could require blading, widening, importing road surface material, and developing new roads to access construction sites. These roads would not be expected to affect any known occurrences or potential habitat.

In the event that Goodrich's blazingstar is present in areas of the Ashley National Forest affected by the Project (including access road improvement and development), impacts on individuals may occur. Potential impacts on Goodrich's blazingstar are summarized in Section 5.4 and may include loss of individuals and habitat, habitat degradation, and other adverse impacts on individuals.

5.4.3.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Goodrich's blazingstar. Design Features 1, 2, 3, 5, 9, 26, 27, 28, and 30 and Selective Mitigation Measures 1, 2, 3, 5, 7, and 15 (refer to Appendix A) are applicable to activities in proximity to sensitive plant habitats and would be used to reduce impacts on Goodrich's blazingstar.

Prior to any ground-disturbing activities, focused, intuitive surveys of all access roads, work areas, and tower sites would be conducted in areas where Goodrich's blazingstar may occur to identify the exact location of Goodrich's blazingstar individuals (Design Feature 3).

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or special reclamation measures (e.g., seed collection and/or transplanting) (Design Feature 3). Goodrich's blazingstar populations and individuals would be avoided or spanned

where feasible (Design Feature 9 and Selective Mitigation Measure 7). Where avoidance is not feasible, the transmission line would be designed to avoid and minimize effects on the species. Approval by the USFS would be required for any activities occurring near occupied habitat.

Other measures that may be implemented to avoid and minimize impacts on the species may include minimizing vegetation clearing to reduce impacts on habitat (Design Feature 1), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), restricting travel to existing access roads (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), implementing actions to control the spread of noxious weeds (Design Feature 5), limiting the widening of existing roads (Selective Mitigation Measure 1), and aligning new access roads to reduce erosion and minimize impacts on Goodrich's blazingstar (Selective Mitigation Measure 3). Application of additional measures could include requiring dust abatement; implementing erosion controls; monitoring construction activities in proximity to individuals; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, reclamation would occur as required by the USFS (Design Feature 2). This could include recontouring areas of ground disturbance, reseeding using a USFS approved seed mix, developing seed mixes to maximize Goodrich's blazingstar recruitment in occupied habitat that is disturbed, and rehabilitating or gating access roads to limit public access to reduce OHV-related impacts on Goodrich's blazingstar (Selective Mitigation Measures 5 and 15). Postconstruction monitoring to determine the necessity of weed control and reseeding efforts may occur if impacts occur in proximity to individuals.

The USFS will not authorize any action that results in a greater than 15 percent cumulative disturbance to individuals of a sensitive plant species within a land planning unit. Cumulative effects would be assessed using counts or estimates of individuals occurring within the Project footprint relative to counts or estimates of individuals occurring in occupied habitat. Individual abundance and limits of occupied habitat would be determined during preconstruction surveys. Cumulative effects would be assessed on occupied habitat as identified during preconstruction surveys. Cumulative impacts on occupied habitat from other past and present actions and reasonably foreseeable future actions also would be assessed on site-specific survey results, if available. The USFS also may provide additional mitigation measures based on the results of the preconstruction surveys. These measures could include monitoring requirements and seed collection.

5.4.3.3 Cumulative Effects

The centerline of the agency-preferred route does not cross potential habitat on USFS-administered land, and impacts on Goodrich's blazingstar resulting from the use or creation of access roads are not anticipated to result in disturbance to potential habitat. As such, Project-related activities are not expected to contribute to the cumulative impacts on Goodrich's blazingstar.

Past, present, and future activities have altered and will continue to alter the sensitive plant occurrences in the cumulative effects analysis area. These activities include OHV use, grazing, fire suppression, oil and gas development, recreational use, road construction, and noxious weed infestation and are described in more detail in Section 5.4.1.

5.4.3.4 Determination

Construction, operation, and maintenance of the Project along the proposed route could affect individual Goodrich's blazingstar plants and habitat, but would not result in a loss of viability on the Ashley National Forest or cause a trend toward federal listing of the species.

5.4.4 Green River Greenthread

5.4.4.1 Effects

Potential habitat exists on all three national forests, but only would be crossed by the centerline of the agency-preferred route on the Uinta National Forest. The agency-preferred route crosses 4.8 miles of Green River greenthread potential habitat on the Uinta National Forest, resulting in potential impacts on 88 acres of potential habitat. This potentially affected habitat accounts for a very minor (0.4 percent) amount of total potential habitat. No known occurrences of Green River greenthread are within 1 mile of the centerline of the agency-preferred route on the Ashley, Manti-La Sal, or Uinta National Forests. The nearest occur on the south facing badlands below Anthro Mountain along Argyle Canyon, approximately 1.5 miles north of the agency-preferred route.

Where the centerline of the agency-preferred route passes near the Ashley and Uinta National Forest, existing access roads on and near the forests may be used for Project activities. Use of these access roads could require blading, widening, importing road surface material, and developing new roads to access construction sites. These roads are not expected to affect any known occurrences as the nearest occurrence is 2.1 miles west, but would cross potential habitat. The areas where these impacts may occur are geographically limited, each measuring approximately 1,000 feet by 2,500 feet, and account for a very minor portion of total potential habitat. Any impacts on potential habitat resulting from Project-related use of access roads on USFS-administered land are expected to be minimal in extent. The use or creation of access roads on the Manti-La Sal National Forest would occur at locations far from potential habitat, more than 10 miles, and is not expected to result in impacts on Green River greenthread.

Disturbance to Green River greenthread potential habitat and individuals could occur as result of Project activities. Potential Project effects on Green River greenthread are summarized in Section 5.4, and may include loss of individuals and habitat, habitat degradation, and other adverse impacts on individuals.

5.4.4.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Green River greenthread. Design Features 1, 2, 3, 5, 9, 26, 27, 28, and 30 and Selective Mitigation Measures 1, 2, 3, 5, 7, and 15 (refer to Appendix A) are applicable to activities in proximity to sensitive plant habitats and would be used to reduce impacts on Green River greenthread.

Prior to any ground-disturbing activities, focused, intuitive surveys of all access roads, work areas, and tower sites would be conducted in areas where Green River greenthread may occur to identify the exact location of Green River greenthread individuals (Design Feature 3).

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or special reclamation measures (e.g., seed collection, transplanting) (Design Feature 3). Green River greenthread populations and individuals would be avoided or spanned where feasible (Design Feature 9 and Selective Mitigation Measure 7). Where avoidance is not feasible, the transmission line would be designed to avoid and minimize effects on the species. Approval by the USFS would be required for any activities occurring near occupied habitat.

Other measures that may be implemented to avoid and minimize impacts on the species may include minimizing vegetation clearing to reduce impacts on habitat (Design Feature 1), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), restricting travel to existing access roads (Selective Mitigation Measure 2), restricting the storage of hazardous materials

(Design Feature 30), implementing actions to control the spread of noxious weeds (Design Feature 5), limiting the widening of existing roads (Selective Mitigation Measure 1), and aligning new access roads to reduce erosion and minimize impacts on Green River greenthread (Selective Mitigation Measure 3). Application of additional measures could include requiring dust abatement; implementing erosion controls; monitoring construction activities in proximity to individuals; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, reclamation would occur as required by the USFS (Design Feature 2). This could include recontouring areas of ground disturbance, reseeding using a USFS approved seed mix, developing seed mixes to maximize Green River greenthread recruitment in occupied habitat that is disturbed, and rehabilitating or gating access roads to limit public access to reduce OHV-related impacts on Green River greenthread (Selective Mitigation Measures 5 and 15). Postconstruction monitoring to determine the necessity of weed control and reseeding efforts may occur if impacts occur in proximity to individuals.

The USFS will not authorize any action that results in a greater than 15 percent cumulative disturbance to individuals of a sensitive plant species within a land planning unit. Cumulative effects would be assessed using counts or estimates of individuals occurring within the Project footprint relative to counts or estimates of individual occurring in occupied habitat. Individual abundance and limits of occupied habitat would be determined during preconstruction surveys. Cumulative effects would be assessed on occupied habitat as identified during preconstruction surveys. Cumulative impacts on occupied habitat from other past and present actions and reasonably foreseeable future actions also would be assessed on site-specific survey results, if available. The USFS also may provide additional mitigation measures based on the results of the preconstruction surveys. These measures could include monitoring requirements and seed collection.

5.4.4.3 Cumulative Effects

A summary of the cumulative impacts on Green River greenthread is presented in Table 7.

TABLE 5
SUMMARY OF CUMULATIVE EFFECTS ON
GREEN RIVER GREENTHREAD HABITAT IN ACRES

	Manti-La Sal National Forest	Uinta National Forest	Ashley National Forest
Project-related disturbance on U.S. Forest Service-administered land		88	
Incremental Project-related disturbance in the cumulative effects analysis area	–	72	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	–	225	–
Potentially suitable habitat in the cumulative effects analysis area	–	14,724	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	–	14,427	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.

On the Uinta National Forest, approximately 2 percent of potential Green River greenthread habitat in the cumulative impact assessment area for the agency-preferred route has been disturbed by past, present, or reasonably foreseeable future activities. Incremental disturbance resulting from Project activities would

affect a minor portion of total available habitat (less than 0.5 percent) and account for approximately 24 percent of the total cumulative disturbance. The majority of this disturbance results from existing roads and transmission lines. The centerline of the agency-preferred route does not cross potential habitat on the Ashley or Manti-La Sal National Forests. As such, cumulative effects were not identified in the cumulative impact analysis and included in Table 5.

Impacts on potential habitat on the Ashley and Uinta National Forests resulting from the use or creation of access roads on the forest may occur. These impacts are expected to contribute minimal amounts of disturbance relative to the total available potential habitat.

Past, present, and future activities have and will continue to alter the sensitive plant occurrences in the cumulative effects analysis area. These activities include OHV use, grazing, fire suppression, mining, recreational use, road construction, and noxious weed infestation and are described in more detail in Section 5.4.1.

5.4.4.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual Green River greenthread plants, but would not result in a loss of viability on the Ashley or Uinta National Forests or cause a trend toward federal listing of the species.

5.4.5 Untermann's Daisy

5.4.5.1 Effects

The agency-preferred route does not cross any potential Untermann's daisy habitat on USFS-administered land. The nearest potential habitat to the agency-preferred route exists on the slopes of Argyle Canyon approximately 1 mile from the centerline of the agency-preferred route, located outside of USFS-administered land. The nearest potential habitat to the agency-preferred route on USFS-administered land is approximately 3.2 miles north at the head of Sower's Canyon, on the Ashley National Forest. Of the Untermann's daisy occurrences on the Ashley National Forest, the nearest to the agency-preferred route exist on the ridgeline separating Argyle and Sowers canyons 5 miles to the north. Potential Untermann's daisy habitat or occurrences are not present on the Uinta or Manti-La Sal National Forests.

Where the agency-preferred route passes near the southeast corner of the Ashley National Forest, existing access roads on and near the forest may be used for Project activities. Use of these access roads could require blading, widening, importing road surface material, and developing new roads to access construction sites. These roads are not expected to affect any known occurrences, as the nearest occurrence is 9.3 miles west across several ridgelines, but the roads may cross potential habitat. The area where these impacts may occur is geographically limited, measuring approximately 1,000 feet by 2,500 feet, and accounts for a very minor portion of total potential habitat. Any impacts on potential habitat resulting from Project-related use of access roads on the Ashley National Forest are expected to be minimal in extent.

Disturbance to Untermann's daisy habitat and individuals could occur as result of Project activities. Potential Project effects on Untermann's daisy are summarized in Section 5.4, and may include loss of individuals and habitat, habitat degradation, and other adverse impacts on individuals.

5.4.5.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Untermann's daisy. Design Features 1, 2, 3, 5, 9, 26, 27,

28, and 30 and Selective Mitigation Measures 1, 2, 3, 5, 7, and 15 (refer to Appendix A) are applicable to activities in proximity to sensitive plant habitats and could be used to reduce impacts on Untermann's daisy.

Prior to any ground-disturbing activities, focused, intuitive surveys of all access roads, work areas, and tower sites would be conducted in areas where Untermann's daisy may occur to identify the exact location of Untermann's daisy individuals (Design Feature 3).

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or special reclamation measures (e.g., seed collection or transplanting) (Design Feature 3). Untermann's daisy populations and individuals would be avoided or spanned where feasible (Design Feature 9 and Selective Mitigation Measure 7). Where avoidance is not feasible, the transmission line would be designed to avoid and minimize effects on the species. Approval by the USFS would be required for any activities occurring near occupied habitat.

Other measures that may be implemented to avoid and minimize impacts on the species may include minimizing vegetation clearing to reduce impacts on habitat (Design Feature 1), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), restricting travel to existing access roads (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), implementing actions to control the spread of noxious weeds (Design Feature 5), limiting the widening of existing roads (Selective Mitigation Measure 1), and aligning new access roads to reduce erosion and minimize impacts on Untermann's daisy (Selective Mitigation Measure 3). Application of additional measures could include requiring dust abatement; implementing erosion controls; monitoring construction activities in proximity to individuals; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, reclamation would occur as required by the USFS (Design Feature 2). This could include recontouring areas of ground disturbance, reseeding using a USFS approved seed mix, developing seed mixes to maximize Untermann's daisy recruitment in occupied habitat that is disturbed, and rehabilitating or gating access roads to limit public access to reduce OHV-related impacts on Untermann's daisy (Selective Mitigation Measures 5 and 15). Postconstruction monitoring to determine the necessity of weed control and reseeding efforts may occur if impacts occur in proximity to individuals.

The USFS will not authorize any action that results in a greater than 15 percent cumulative disturbance to individuals of a sensitive plant species within a land planning unit. Cumulative effects would be assessed using counts or estimates of individuals occurring within the Project footprint relative to counts or estimates of individual occurring in occupied habitat. Individual abundance and limits of occupied habitat would be determined during preconstruction surveys. Cumulative effects would be assessed on occupied habitat as identified during preconstruction surveys. Cumulative impacts on occupied habitat from other past and present actions and reasonably foreseeable future actions also would be assessed on site-specific survey results, if available. The USFS also may provide additional mitigation measures based on the results of the preconstruction surveys. These measures could include monitoring requirements and seed collection.

5.4.5.3 Cumulative Effects

The centerline of the agency-preferred route does not cross potential Untermann's daisy on the three national forests. As such, cumulative effects were not identified in the cumulative impact analysis or included in a summary table.

Impacts on potential habitat on the Ashley National Forest resulting from the use or creation of access roads on the forest may occur. These impacts were not identified in the quantitative cumulative effects analysis, but are expected to contribute minimal amounts of disturbance relative to the total available potential habitat.

Past, present, and reasonably foreseeable future activities have altered and will continue to alter the sensitive plant occurrences in the cumulative effects analysis area. These activities include OHV use, grazing, fire suppression, mining, recreational use, road construction, and noxious weed infestation and are described in more detail in Section 5.4.1.

5.4.5.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual Untermann's daisies but would not result in a loss of viability on the Ashley National Forest or cause a trend toward federal listing of the species.

5.4.6 Wheeler's Angelica

5.4.6.1 Effects

The agency-preferred route would not cross potential habitat for Wheeler's angelica on USFS-administered land; however, areas of potential habitat are located within 1 mile of the agency-preferred route on the Uinta National Forest. The closest mapped occurrences of Wheeler's angelica are located approximately 4 miles north of Link U639 on the Uinta National Forest along Salt Creek (UNHP 2012). Although not identified in the UNHP mapping data, another occurrence of Wheeler's Angelica exists on the Uinta National Forest in the Indian Creek watershed (Leinbach 2012). This occurrence is not shown on Map B-5 in Appendix B; however, the USFS assumes Wheeler's angelica occurs in the Project area on the Uinta National Forest.

Where the centerline of the agency-preferred route crosses near the Uinta National Forest, existing access roads on and near the national forest may be used for Project activities. Use of these access roads could require blading, widening, importing road surface material, and developing new roads to access construction sites. These roads would not be expected to affect any known occurrences or potential habitat.

Disturbance to Wheeler's angelica habitat and individuals could occur as result of Project activities. Potential Project effects on Wheeler's angelica are summarized in Section 5.4 and may include loss of individuals and habitat, habitat degradation, and other adverse impacts on individuals.

5.4.6.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Wheeler's angelica. Design Features 1, 2, 3, 5, 9, 26, 27, 28, and 30 and Selective Mitigation Measures 1, 2, 3, 5, 7, and 15 are applicable to activities in proximity to sensitive plant habitats and would be used to reduce impacts on Wheeler's angelica. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Prior to any ground-disturbing activities, focused, intuitive surveys of all access roads, work areas, and tower sites would be conducted in areas where Wheeler's angelica may occur to identify the exact location of Wheeler's angelica individuals (Design Feature 3).

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or special reclamation measures (e.g., seed collection and/or transplanting) (Design Feature 3). Wheeler's angelica populations and individuals would be avoided or spanned where feasible (Design Feature 9 and Selective Mitigation Measure 7). Where avoidance is not feasible, the transmission line would be designed to avoid and minimize effects on the species. Approval by the USFS would be required for any activities occurring near occupied habitat.

Other measures that may be implemented to avoid and minimize impacts on the species may include minimizing vegetation clearing to reduce impacts on habitat (Design Feature 1), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), restricting travel to existing access roads (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), implementing actions to control the spread of noxious weeds (Design Feature 5), limiting the widening of existing roads (Selective Mitigation Measure 1), and aligning new access roads to reduce erosion and minimize impacts on Wheeler's angelica (Selective Mitigation Measure 3). Application of additional measures could include requiring dust abatement; implementing erosion controls; monitoring construction activities in proximity to individuals; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, reclamation would occur as required by the USFS (Design Feature 2). This could include recontouring areas of ground disturbance, reseeding using a USFS approved seed mix, developing seed mixes to maximize Wheeler's angelica recruitment in occupied habitat that is disturbed, and rehabilitating or gating access roads to limit public access to reduce OHV-related impacts on Wheeler's angelica (Selective Mitigation Measures 5 and 15). Postconstruction monitoring to determine the necessity of weed control and reseeding efforts may occur if impacts occur in proximity to individuals.

The USFS will not authorize any action that results in a greater than 15 percent cumulative disturbance to individuals of a sensitive plant species within a land planning unit. Cumulative effects would be assessed using counts or estimates of individuals occurring within the Project footprint relative to counts or estimates of individuals occurring in occupied habitat. Individual abundance and limits of occupied habitat would be determined during preconstruction surveys. Cumulative effects would be assessed on occupied habitat as identified during preconstruction surveys. Cumulative impacts on occupied habitat from other past and present actions and reasonably foreseeable future actions also would be assessed on site-specific survey results, if available. The USFS also may provide additional mitigation measures based on the results of the preconstruction surveys. These measures could include monitoring requirements and seed collection.

5.4.6.3 Cumulative Effects

No potential Wheeler's angelica habitat is crossed in the cumulative impact assessment area for the agency-preferred route, and impacts on Wheeler's angelica potential habitat resulting from the use or creation of access roads on the Uinta National Forest are not anticipated to result in disturbance to Wheeler's angelica potential habitat. As such, the Project is not expected to contribute to loss, fragmentation, and modification of potential habitat for Wheeler's angelica in the cumulative impacts analysis area. Wheeler's angelica is known to occur in watersheds crossed by the Project, but the Project would likely avoid potential habitat. Therefore, the likelihood and extent of these impacts is expected to be low.

Past, present, and reasonably foreseeable future activities have altered and will continue to alter the sensitive plant occurrences in the cumulative effects analysis area. These activities include OHV use,

grazing, fire suppression, mining, recreational use, road construction, and noxious weed infestation and are described in more detail in Section 5.4.1.

5.4.6.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual plants of Wheeler's angelica, but would not result in a loss of viability on the Uinta National Forest or cause a trend toward federal listing of the species.

5.5 Effects on Sensitive Fish Species

5.5.1 Bonneville Cutthroat Trout

5.5.1.1 Effects

The agency-preferred route and existing forest access roads cross potential Bonneville cutthroat trout habitat on both the Uinta and Manti-La Sal National Forests. Bonneville cutthroat trout are not known to occur on the Ashley National Forest.

On the Uinta National Forest, potential Bonneville cutthroat trout habitat is intersected by the Project centerline and existing forest access roads along the southern edge of Uinta Unit 1 and along the southeastern edge and southwestern edge of Uinta Unit 2 across NHD-mapped streams. The agency-preferred route crosses the Tie Fork subwatershed on the Uinta Unit 1 National Forest, as well as the Lower, Middle, Nebo Creek and Upper Soldier Creek subwatersheds on the Uinta National Forest where Bonneville cutthroat trout are known to occur. The route centerline and existing access roads also cross potential Bonneville cutthroat trout immediately upstream, but outside of, the Uinta Units in several locations. Downstream effects from Project activities may affect potential habitat on the Uinta National Forest.

The Manti-La Sal National Forest is crossed by the agency-preferred route centerline and existing access roads along the northwestern and northern forest boundary of Unit 1 and along the northern boundary of Unit 2. The agency-preferred route crosses the Cottonwood Creek–San Pitch River, Lower Thistle Creek, and Middle Thistle Creek subwatersheds on the Manti La-Sal National Forest, where Bonneville cutthroat trout are known to occur. Potential Bonneville cutthroat trout habitat is intersected by the agency-preferred route centerline and access roads on the Manti-La Sal National Forest. The route centerline and existing access roads also cross potential Bonneville cutthroat trout habitat on the Uinta National Forest in several locations (Refer to Appendix B, Map B-6). Downstream effects from Project activities may impact potential habitat on the Manti-La Sal National Forest. Table 6 summarizes total acres of potential Bonneville cutthroat trout habitat intersected by the agency-preferred route centerline and existing access roads on the Uinta and Manti-La Sal National Forests.

The agency-preferred route does not cross any portion of the Ashley National Forest. However, existing access roads are located on the southeastern portion of the Ashley National Forest near the agency-preferred route centerline that may be used to access the transmission line for construction and/or maintenance activities. These roads do not cross any potential Bonneville cutthroat trout habitat on the Ashley National Forest or streams containing potential habitat upstream of USFS-administered land on the Ashley National Forest.

Direct effects on potential Bonneville cutthroat trout habitat could occur on USFS-administered land as a result of Project-related activities. Direct loss of potential Bonneville cutthroat trout habitat is not expected as the Project will span or avoid, where possible, sensitive riparian habitat and minimize tree clearing in riparian habitats. Direct effects on individuals could include mortality and modification of

aquatic (lentic and lotic) and semiaquatic (wetland and riparian) habitats resulting from construction, operation, and maintenance of permanent Project facilities, including, improvements due to use of existing access roads and improvements to existing access road crossings of occupied streams, ancillary facilities, and transmission line towers (e.g.., individuals crushed by vehicles and grading or blading activities that permanently remove habitat).

Streams would be avoided where feasible. However, temporary stream crossings would be used to cross aquatic habitats with little to no stream flow; where a crossing would only be needed for the construction phase of the Project; or where existing streambed substrate would support construction, operation, and maintenance-related traffic. Types of temporary stream crossings would include (1) dry crossings with no bank or channel improvement, (2) mechanically grading banks to a slope sufficient to drive equipment and building materials across the channel (bank recontouring and revegetation would follow the work at the temporary crossing), (3) placement of temporary fill that would be removed following the completion of work at the site, or (4) temporary span structures. While temporary, these crossings would have the potential to create long- and short-term effects on stream morphology and ecological function.

Modification of stream banks for temporary crossings could require the modification of vegetation that could take many years to recover, depending on the plant species present, creating the potential for long-term bank erosion and sedimentation of aquatic habitats depending on site-specific conditions.

Potential indirect effects on Bonneville cutthroat trout include incremental increases in sediment deposition and turbidity as a result of ground disturbance and erosion associated with the Project or installation of culvert crossings or upgrading of existing access road crossings of occupied streams or potential Bonneville cutthroat trout habitat. Ground-disturbing activities that alter natural channel morphology, substrate composition, and stability and those activities that would compact or decompact soils or remove riparian vegetation in proximity to fish and aquatic habitats could result in increased sediment loads, removal of water filtering capability and shading vegetation that provides temperature control, accidental spills of environmentally harmful materials (fuel, oil, concrete, etc.), or introduction of aquatic invasive species. Indirect effects could result in a reduction in species fitness, reproductive potential (fecundity), survivability, and long-term adaptability.

Additional indirect effects could include habitat degradation through the introduction of invasive species or hazardous chemicals. Implementation of Project design features and selective mitigation measures would limit these indirect effects.

5.5.1.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Bonneville cutthroat trout. Design Features 3, 26, 27, 28, 30, 33, and 34 and Selective Mitigation Measures 2, 4, 5, 7, 11, and 12 are applicable to activities in proximity to sensitive fish habitats and would be used to reduce impacts on Bonneville cutthroat trout. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Aquatic habitats would be avoided or spanned where allowed by the limits of standard structure design (Selective Mitigation Measures 2 and 7). New crossing of occupied streams would be avoided where feasible, and expansion of existing access road culverts over occupied streams or potential habitat would be limited to the smallest design cross section required. Application of proposed design features and selective mitigation measures would be implemented to minimize impacts on potential Bonneville cutthroat trout habitat on the Manti-La Sal and Uinta National Forests where avoidance is not feasible. These actions may include altering placement of towers or roads to avoid occupied habitat or altering structure design to reduce risk to individuals or riparian habitats (Design Features 3 and 33).

Where avoidance is not feasible, the extent of impacts and local design plan would be provided to the USFS to review and concur that the amounts of impact remained consistent with this analysis prior to any construction activities. Additional mitigation measures may be required that could include habitat improvement, preconstruction site visits by USFS personnel, salvage of individuals, and re-establishment of populations.

During construction, design features and selective mitigation measures for limiting impacts on Bonneville cutthroat trout include minimizing vegetation clearing to reduce impacts on habitat (Selective Mitigation Measures 4 and 11), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), implementing practices designed to reduce erosion and aquatic species invasion (Design Features 33 and 34), restricting travel to existing access roads and overland travel (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), and limiting the widening of existing roads (Selective Mitigation Measure 1). Application of additional measures could include restricting pesticide application; implementing stipulations guiding the use and avoidance of surface waters; monitoring construction activities in proximity to aquatic habitats; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, access roads may be rehabilitated or gated to limit public access to reduce impacts on Bonneville cutthroat trout (Selective Mitigation Measure 5). The USFS may require additional monitoring or supplemental habitat enhancement.

5.5.1.3 Cumulative Effects

The Project could contribute incrementally to the modification of potential Bonneville cutthroat trout habitat on the Manti-La Sal and Uinta National Forests. On each of the national forests, the Project and other reasonably foreseeable future actions would be located in the vicinity of other past and present actions that have degraded the quality of Bonneville cutthroat trout habitat.

Results of the impact analysis show development of the Project would affect no more than 3 percent of total potential Bonneville cutthroat trout habitat on lands administered by the Manti-La Sal National Forest. This is a conservative estimate, as streams providing potential Bonneville cutthroat trout habitat would be avoided by spanning or rerouting to the extent practicable.

Other past, present, and reasonably foreseeable future actions could affect potential Bonneville cutthroat trout habitat and are largely attributed to existing and future oil and gas leases in the Soldier Creek Watershed. Areas on the Manti-La Sal National Forest affected by wildfires were excluded from the quantitative analysis as habitat can recover, and even benefit, from these events.

On land administered by the Uinta National Forest, impacts resulting from the Project would affect no more than 2 percent of the total potential Bonneville cutthroat trout habitat in subwatersheds on the Uinta National Forest. This is a conservative estimate, as streams providing potential Bonneville cutthroat trout habitat would be avoided by spanning or rerouting access roads to the extent practicable. The effects of the Project in conjunction with other past, present, and reasonably foreseeable future actions could affect up to 38 percent of potential Bonneville cutthroat trout habitat in the cumulative impacts analysis area. These effects are mostly attributed to effects other than the Project, which contributes only minor impacts.

A summary of cumulative impacts on Bonneville cutthroat trout is presented in Table 6.

TABLE 6 SUMMARY OF CUMULATIVE EFFECTS ON BONNEVILLE CUTTHROAT TROUT HABITAT IN ACRES						
	Manti-La Sal National Forest[2]		Uinta National Forest[2]		Ashley National Forest	
	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]
Incremental Project-related disturbance on U.S. Forest Service-administered land	18	54	18	76	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	322	933	354	1,053	–	–
Potentially suitable habitat in the cumulative effects analysis area	5,218	21,265	5,533	16,279	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	4,878	20,281	5,174	15,209	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.
[2]Subwatersheds: Manti-La Sal National Forest (Lower Thistle, Middle Thistle, and Nebo Creek) and Uinta National Forest (Middle Thistle, Middle Soldier, Upper Soldier, and Tie Fork)
[3]Habitat buffer is the potential habitat buffered by 100 and 300 feet.

5.5.1.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual Bonneville cutthroat trout, but are not likely to result in a loss of viability or cause a trend toward federal listing of Bonneville cutthroat trout on the Manti-La Sal or Uinta National Forests.

5.5.2 Colorado River Cutthroat Trout

5.5.2.1 Effects

The agency-preferred route and existing forest access roads cross potential Colorado River cutthroat trout habitat on both the Uinta and Manti-La Sal National Forests. The agency-preferred route crosses the Right Fork White River and Tabbyune Creek−White River subwatersheds on the Uinta National Forest where Colorado River cutthroat trout is known to occur. Potential Colorado River cutthroat trout habitat is intersected by the agency-preferred route and existing forest access roads along the southern edge of Uinta Unit 1 and along the southeastern edge and southwestern edge of Uinta Unit 2 across NHD-mapped streams. The route centerline and existing access roads also cross potential Colorado River cutthroat trout habitat immediately upstream, but outside of, the Uinta Units in several locations. Downstream effects from Project activities may affect potential habitat on the Uinta National Forest.

Potential Colorado River cutthroat trout habitat is intersected by the agency-preferred route and access roads on the Manti-La Sal National Forest. Colorado River cutthroat trout are not known to occur in subwatersheds where the agency-preferred route crosses the Manti-La Sal National Forest. The route centerline and existing access roads also cross potential Colorado River cutthroat trout habitat immediately upstream, but outside of, the Uinta Units in several locations (Refer to Appendix B, Map B-7). Downstream effects from Project activities may affect potential habitat on the Manti National Forest. Table 7 summarizes total acres of potential Colorado River cutthroat trout habitat intersected by the agency-preferred route centerline and existing access roads on the Uinta and Manti-La Sal National Forests.

The agency-preferred route centerline does not cross any portion of the Ashley National Forest. However, existing access roads are located on the southeastern portion of the Ashley National Forest near the agency-preferred route centerline that may be used to access the transmission line for construction or maintenance activities. These roads do not cross any potential Colorado River cutthroat trout habitat on the Ashley National Forest or streams containing potential habitat upstream of USFS-administered land on the Ashley National Forest. Colorado River cutthroat trout occur in the South Fork Avintaquin and the Tabbyune Creek−White River subwatersheds on the Ashley National Forest.

Direct effects on potential Colorado River cutthroat trout habitat could occur on USFS-administered land as a result of Project-related activities. Direct loss of potential Colorado River cutthroat trout habitat is not expected as the Project will span or avoid, where possible, sensitive riparian habitat and minimize tree clearing in riparian habitats. Direct effects on individuals could include mortality of individuals and modification of aquatic (lentic and lotic) and semiaquatic (wetland and riparian) habitats resulting from construction, operation, and maintenance of permanent Project facilities, including access roads, new or improved/expanded culvert crossings, ancillary facilities, and transmission line towers (i.e., individuals crushed by vehicles and grading or blading activities that permanently remove habitat).

Streams would be avoided where feasible. However, temporary stream crossings would be used to cross aquatic habitats with little to no stream flow; where a crossing would only be needed for the construction phase of the Project; or where existing streambed substrate would support construction, operation, and maintenance-related traffic. Types of temporary stream crossings would include (1) dry crossings with no bank or channel improvement, (2) mechanically grading banks to a slope sufficient to drive equipment and building materials across the channel (bank recontouring and revegetation would follow the work at the temporary crossing), (3) placement of temporary fill that would be removed following the completion of work at the site, or (4) temporary span structures. While temporary, these crossings would have the potential to create long- and short-term effects on stream morphology and ecological function.

Modification of stream banks for temporary crossings could require temporary removal of vegetation that could take months to recover, depending on the plant species present, creating the potential for long-term bank erosion and sedimentation of aquatic habitats, depending on site-specific conditions.

Potential indirect effects on Colorado River cutthroat trout include incremental increases in sediment deposition and turbidity as a result of ground disturbance and erosion associated with the Project or installation of culvert crossings or upgrading of existing access road crossings of occupied streams or potential Colorado River cutthroat trout habitat. Ground-disturbing activities that alter natural channel morphology, substrate composition, and stability and activities that would compact or decompact soils or remove riparian vegetation in proximity to fish and aquatic habitats could result in increased sediment loads, removal of water filtering capability and shading vegetation that provides temperature control, accidental spills of environmentally harmful materials (fuel, oil, concrete, etc.), and/or introduction of aquatic invasive species. Indirect effects could result in a reduction in species fitness, reproductive potential (fecundity), survivability, and long-term adaptability.

Additional indirect effects could include habitat degradation through the introduction of invasive species or hazardous chemicals. Implementation of design features and selective mitigation measures would limit these indirect effects.

5.5.2.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Colorado River cutthroat trout. Design Features 3, 26, 27, 28, 30, 33, and 34 and Selective Mitigation Measures 2, 4, 5, 7, 11, and 12 are applicable to activities in

proximity to sensitive fish habitats and would be used to reduce impacts on Colorado River cutthroat trout. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Aquatic habitats would be avoided or spanned where allowed by the limits of standard structure design (Selective Mitigation Measures 2 and 7). New crossing of occupied streams would be avoided where feasible; expansion of existing access road culverts over occupied streams or potential habitat would be limited to the smallest design cross section required. Application of proposed design features and selective mitigation measures would be implemented to minimize impacts on potential Colorado River cutthroat trout habitat on the Manti-La Sal and Uinta National Forests where avoidance is not feasible. These actions may include avoidance, where feasible, of all potential habitat and Colorado River cutthroat trout bearing streams, altering structure design to reduce risk to individuals or riparian habitats (Design Features 3 and 33).

Where avoidance is not feasible, the extent of impacts and local design plan would be provided to the USFS to review and concur that the amounts of impact remained consistent with this analysis prior to any construction activities. Additional mitigation measures may be required that could include habitat improvement, preconstruction site visits by USFS personnel, salvage of individuals, and re-establishment of populations. It is anticipated that USFS-administered lands would remain largely unaffected by the Project.

During construction, design features and selective mitigation measures for limiting impacts on Colorado River cutthroat trout include minimizing vegetation clearing to reduce impacts on habitat (Selective Mitigation Measures 4 and 11), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), implementing practices designed to reduce erosion and aquatic species invasion (Design Features 33 and 34), restricting travel to existing access roads and overland travel (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), and limiting the widening of existing roads (Selective Mitigation Measure 1). Application of additional measures could include implementing seasonal and spatial restrictions; restricting pesticide application; implementing stipulations guiding the use and avoidance of surface waters; monitoring construction activities in proximity to aquatic habitats; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, access roads may be rehabilitated or gated to limit public access to reduce impacts on Colorado River cutthroat trout (Selective Mitigation Measure 5). The USFS may require additional monitoring or supplemental habitat enhancement.

5.5.2.3 Cumulative Effects

The Project could contribute incrementally to the modification of potential Colorado River cutthroat trout habitat on the Manti-La Sal and Uinta National Forests. On each of the national forests, the Project and other reasonably foreseeable future actions would be located in the vicinity of other past and present actions that have degraded the quality of Colorado River cutthroat trout habitat.

Results of the impact analysis show development of the Project would affect no more than 3 percent of potential Colorado River cutthroat trout habitat on lands administered by the Manti-La Sal National Forest. This is a conservative estimate, as streams providing potential Colorado River cutthroat trout habitat would be avoided by spanning or rerouting to the extent practicable.

Other past, present, and reasonably foreseeable future actions could affect potential Colorado River cutthroat trout habitat and are largely attributed to existing and future oil and gas leases in the Soldier Creek Watershed. Areas on the Manti-La Sal National Forest affected by wildfires were excluded from the quantitative analysis as habitat can recover, and even benefit, from these events.

On land administered by the Uinta National Forest, impacts resulting from the Project would affect no more than 2 percent of the potential Colorado River cutthroat trout habitat in subwatersheds on the forest. This is a conservative estimate, as streams providing potential Colorado River cutthroat trout habitat would be avoided by spanning or rerouting access roads to the extent practicable. The effects of the Project in conjunction with other past, present, and reasonably foreseeable future actions could affect up to 38 percent of potential Colorado River cutthroat trout habitat in the cumulative impacts analysis area. These effects are mostly attributed to effects other than the Project, which contributes only minor impacts.

A summary of cumulative impacts on Colorado River cutthroat trout is presented in Table 7.

TABLE 7
SUMMARY OF CUMULATIVE EFFECTS ON
COLORADO RIVER CUTTHROAT TROUT HABITAT IN ACRES

	Manti-La Sal National Forest[2]		Uinta National Forest[2]		Ashley National Forest[2]	
	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]
Incremental Project-related disturbance on U.S. Forest Service-administered land	18	54	18	76	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	322	933	354	1,053	–	–
Potentially suitable habitat in the cumulative effects analysis area	5,218	21,265	5,533	16,279	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	4,878	20,281	5,174	15,209	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.
[2]Subwatersheds: Manti-La Sal National Forest (Lower Thistle, Middle Thistle, and Nebo Creek) and Uinta National Forest (Middle Thistle, Middle Soldier, Upper Soldier, and Tie Fork)
[3]Habitat buffer is the potential habitat buffered by 100 and 300 feet.

5.5.2.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual Colorado River cutthroat trout but are not likely to result in a loss of viability or cause a trend toward federal listing of the species on the Manti-La Sal, or Uinta National Forests.

5.5.3 Southern Leatherside Chub

5.5.3.1 Effects

The agency-preferred route and existing forest access roads cross potential southern leatherside chub habitat on both the Uinta and Manti-La Sal National Forests. Southern leatherside chub is known to occur in the Middle Thistle Creek subwatershed in the western edge of the Manti-La Sal National Forest and the eastern edge of the Uinta Unit 2 National Forest crossed by the agency-preferred route and potential Project access roads (UNHP 2012). Impacts may occur on the Uinta National Forest Unit 1 on the Lower Soldier Creek subwatershed, but these impacts are expected to affect only a minor portion (approximately 1.1 percent) of total habitat on the Uinta National Forest. Existing forest access roads cross potential southern leatherside chub habitat on the eastern edge of Uinta National Forest Unit 2. Refer to Appendix B, Map B-8, for locations.

On the Manti-La Sal National Forest, Project-related activities may result in minor effects on southern leatherside chub where the agency-preferred route and existing forest access roads cross potential habitat on USFS-administered land on the west side of Manti-La Sal Unit 1.

The agency-preferred route does not cross any portion of the Ashley National Forest. However, existing access roads are located on the southeastern portion of the Ashley National Forest near the agency-preferred route centerline that may be used to access the transmission line for construction or maintenance activities. These roads do not cross potential southern leatherside chub habitat on the Ashley National Forest or streams containing potential habitat upstream of USFS-administered land on the Ashley National Forest.

Direct effects on potential southern leatherside chub habitat could occur on USFS-administered land as a result of Project-related activities. Direct loss of potential southern leatherside chub habitat is not expected as the Project will span or avoid, where possible, sensitive riparian habitat and minimize tree clearing in riparian habitats. Direct effects on southern leatherside chub could include mortality of individuals and modification of aquatic (lentic and lotic) and semiaquatic (wetland and riparian) habitats resulting from construction, operation, and maintenance of permanent Project facilities, including access roads, new or improved/expanded culvert crossings, ancillary facilities and transmission line towers.

Streams would be avoided where feasible. However, temporary stream crossings would be used to cross aquatic habitats with little to no stream flow; where a crossing would only be needed for the construction phase of the Project; or where existing streambed substrate would support construction, operation, and maintenance-related traffic. Types of temporary stream crossings would include (1) dry crossings with no bank or channel improvement, (2) mechanically grading banks to a slope sufficient to drive equipment and building materials across the channel (bank recontouring and revegetation would follow the work at the temporary crossing), (3) placement of temporary fill that would be removed following the completion of work at the site, or (4) temporary span structures. While temporary, these crossings would have the potential to create long- and short-term effects on stream morphology and ecological function.

Modification of stream banks for temporary crossings could require the temporary disturbance of vegetation that could take many months to recover, depending on the plant species present, creating the potential for long-term bank erosion and sedimentation of aquatic habitats, depending on site-specific conditions.

Indirect effects on potential southern leatherside chub habitat may include incremental increases in sediment deposition and turbidity as a result of ground disturbance and erosion associated with installation of culvert crossings or the upgrading of existing access road crossings of streams with potential southern leatherside chub habitat. Ground-disturbing activities that alter natural channel morphology, substrate composition, and stability and activities that would compact or decompact soils or remove riparian vegetation in proximity to fish and aquatic habitats could result in increased sediment loads, removal of water filtering capability and shading vegetation that provides temperature control, accidental spills of environmentally harmful materials (fuel, oil, concrete, etc.), or introduction of aquatic invasive species. Indirect effects could result in a reduction in species fitness, reproductive potential (fecundity), survivability, and long-term adaptability.

Additional indirect effects could include habitat degradation through the introduction of invasive species or hazardous chemicals. Implementation of Project design features and selective mitigation measures would limit these indirect effects.

5.5.3.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on southern leatherside chub. Design Features 3, 26, 27, 28, 30, 33, and 34 and Selective Mitigation Measures 2, 4, 5, 7, 11, and 12 are applicable to activities in proximity to sensitive fish habitats and would be used to reduce impacts on southern leatherside chub. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Potential southern leatherside chub habitat would be avoided or spanned under Selective Mitigation Measures 2 and 7 (span or avoid sensitive features) and direct disturbance to aquatic habitats would be limited under Selective Mitigation Measure 5 (minimize new or improved accessibility) to stream and river crossings where new access roads are constructed. Aquatic habitats potentially inhabited by southern leatherside chub may experience incremental increases in turbidity as a result of sedimentation during storm events when run-off in areas where access roads are constructed near (within 100 feet of) streams and rivers erodes disturbed soils. Postconstruction road maintenance may contribute small amounts of sediment periodically to potential southern leatherside chub habitat, along with regular runoff during rain events. However, increases in turbidity would be limited through application of the aforementioned mitigation measures. These actions may include altering placement of towers or roads to avoid occupied habitat or altering structure design to reduce risk to individuals or riparian habitats (Design Features 3 and 33). Aquatic habitats would be avoided or spanned where allowed by the limits of standard structure design (Selective Mitigation Measures 2 and 7).

Where avoidance is not feasible, the extent of impacts and local design plan would be provided to the USFS to review and concur that the amounts of impact remained consistent with this analysis prior to any construction activities. Additional mitigation measures may be required that could include habitat improvement, preconstruction site visits by USFS personnel, salvage of individuals, and re-establishment of populations.

During construction, design features and selective mitigation measures for limiting impacts on southern leatherside chub include minimizing vegetation clearing to reduce impacts on habitat (Selective Mitigation Measures 4 and 11), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), implementing practices designed to reduce erosion and aquatic species invasion (Design Features 33 and 34), restricting travel to existing access roads and overland travel (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), and limiting the widening of existing roads (Selective Mitigation Measure 1). Application of additional measures could include restricting pesticide application; implementing stipulations guiding the use and avoidance of surface waters; monitoring construction activities in proximity to aquatic habitats; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, access roads may be rehabilitated or gated to limit public access to reduce impacts on southern leatherside chub (Selective Mitigation Measure 5). The USFS may require additional monitoring or supplemental habitat enhancement.

5.5.3.3 Cumulative Effects

Project-related actions along the agency-preferred route centerline and possible use of existing forest access roads in the Manti-La Sal National Forest are anticipated to have minor impacts on habitat for southern leatherside chub. Results of the impact analysis indicate that development of the Project would result in minor direct and indirect impacts on potential southern leatherside chub habitat on land administered by the USFS. Where potential habitat exists in the Manti-La Sal and Uinta National Forest

cumulative impacts analysis areas, impacts resulting from the Project in conjunction with other past, present, and reasonably foreseeable future actions could affect potential habitat by up to 36 percent.

A summary of cumulative impacts on southern leatherside chub is presented in Table 8.

TABLE 8
SUMMARY OF CUMULATIVE EFFECTS ON SOUTHERN LEATHERSIDE CHUB HABITAT IN ACRES

	Manti-La Sal National Forest[2]		Uinta National Forest[2]		Ashley National Forest[2]	
	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]
Incremental Project-related disturbance on U.S. Forest Service-administered land	1	2	7	22	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	142	407	168	505	–	–
Potentially suitable habitat in the cumulative effects analysis area	1,733	5,109	3,027	8,884	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	1,591	4,700	2,852	8,358	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.
[2]Subwatersheds: Manti-La Sal National Forest (Middle Thistle Creek) and Uinta National Forest (Lower Soldier Creek)
[3]Habitat buffer is the potential habitat buffered by 100 and 300 feet.

The centerline of agency-preferred route does not cross potential habitat on the Ashley National Forest. As such, cumulative effects were not identified in the cumulative impact analysis and included in Table 8.

5.5.3.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual southern leatherside chub but are not likely to result in a loss of viability or cause a trend toward federal listing of the species on the Manti-La Sal or Uinta National Forests.

5.6 Effects on Amphibian Species

5.6.1 Western Boreal Toad

5.6.1.1 Effects

The agency-preferred route and existing forest access roads cross potential Western boreal toad habitat on both the Uinta and Manti-La Sal National Forests. On the Uinta National Forest, potential breeding and terrestrial habitat is intersected by the agency-preferred route and existing forest access roads along the southern edge of Uinta Unit 1 and along the southeastern edge and southwestern edge of Uinta Unit 2 in areas of NHD-mapped streams and lentic and lotic wetlands. Refer to Appendix B, Map B-8, for locations. Distribution of Western boreal toads is poorly understood, and occupied habitat has not been documented in the Project area.

The Manti-La Sal National Forest is crossed by the agency-preferred route centerline and existing access roads along the northwestern and northern forest boundary of Unit 1 and along the northern boundary of Unit 2. Both potential breeding and terrestrial habitat are intersected by the agency-preferred route centerline and access roads on the Manti-La Sal National Forest. Table 9 summarizes total acres of

potential breeding and terrestrial habitat intersected by the agency-preferred route and existing access roads on the Uinta and Manti-La Sal National Forests.

The agency-preferred route does not cross any portion of the Ashley National Forest. However, existing roads are located on the southeastern portion of the Ashley National Forest that may be used to access the transmission line for construction or maintenance activities. These roads do not cross any potential Western boreal toad terrestrial and breeding habitat on the Ashley National Forest.

Direct effects on potential Western boreal toad breeding habitat are unlikely to occur as the sensitive aquatic and semiaquatic habitats would be avoided or spanned through application of design features and selective mitigation measures. Potential Project-related indirect impacts on potential Western boreal toad breeding habitat include incremental increases in sediment deposition and turbidity as a result of ground disturbance and erosion associated with the Project. Application of design features and selective mitigation measures guiding Project-related activities to reduce ground disturbance and control erosion should limit these indirect effects.

Potential Project-related impacts on potential Western boreal toad terrestrial habitats in the typical dispersal distance include fragmentation or loss of contiguous terrestrial habitat through modification of vegetation, introduction and spread of invasive plants or noxious weeds, or a shift in vegetation components such that vegetation following reclamation of Project-related ground disturbance would not provide suitable habitat. Additionally, Western boreal toad mortality could occur during construction and maintenance if individuals are crushed by or collide with moving construction equipment.

5.6.1.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Western boreal toad. Design Features 3, 26, 27, 28, 30, 33, and 34 and Selective Mitigation Measures 2, 4, 5, 7, 11, and 12 are applicable to activities in proximity to sensitive wildlife habitats and would be used to reduce impacts on Western boreal toad. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or altering structure design to reduce risk to individuals or riparian habitats (Design Features 3 and 33). Aquatic habitats would be avoided or spanned where allowed by the limits of standard structure design (Selective Mitigation Measures 2 and 7). Where avoidance is not feasible, the extent of impacts and local design plan would be provided to the USFS to review and concur that the amounts of impact remained consistent with this analysis prior to any construction activities. Additional mitigation measures may be required that could include habitat improvement, preconstruction site visits by USFS personnel, salvage of individuals, and re-establishment of populations.

During construction, design features and selective mitigation measures for limiting impacts on Western boreal toad include minimizing vegetation clearing to reduce impacts on habitat (Selective Mitigation Measures 4, 11), restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27), implementing practices designed to reduce erosion and aquatic species invasion (Design Features 33 and 34), restricting travel to existing access roads and overland travel (Selective Mitigation Measure 2), restricting the storage of hazardous materials (Design Feature 30), and limiting the widening of existing roads (Selective Mitigation Measure 1). Application of additional measures could include seasonal and spatial restrictions; restricting pesticide application; implementing stipulations guiding the use and avoidance of surface waters; monitoring construction activities in proximity to aquatic habitats; and informing all Project personnel of the importance, purpose, necessity, and regulation of protecting natural resources.

Following construction, access roads may be rehabilitated or gated to limit public access to reduce impacts on Western boreal toad (Selective Mitigation Measure 5). The USFS may require additional monitoring or supplemental habitat enhancement.

5.6.1.3 Cumulative Effects

The Project could contribute incrementally to the modification of potential Western boreal toad breeding and terrestrial habitats on the Manti-La Sal and Uinta National Forests. On each of the national forests, the Project and other reasonably foreseeable future actions would be located in the vicinity of other past and present actions that have degraded the quality of Western boreal toad habitats, and in many cases, locally extirpated historic Western boreal toad populations. The Project and other past, present, and reasonably foreseeable future actions would not be located in isolated higher elevation habitats where Western boreal toads are known or suspected to occur. Furthermore, the cumulative effects of the Project and other past, present, and reasonably foreseeable future actions would leave ample Western boreal toad breeding and terrestrial habitat unaffected on the Manti-La Sal and Uinta National Forests (refer to Table 9). Therefore, the Project and other past, present, and reasonably foreseeable future actions are not anticipated to result in changes to the extent of occupied Western boreal toad habitat on the forests or reduce current forest-wide populations on any of the forests crossed.

The centerline of the agency-preferred route does not cross potential habitat on the Ashley National Forest. As such, cumulative effects were not identified in the cumulative impact analysis and included in Table 9.

5.6.1.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual Western boreal toad, but are not likely to result in a loss of viability or cause a trend toward federal listing of the species on the Ashley, Manti-La Sal, or Uinta National Forests.

TABLE 9 SUMMARY OF CUMULATIVE EFFECTS ON WESTERN BOREAL TOAD HABITAT IN ACRES									
	Manti-La Sal National Forest[2]			Uinta National Forest[2]			Ashley National Forest		
	Breeding[3]		Terrestrial[4]	Breeding[3]		Terrestrial[4]	Breeding[3]		Terrestrial[4]
Habitat	**100 feet[5]**	**300 feet[5]**	**Typical Dispersal[2]**	**100 feet[5]**	**300 feet[5]**	**Typical Dispersal[2]**	**100 feet[5]**	**300 feet[5]**	**Typical Dispersal[2]**
Incremental Project-related disturbance on U.S. Forest Service-administered land	7	20	25	33	109	228	–	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	178	205	415	463	1,417	2,330	–	–	–
Potentially suitable habitat in the cumulative effects analysis area	3,920	11,777	29,459	11,440	34,028	92,571	–	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	3,736	11,193	29,019	10,955	32,528	90,034	–	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.
[2]Cumulative Impact Analysis Area consists of subwatersheds crossed by reference centerline having potential breeding and terrestrial habitats extending out to the hydrologically connected subwatershed boundary. Subwatersheds: Manti-La Sal National Forest (Lower Thistle and Middle Thistle) and Uinta National Forest (Footes Canyon Salt Creek, Lower Soldier, Middle Soldier Mill Fork, Nebo Creek, Tie Fork, Upper Soldier, and West Creek Current Creek)
[3]Potential breeding habitat is the perennial lotic habitats buffered by 100 feet and 300 feet located in or adjacent to suitable terrestrial habitat.
[4]Terrestrial habitat is the modified Gap Analysis Project cover type to include mountain shrub, mixed conifer, and aspen conifer habitats at or above 5,150 feet in elevation (Utah Division of Wildlife Resources 2008) within typical dispersal distance (1.5 to 1.8 miles) of breeding habitats on the three national forests. All suitable terrestrial habitats occur in the typical dispersal distance from breeding habitat.
[5]Habitat buffer for potential breeding habitat includes all perennial lentic and lotic aquatic habitats adjacent to (within 300 feet) of suitable terrestrial habitat buffered by 100 and 300 feet. Habitat buffer for terrestrial habitat includes all suitable terrestrial habitats out to a typical dispersal distance of 1.5 to 1.8 miles from potential breeding habitat. Suitable terrestrial habitat could extend out to a maximum known dispersal distance of 5 miles; but following analysis of those habitats, it was found that no contiguous tracts of suitable terrestrial habitat is beyond the typical dispersal distance.

5.6.2 Columbia Spotted Frog

5.6.2.1 Effects

The agency-preferred route and existing forest access roads cross potential Columbia spotted frog habitat on both the Uinta and Manti-La Sal National Forests. On the Uinta National Forest, potential Columbia spotted frog habitat is intersected by the agency-preferred route and existing forest access roads along the southern edge of Uinta Unit 1 and along the southeastern edge and southwestern edge of Uinta Unit 2 in areas of NHD-mapped streams and lentic and lotic wetlands. The agency-preferred route and potential Project access roads cross the West Creek–Current Creek subwatershed on Uinta Unit 1 National Forest where Columbia spotted frog are known to occur.

The Manti-La Sal National Forest is crossed by the agency-preferred route centerline and existing access roads along the northwestern and northern forest boundary of Unit 1 and along the northern boundary of Unit 2. Potential Columbia spotted frog habitat is intersected by the agency-preferred route and access roads on the Manti-La Sal National Forest. Columbia spotted frog are known to occur in subwatersheds crossed by the agency-preferred route or potential Project access roads in the Manti-La Sal National Forest.

Table 10 summarizes total acres of potential Columbia spotted frog habitat intersected by the agency-preferred route and existing access roads on the Uinta and Manti-La Sal National Forests.

On the Uinta National Forest, both Units 1 and 2, Project-related activities are expected to minimally affect potential habitat on USFS-administered land from both the agency-preferred route and potential use of existing forest access roads. Refer to Appendix B, Map B-9, for specific locations. Project-related impacts on these habitats are expected to be minimal (less than 1 percent) of total available habitat on the Uinta National Forest.

The agency-preferred route centerline or access roads do not cross any portion of the Ashley National Forest. Existing forest access roads located on the southeastern portion of the Ashley National Forest that may be used also do not cross any potential Columbia spotted frog habitat on the Ashley National Forest. No impacts on Columbia spotted frog habitat are anticipated in the Ashley National Forest.

Direct effects on potential Columbia spotted frog habitat are unlikely to occur as the sensitive aquatic and semiaquatic habitats would be avoided or spanned through application of design features and selective mitigation measures. Potential Project-related indirect impacts on potential Columbia spotted frog habitat include incremental increases in sediment deposition and turbidity as a result of ground disturbance and erosion associated with the Project. Application of design features and selective mitigation measures guiding Project-related activities to reduce ground disturbance and control erosion should limit these indirect effects.

5.6.2.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on Columbia spotted frog. Design Features 3, 26, 27, 28, 30, 33, and 34 and Selective Mitigation Measures 2, 4, 5, 7, 11, and 12 are expected to be applicable to activities in proximity to sensitive wildlife habitats and would be used to reduce impacts on Columbia spotted frog. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Based on survey results and subsequent USFS review and coordination with the Applicant, actions would be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid potential habitat or altering structure design to reduce risk to individuals or riparian habitats

(Design Features 3 and 33). Aquatic habitats would be avoided or spanned where allowed by the limits of standard structure design (Selective Mitigation Measures 2 and 7). Where avoidance is not feasible, the extent of impacts and local design plan would be provided to the USFS to review and concur that the amounts of impact remained consistent with this analysis prior to any construction activities. Additional mitigation measures may be required that could include habitat improvement, preconstruction site visits by USFS personnel, salvage of individuals, and re-establishment of populations.

Direct disturbance to potential Columbia spotted frog aquatic and semiaquatic habitats would be limited under Selective Mitigation Measure 5 (minimize new or improved accessibility). Additionally, through implementation of Selective Mitigation Measure 4 (minimize tree clearing), semiaquatic habitats with a scrub-shrub or forest canopy less than 12 feet in height would not be cleared. Avoiding clearing vegetation lower than 12 feet would reduce effects on Columbia spotted frog and avoid ground-disturbing activities that could directly and indirectly result in adverse impacts on individuals and habitat.

5.6.2.3 Cumulative Effects

Aquatic and semiaquatic habitats potentially supporting Columbia spotted frogs may experience incremental increases in sediment deposition and turbidity as a result of ground disturbance and erosion associated with the Project. Postconstruction road maintenance may contribute small amounts of sediment periodically to potential Columbia spotted frog habitat, along with regular runoff during rain events. However, increases in sediment deposition and turbidity to potential Columbia spotted frog habitats would be limited through application of the aforementioned mitigation measures. Additionally, habitat improvement projects in terrestrial and aquatic habitats watershed-wide would likely result in improved conditions in Columbia spotted frog habitats.

While the Project is not anticipated to result in direct impacts on potential Columbia spotted frog habitat, incremental effects of the Project along with other past, present, and reasonably foreseeable future actions on potential Columbia spotted frog habitats in the cumulative impacts analysis areas could affect up to 35 percent of the total available habitat in the Oak Creek subwatershed along the San Pitch River in the Manti-La Sal National Forest cumulative impacts analysis area and 21 percent in the West Creek–Current Creek subwatershed in the Uinta National Forest cumulative impacts analysis area. A summary of cumulative impacts on Columbia spotted frog is presented in Table 10.

TABLE 10
SUMMARY OF CUMULATIVE EFFECTS ON COLUMBIA-SPOTTED FROG HABITAT IN ACRES

	Manti-La Sal National Forest		Uinta National Forest[2]		Ashley National Forest	
	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]	100 feet[3]	300 feet[3]
Incremental Project-related disturbance on U.S. Forest Service-administered land	5	18	6	17	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	160	185	448	1,279	–	–
Potentially suitable habitat in the cumulative effects analysis area	3,133	9,998	2,559	7,347	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	2,968	9,895	2,146	6,051	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.
[2]Subwatershed: Uinta National Forest (West Creek Current Creek)
[3]Habitat buffer is the potential habitat buffered by 100 and 300 feet.

The centerline of the agency-preferred route does not cross potential habitat on the Ashley National Forest. As such, cumulative effects were not identified in the cumulative impact analysis and included in Table 10.

5.6.2.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual Columbia spotted frogs, but are not likely to result in a loss of viability or cause a trend toward federal listing of the species on the Ashley, Manti-La Sal, or Uinta National Forests.

5.7 Effects on Sensitive Wildlife Species

5.7.1 Bald Eagle

5.7.1.1 Effects

Potential bald eagle foraging habitat is present along the agency-preferred route where it crosses the Manti-La Sal and Uinta National Forests. The Project may affect potential foraging habitats in these areas (Table 11). These impacts would affect less than 0.1 percent of the potential foraging habitat on the forests. Potential foraging habitat is present on the Ashley National Forest but would not be crossed by the agency-preferred route.

Disturbance to foraging bald eagles on the forests could occur as a result of the proposed activities but is unlikely as the eagles could easily avoid areas where Project activities would occur as there is abundant available foraging habitat in the cumulative effects analysis area. Furthermore, right-of-way clearing would have little impact on bald eagle foraging habitat and may prove beneficial by providing better lines of sight and more open terrain, allowing for easier flying. Similarly, an increase in roads could result in beneficial impacts through increased roadkill for foraging eagles. Given the opportunistic foraging strategy of bald eagles, the amount of Project-related disturbance expected to occur on USFS-administered land is not likely to affect bald eagle foraging.

Potential nesting, roosting, and wintering habitat are present on all three national forests, but the agency-preferred route crosses these habitats only on the Uinta National Forest. Potential nesting, roosting, and wintering habitat would be crossed on the Uinta National Forest at two locations—the head of Spencer Canyon and the slopes above Indian Creek Canyon—and are expected to affect minimal amounts of potential nesting, roosting, and nesting habitat relative to available habitat on the Uinta National Forest. The habitat expected to be affected at these locations is part of a larger matrix with several other potential habitat patches within 1 mile. Furthermore, these locations occur where the agency-preferred route would be colocated with existing transmission lines.

Documented roosts and nests occur on USFS-administered land in the Project area (UNHP 2012). The nearest nest lies 14.3 miles north along the Strawberry River, and the nearest roost on USFS-administered land exists 6.2 miles north along Diamond Fork Canyon. The Diamond Fork Canyon roosting site and others on USFS-administered land in the Project area all occur along creeks and riparian areas. Where the Project crosses USFS-administered land, the vegetation communities are typically montane forest, aspen, pinyon-juniper, or mountain shrub, not the riparian habitats typical of bald eagle winter roosts. Given the abundance of potential nesting, roosting, and wintering habitat on the forests and Project avoidance of documented and typical nesting, wintering, and roosting sites on USFS-administered land, Project-related disturbance expected to occur on USFS-administered land is not likely to affect bald eagle nesting, wintering, or roosting.

For all three national forests, access roads constructed on USFS-administered land to access transmission line components located outside of USFS-administered land could occur in potential foraging habitat. Similarly, access road use or construction could occur in, or in proximity to, potential nesting, wintering, and roosting habitat on all three national forests. Due to the limited extent of these access roads, any impacts on potential foraging, nesting, wintering, and roosting habitat are expected to be minimal. Furthermore, these roads would not occur in riparian habitats typical of roosting sites and the likelihood of impacts on nesting, roosting, or wintering habitat is low.

Disturbance to potential nesting, roosting, and wintering and foraging habitats could occur as a result of the Project activities. Project-related effects on bald eagle could include the removal, alteration, and damage to trees or other vegetation during construction of Project access roads, transmission line towers, and all associated facilities. Displacement of individuals through habitat loss, degradation, or noise may occur if construction activities occur in proximity to occupied nesting, roosting, or wintering habitat. Potential for mortality to bald eagles from electrocution and collision with the transmission structures would be avoided or minimized by implementing the design features for raptor safety found in Appendix A.

5.7.1.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on bald eagles. Design Features 3, 4, 7, 8, 26, and 27 and Selective Mitigation Measures 2, 4, 7, 11, 12, and 14 are applicable to activities in proximity to bald eagles. Refer to Appendix A for detailed descriptions of design features and mitigation measures.

Preconstruction surveys for migratory bird species would be conducted prior to any ground-disturbing activities (Design Feature 7). If winter roosts and nesting sites are identified, appropriate seasonal and spatial restrictions will be applied to all Project activities (Design Feature 8 and Selective Mitigation Measure 12). Based on survey results and subsequent USFS review and coordination with the Applicant, further actions could be taken to avoid adverse impacts. These actions may include altering placement of towers or roads to avoid occupied habitat or altering structure design to reduce risk to individuals (Design Features 3 and 4 and Selective Mitigation Measure 14). Nesting habitat would be avoided where allowed by the limits of standard structure design (Selective Mitigation Measure 7). Where avoidance is not feasible, the extent of impacts and local design plan would be provided to the USFS to review and concur that the amounts of impact remained consistent with this analysis prior to any construction activities.

During construction, design features and selective mitigation measures for limiting impacts on bald eagle include restricting construction activities to predefined spatial extents and access roads (Design Features 26 and 27). Application of additional measures could include monitoring of occupied nests or roosts, monitoring of construction activities in proximity to occupied nests, minimizing vegetation clearing to reduce impacts on habitat, and restricting pesticide application.

5.7.1.3 Cumulative Effects

On the Manti-La Sal and Uinta National Forests, 9.4 and 9.3 percent respectively, of potential foraging habitat in the cumulative impact assessment area for the agency-preferred route has been disturbed by past, present, or reasonably foreseeable future activities (Table 11). Incremental disturbance resulting from Project activities would affect 1.9 and 1.2 percent respectively, of total available habitat and account for 18.0 and 13.2 percent, respectively, of the total cumulative disturbance. Project use or creation of access roads on the three national forests is expected to contribute to disturbance to potential foraging habitat. These contributions are expected to be minimal. There is abundant undisturbed foraging habitat available on the forests, and the types of disturbance associated with the Project are unlikely to affect bald

eagle foraging. Therefore, the effects of the Project and past, present, and reasonably foreseeable future actions are not anticipated to prevent bald eagles from meeting their foraging needs on the forests.

TABLE 11
SUMMARY OF CUMULATIVE EFFECTS ON BALD EAGLE HABITAT IN ACRES

	Manti-La Sal National Forest		Uinta National Forest		Ashley National Forest	
	Foraging	Nesting, Roosting, Wintering	Foraging	Nesting, Roosting, Wintering	Foraging	Nesting, Roosting, Wintering
Project-related disturbance on U.S. Forest Service-administered land	16	–	134	1	–	–
Incremental Project-related disturbance in the cumulative effects analysis area	91	–	296	13	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	503	–	2,246	205	–	–
Potentially suitable habitat in the cumulative effects analysis area	5,338	–	24,278	1,592	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	4,794	–	21,736	1,374	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.

Impacts on potential nesting, wintering, and roosting habitat are expected only on the Uinta National Forest (Table 11). On the Uinta National Forest, approximately 12.9 percent of potential nesting, wintering, and roosting habitat in the cumulative impact assessment area for the agency-preferred route has been disturbed by past, present, or reasonably foreseeable future activities. Incremental disturbance resulting from Project activities would affect approximately 0.8 percent of total available habitat and account for 6.3 percent of the total cumulative disturbance. Project use or creation of access roads on the three national forests could contribute to disturbance to potential nesting, wintering, or roosting habitat; but these contributions are expected to be minimal with a low likelihood of impacts. The Project and the majority of other past, present, and reasonably foreseeable future actions are located in an area that has been heavily affected by human activities located outside the forest boundaries. Potential bald eagle nesting, wintering, and roosting habitat would remain largely undisturbed on USFS-administered land.

5.7.1.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual bald eagles, but would not result in a loss of viability on the Uinta and Manti-La Sal National Forests or cause a trend toward federal listing of the species.

5.7.2 Flammulated Owl

5.7.2.1 Effects

The agency-preferred route does not cross potential flammulated owl habitat on the Ashley or Manti-La Sal National Forest, and, as such, impacts are not expected on these national forests. Project-related impacts on potential flammulated owl habitat are expected to occur only on the Uinta National Forest.

These impacts are expected at only two locations—the head of Spencer Canyon and the slopes above Indian Creek Canyon—and are expected to affect minimal amounts of potential habitat relative to available habitat on the Uinta National Forest. The habitat expected to be affected at these locations is part of a larger matrix with several other potential habitat patches within 1 mile. Furthermore, these locations occur where the agency-preferred route would be colocated with existing transmission lines. Given the existing disturbance and abundance of potential habitat in the surrounding landscape, it is unlikely that Project activities would affect flammulated owls at these locations.

Where the agency-preferred route passes near the southeast corner of the Ashley National Forest, the use of existing access roads or construction of new roads is not expected to result in impacts on potential habitat, as potential habitat does not occur in this area. Use or creation of access roads on the Uinta or Manti-La Sal National Forests could result in impacts where potential habitat extends to and past the boundaries of USFS-administered land. The potential habitat possibly affected by access roads exists as part of a larger matrix with multiple patches within 1 mile. Due to the limited extent of these access roads and the availability of potential habitat in the surrounding areas, any impacts on potential flammulated owl habitat are expected to be minimal.

Disturbance to potentially suitable flammulated owl habitat could occur on USFS-administered land as a result of the proposed activities. Project-related effects on flammulated owl habitat could include the alteration and damage to trees or other vegetation during construction of Project access roads, transmission line towers, and associated facilities. Displacement of individuals as a result of habitat loss, degradation, or noise also may occur if construction activities occur in occupied flammulated owl habitat.

5.7.2.2 Mitigation Measures

Due to the lack of suitable flammulated owl potential habitat in the Project area, surveys would not be specifically conducted for the species and selective mitigation measures are not anticipated to be necessary to avoid or minimize impacts on flammulated owl.

Design features of the Project applied throughout the Project would avoid and minimize impacts on flammulated owl individuals and potential foraging habitat. During the nesting season, migratory bird surveys would be conducted prior to any ground-disturbing activities to identify occupied nests, establish seasonal and avoidance restrictions, and inform construction monitoring requirements. These surveys would likely identify any flammulated owl nesting in the Project area. All construction personnel would be informed of the federal and state laws protecting flammulated owl, the flammulated owl's ecological importance, and reporting and stop work procedures.

In the event that flammulated owl nests are identified on USFS-administered land in the Project area, the USFS will be notified and all appropriate stop work procedures followed. This may result in continued coordination between the USFS and the Applicant to avoid adverse impacts on flammulated owl and could include the application of additional avoidance and seasonal restriction measures

5.7.2.3 Cumulative Effects

On the Uinta National Forest, approximately 14.4 percent of potential flammulated owl habitat in the cumulative impact assessment area for the agency-preferred route has been disturbed by past, present, or reasonably foreseeable future activities (Table 12). Incremental disturbance resulting from Project activities would affect approximately 3.2 percent of total available habitat and account for approximately a quarter of the total cumulative disturbance.

The agency-preferred route does not cross potential habitat on the Ashley or Manti-La Sal National Forests. As such, cumulative effects were not identified in the cumulative impact analysis and included in

Table 12. Project use or creation of access roads on the Manti-La Sal and Uinta National Forests could affect potential habitat, but any contribution is expected to be minimal. There is abundant potential habitat outside of the cumulative impact assessment area located on the national forests. Therefore, the effects of the Project and past, present, and reasonably foreseeable future actions are not anticipated to prevent flammulated owls from meeting their foraging needs on the national forests.

TABLE 12
SUMMARY OF CUMULATIVE EFFECTS ON FLAMMULATED OWL HABITAT IN ACRES

	Manti-La Sal National Forest	Uinta National Forest	Ashley National Forest
Project-related disturbance on U.S. Forest Service-administered land	–	1	–
Incremental Project-related disturbance in cumulative effects analysis area	–	11	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	–	38	–
Potentially suitable habitat in the cumulative effects analysis area	–	340	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	–	292	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.

5.7.2.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual flammulated owls, but would not result in a loss of viability of the species on the Ashley, Manti-La Sal, or Uinta National Forests or cause a trend toward federal listing of the species.

5.7.3 Northern Goshawk

5.7.3.1 Effects

Potential northern goshawk foraging habitat is present along the agency-preferred route where it crosses the Manti-La Sal and Uinta National Forests. The Project may affect potential foraging habitats in these areas (Table 13). These impacts would affect less than 0.1 percent of the potential foraging habitat on the forests. Potential foraging habitat is present on the Ashley National Forest but would not be crossed by the agency-preferred route. For all three national forests, access roads constructed on USFS-administered land to access transmission line components located outside of USFS-administered land could occur in potential goshawk foraging habitat. Due to the limited extent of these access roads, any impacts on potential foraging habitat are expected to be minimal.

Impacts on potential nesting habitat are expected only on the Uinta National Forest and only at one location. This location is on the north facing slopes of Indian Creek Canyon near the ridgeline separating Indian Creek Canyon from Spanish Fork Canyon. At this location, Project-related activities are expected to affect approximately 1 acre of potential nesting habitat, affecting less than 0.1 percent of potential nesting habitat on the forest (Table 13). Aerial imagery analysis of this location reveals the potential habitat to be of poor quality, consisting of scattered to isolated conifers embedded in a matrix of scrub/shrub vegetation communities. Furthermore, this location is where the agency-preferred route

would be colocated with existing transmission lines. Given the existing disturbance and poor nesting-habitat quality, it is unlikely that Project activities would affect nesting northern goshawk at this location.

Where the centerline of the agency-preferred route passes near the southeast corner of the Ashley National Forest, the use of existing access roads or construction of new roads is not expected to result in impacts on potential nesting habitat, as potential nesting habitat does not occur in this area. Similarly, access roads that may be used by the Project on the Manti-La Sal and Uinta National Forests occur largely outside of potential nesting habitat. Aerial imagery analysis shows the small portions of potential nesting habitat potentially affected to be of poor quality, with low canopy cover and small patch size. Given the results of the analysis,, the likelihood of impacts on nesting individuals resulting from Project use or construction of access roads on USFS-administered land on all three national forests is low.

The centerline of the agency-preferred route would avoid all known nests and PFAs by at least 1 mile; the nearest nest is 1.6 miles north and the nearest PFA is 5.2 miles to the north. Access roads required for constructing and maintaining the transmission line would not be located within 1 mile of northern goshawk nests or in PFAs. The nearest nest was last documented as occupied in 1989 (UNHP 2012). As such, Project-related impacts on PFAs and known nests are not expected.

Disturbance to potential nesting and foraging habitat that could occur on USFS-administered land as a result of the Project activities could include removal, alteration, and damage to trees or other vegetation during construction of Project access roads, transmission line towers, and associated facilities. Displacement of individuals as a result of habitat loss, degradation, or noise also may occur if construction activities occur in occupied goshawk habitat. Potential for mortality to northern goshawk from electrocution and collision with the transmission structures would be avoided or minimized by implementing the design features for raptor safety found in Appendix A.

5.7.3.2 Mitigation Measures

Due to the lack of suitable northern goshawk potential nesting habitat in the Project area, surveys would not be specifically conducted for the species and selective mitigation measures are not anticipated to be necessary to avoid or minimize impacts on northern goshawk.

Design features of the Project applied throughout the Project would avoid and minimize impacts on northern goshawk individuals and potential foraging habitat. During the nesting season, migratory bird surveys would be conducted prior to any ground-disturbing activities to identify occupied nests, establish seasonal and avoidance restrictions, and inform construction monitoring requirements. These surveys would likely identify any northern goshawk nesting in the Project area. All construction personnel would be informed of the federal and state laws protecting northern goshawk, the northern goshawk's ecological importance, and reporting and stop work procedures.

In the event northern goshawk nests are identified on USFS-administered land in the Project area, the USFS will be notified and all appropriate stop work procedures followed. This may result in continued coordination between the USFS and the Applicant to avoid adverse impacts on northern goshawk and could include the application of additional avoidance and seasonal restriction measures.

5.7.3.3 Cumulative Effects

The Project would have no effect on PFAs or known northern goshawk nests on any of the three national forests. Therefore, a cumulative effects analysis is not required and was not conducted for these resources.

On the Manti-La Sal and Uinta National Forests, 3.0 and 3.8 percent, respectively, of potential foraging habitat in the cumulative impact assessment area for the agency-preferred route has been disturbed by

past, present, or future activities (refer to Table 13 below). Incremental disturbance resulting from Project activities would affect a minor portion of total available habitat (less than 0.5 percent) and account for less than 15 percent of the total cumulative disturbance. Project use or creation of access roads on the three national forests is expected to contribute to disturbance to potential foraging habitat. These contributions are expected to be minimal. There is abundant undisturbed foraging habitat available on the forests and the majority of foraging habitat near known nesting areas would not be affected by the Project or past, present, and reasonably foreseeable future actions. Therefore, the effects of the Project and past, present, and reasonably foreseeable future actions are not anticipated to prevent northern goshawks from meeting their foraging needs on the forests.

TABLE 13
SUMMARY OF CUMULATIVE EFFECTS ON NORTHERN GOSHAWK HABITAT IN ACRES

Habitat type (acres)	Manti-La Sal National Forest			Uinta National Forest			Ashley National Forest		
	Post-fledgling Areas	Potential Nesting	Potential Foraging	Post-fledgling Areas	Potential Nesting	Potential Foraging	Post-fledgling Areas	Potential Nesting	Potential Foraging
Project-related disturbance on U.S. Forest Service-administered land	–	–	16	–	1	133	–	–	–
Incremental Project-related disturbance in cumulative effects analysis area	–	–	291	–	57	753	–	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	–	–	2,428	–	1,602	9,791	–	–	–
Potentially suitable habitat in the cumulative effects analysis area	–	–	81,290	–	70,178	256,793	–	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	–	–	78,570	–	68,518	246,249	–	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.

Impacts on potential nesting habitat are expected only on the Uinta National Forest. On the Uinta National Forest, approximately 2.2 percent of potential nesting habitat in the cumulative impact assessment area for the agency-preferred route has been disturbed by past, present, or future activities. Incremental disturbance resulting from Project activities would affect a minimal portion (less than 0.1 percent) of total available habitat and account for less than 5 percent of the total cumulative disturbance. The Project and the majority of other past, present, and reasonably foreseeable future actions are located in an area that has been heavily affected by human activities and the area does not contain the vegetation type or structure that is typically associated with high quality northern goshawk nesting habitat. Large areas of high quality potential nesting habitats with known goshawk nests and PFAs exist on both forests at higher elevations. USFS manages these areas in part for the long-term persistence of northern goshawk,

and the effects of the Project and other past, present, and reasonably foreseeable future actions are not anticipated to reduce the existing number of existing goshawk nesting territories on the forest.

5.7.3.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual northern goshawks, but would not result in a loss of viability on the Ashley, Manti-La Sal, and Uinta National Forests or cause a trend toward federal listing of the species.

5.7.4 Peregrine Falcon

5.7.4.1 Effects

The agency-preferred route does not cross any potential peregrine falcon foraging or nesting habitat on the Ashley, Manti-La Sal, and Uinta National Forests. However, the landcovers used to identify potential foraging habitat are typical of optimal foraging habitat and may not reflect all areas used by peregrine falcon for foraging. As such, Project-related disturbance could result in impacts on potential foraging habitat not identified in the impacts analysis. These impacts are likely to be minimal given peregrine falcon's midflight hunting behavior. Potential nesting habitat is anticipated to be avoided by Project activities as the sheer cliffs providing suitable nesting sites would physically prevent Project activities from occurring in proximity to occupied peregrine falcon nests.

For all three national forests, access roads constructed on USFS-administered land to access transmission line components located outside of USFS-administered land could occur in, or in proximity to, potential nesting and foraging habitat. Due to the limited extent of these access roads, any impacts on potential foraging habitat are expected to be minimal. Aerial imagery analysis of these locations shows them to be lacking large, well defined cliffs and of poor nesting-habitat quality. Given the limited extent and poor habitat quality at expected locations, Project-related use or creation of access roads on USFS-administered land is unlikely to result in impacts on peregrine falcons.

Disturbance to peregrine falcons could occur on USFS-administered land as a result of the proposed activities but is unlikely as the extent of nesting habitat is extremely limited and patchy on the Ashley, Manti-La Sal, and Uinta National Forests. Foraging habitat associated with grassland and riparian areas also are limited on the Ashley, Manti-La Sal, and Uinta National Forests. Construction of permanent transmission line structures and work areas in riparian areas would likely be avoided and is not anticipated to diminish foraging habitat effectiveness for peregrine falcon on the Ashley, Manti-La Sal, and Uinta National Forests. Project-related impacts on peregrine falcon could include alteration and damage to vegetation during Project construction.

5.7.4.2 Mitigation Measures

Design features of the Project for environmental protection and selective mitigation measures would be implemented to avoid and minimize impacts on peregrine falcons. Design Features 3, 4, 7, 8, 26, and 27 and Selective Mitigation Measures 2, 4, 7, 11, 12, and 14 are applicable to activities in proximity to peregrine falcons. A full list of design features and selective mitigation measures are presented in Appendix A.

Application of mitigation measures would be similar to the mitigation measures used for bald eagle.

5.7.4.3 Cumulative Effects

The agency-preferred route does not cross peregrine falcon habitat on the Ashely, Uinta, or Manti-La Sal National Forests. As such, no cumulative effects were identified through the cumulative impacts analysis. However, impacts on falcon foraging habitat outside the identified potential foraging habitat may occur and contribute to total cumulative disturbance to potential foraging habitat. Similarly, Project use or creation of access roads on the three national forests may contribute to disturbance to potential foraging habitat. Both of these contributions are expected to be minimal. There is abundant undisturbed foraging habitat available on the forests, and the types of disturbance associated with the Project are unlikely to affect peregrine falcon foraging. Therefore, the effects of the Project and past, present, and reasonably foreseeable future actions are not anticipated to prevent peregrine falcon from meeting their foraging needs on the forests.

Impacts on potential nesting habitat are not expected on any of the three national forests as the agency-preferred route does not cross nesting habitat on all three national forests. As such, cumulative effects were not identified in the cumulative impact analysis. Project use or creation of access roads on the three national forests is not expected to contribute to disturbance to potential nesting habitat. Therefore, the effects of the Project and past, present, and reasonably foreseeable future actions are not anticipated to prevent peregrine falcon from meeting their nesting needs on the forests.

5.7.4.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual peregrine falcons, but would not result in a loss of viability on the Ashley, Manti-La Sal, and Uinta National Forests or cause a trend toward federal listing of the species.

5.7.5 Three-toed Woodpecker

5.7.5.1 Effects

The agency-preferred route does not cross potential three-toed woodpecker habitat on the Ashley, Manti-La Sal, and Uinta National Forests. Potential habitat occurs within 1 mile of the agency-preferred route at only two locations on USFS-administered land. These locations are both on the Uinta National Forest, approximately 0.8 miles from the agency-preferred route on slopes above Tabbyune Creek and Spencer Canyon. The distance between these locations and the agency-preferred route is approximately twice the diameter of average territory size (NatureServe 2013). The habitat at both of these locations is small (less than 50 acres) in patchily distributed stands of open conifers. According to density estimates in the western United States, these stands could marginally support resident three-toed woodpeckers (Wiggins 2004) but are more likely to be of use as foraging habitat following disturbance (Koplin 1969). Given the poor habitat quality and distance from the agency-preferred route, impacts on three toed woodpeckers at these locations and throughout the Project area are unlikely. All documented observations of three-toed woodpeckers occur well outside the agency-preferred route, with the nearest being 8 miles north on the Uinta National Forest near Bald Mountain.

For all three forests, access roads constructed on USFS-administered land to access transmission line components located outside of USFS-administered land would not be located within 1 mile of potential habitat. As such, use of these access roads is not expected to result in impacts on three-toed woodpeckers.

5.7.5.2 Mitigation Measures

Due to the lack of suitable three-toed woodpecker habitat in the Project area, surveys would not be conducted for the species and selective mitigation measures are not anticipated to be necessary to avoid or minimize impacts on three-toed woodpecker.

5.7.5.3 Cumulative Effects

The centerline of the agency-preferred route does not cross potential three-toed woodpecker habitat on any of the three national forests. Furthermore, potential habitat on USFS-administered land does not occur in the cumulative impact assessment area defined as the diameter of average territory. As such, no cumulative effects were identified through the cumulative impacts analysis.

The Project is not expected to result in impacts on three-toed woodpeckers and, therefore, would not incrementally contribute to cumulative disturbance to three-toed woodpeckers.

The Project and the majority of other past, present, and reasonably foreseeable future actions are located in an area that has been heavily affected by human activities, and the area does not contain the vegetation type or structure that is typically associated with high quality three-toed woodpecker habitat. Large areas of higher quality potential habitat exist on all three forests at higher elevations.

5.7.5.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual three-toed woodpeckers, but would not result in a loss of viability on the Ashley, Manti-La Sal, and Uinta National Forests or cause a trend toward federal listing of species.

5.7.6 Spotted Bat and Townsend's Big-eared Bat

5.7.6.1 Effects

Potential spotted bat and Townsend's big-eared bat foraging habitat is present along the agency-preferred route where it crosses the Manti-La Sal and Uinta National Forests. Project-related activities could affect less than 0.1 percent of potential foraging habitat on the Manti-La Sal and Uinta National Forests (Table 14). Potential foraging habitat is present on the Ashley National Forest but would not be crossed by the agency-preferred route. On all three national forests, access roads constructed on USFS-administered land to access transmission line components located outside of USFS-administered land could occur in potential spotted bat and Townsend's big-eared bat foraging habitat. Due to the limited extent of these access roads, any impacts on potential foraging habitat are expected to be minimal.

Potential spotted bat and Townsend's big-eared bat roosting habitat is present on all three national forests, but the agency-preferred route does not cross potential roosting habitat on USFS-administered land. Potential roosting habitat is anticipated to be avoided by Project activities as the steep cliffs, rock walls, and caves that provide suitable roosting sites would physically prevent Project activities from occurring in proximity to roosting spotted bat and Townsend's big-eared bat. Reports of spotted bat roosting under fallen rocks and other less typical roosting habitat (Poché 1981) likely result from release of captured bats during daylight hours, and roost selection was probably guided by desperation rather than preference (Oliver 2000). Given the ruggedness of typical roosting habitat, Project activities would likely avoid all potential roosting habitat, and impacts on spotted bat and Townsend's big-eared bat roosting habitat are not expected.

Where the centerline of the agency-preferred route passes near the southeast corner of the Ashley National Forest, the southern edge of the Uinta National Forest along Argyle Canyon, and the northern tip

of the Manti-La Sal National Forest near Nephi, the use of existing access roads or construction of new roads could occur in proximity to potential roosting habitat. Project activities would likely avoid this habitat due to the rugged terrain, and impacts on spotted bat and Townsend's big-eared bat roosting habitat are unlikely to occur.

Disturbance to potentially suitable spotted bat and Townsend's big-eared bat roosting and foraging habitat could occur on USFS-administered land as a result of the proposed activities. Project-related impacts on spotted and Townsend's big-eared bat foraging habitat could include alteration and damage to trees or other vegetation during construction of Project access roads, transmission line towers, and associated facilities. Impacts on roosting habitat could include disturbance to potential roosting sites from ground clearing activities or increased noise and human presence during construction. Displacement of individuals may occur as a result of foraging habitat degradation, increased noise, or increased human presence.

5.7.6.2 Mitigation Measures

The Project is expected to avoid all suitable roosting habitat in the Project area. As such, bat surveys would not be conducted and selective mitigation measures are not anticipated to be necessary to avoid or minimize impacts on spotted bat and Townsend's big-eared bat.

Design features of the Project applied throughout the Project would avoid and minimize impacts on individual spotted bats and Townsend's big-eared bats and foraging habitat. During the nesting season, migratory bird surveys would be conducted prior to any ground-disturbing activities. Despite being focused on bird species, these surveys could identify potential roosts in the Project area and be used to create seasonal and avoidance restrictions and inform construction monitoring requirements. All construction personnel would be informed of the federal and state laws protecting spotted bat and Townsend's big-eared bat, the species' ecological importance, and reporting and stop work procedures.

In the event a roost is discovered during Project activities, the USFS will be notified and all appropriate stop-work procedures followed. This may result in continued coordination between the USFS and the Applicant and could include the application of avoidance and seasonal restriction measures.

5.7.6.3 Cumulative Effects

Potential foraging habitat is not crossed on the Ashley National Forest and not identified in the cumulative impact analysis (Table 14). On the Manti-La Sal and Uinta National Forests, approximately 3.9 and 9.2 percent, respectively, of potential foraging habitat has been disturbed by past, present, or reasonably foreseeable future activities. Incremental disturbance resulting from Project activities would affect a minor portion of total available habitat (less than 0.5 percent) and account for less than 10 percent of the total cumulative disturbance. Project use or creation of access roads on the three national forests is expected to contribute to disturbance to potential foraging habitat. These contributions are expected to be minimal, as there is abundant undisturbed foraging habitat available on the forests.

TABLE 14 SUMMARY OF CUMULATIVE EFFECTS ON SPOTTED BAT AND TOWNSEND'S BIG-EARED BAT HABITAT IN ACRES						
	Manti-La Sal National Forest		Uinta National Forest		Ashley National Forest	
	Potential Roosting	Potential Foraging	Potential Roosting	Potential Foraging	Potential Roosting	Potential Foraging
Project-related disturbance on U.S. Forest Service-administered land	–	16	–	134	–	–
Incremental Project-related disturbance in cumulative effects analysis area	–	294	–	838	–	–
Past, present, and reasonably foreseeable future disturbance in cumulative effects analysis area	–	3,782	–	29,808	–	–
Potentially suitable habitat in the cumulative effects analysis area	–	95,816	–	323,563	–	–
Potentially suitable habitat remaining[1] in the cumulative effects analysis area	–	91,741	–	292,917	–	–

NOTES:
Acres in the table are rounded to the nearest acre; therefore, columns may not sum exactly. Total acres are an overestimate as most affected habitat would not actually be lost.
[1]The remaining suitable habitat was calculated by subtracting acres of incremental Project disturbance and past, present, and reasonably foreseeable future actions from the suitable habitat in the cumulative effects analysis area.

Impacts on potential roosting habitat are not expected on any of the three national forests as the centerline of the agency-preferred route does not cross roosting habitat on the three national forests. As such, cumulative effects were not identified in the cumulative impact analysis (Table 14). Project use or creation of access roads on the three national forests is not expected to contribute to disturbance to potential roosting habitat.

5.7.6.4 Determination

Construction, operation, and maintenance of the Project along the proposed route may affect individual spotted or Townsend's big-eared bats, but would not result in a loss of viability on the Ashley and Manti-La Sal National Forests or cause a trend toward federal listing of the species.

6.0 Determination

As a result of the analyses discussed in this biological evaluation, it is our professional determination that implementation of the proposed Project may affect individuals or habitat of all sensitive species analyzed in this document, but will not likely contribute to a trend toward federal listing or cause a loss of viability to these populations or species.

7.0 Management Recommendations

Implementation of all selective mitigation measures discussed for each species in this BE is recommended to avoid or reduce impacts on USFS-sensitive species.

During construction and maintenance activities, Project personnel should be made aware of the potential for sensitive species to occur in the Project area. If, during construction or maintenance, these species are present in the Project area in any of the national forests, and effects on these species are determined by a qualified biologist to exceed the effects disclosed in this BE, construction and maintenance must halt in the affected area. The appropriate national forest wildlife biologists must be notified and appropriate protection measures must be established before construction may resume.

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