3.8 Special Status Wildlife Species

3.8.1 Regulatory Background

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the ESA and species designated as sensitive by the BLM and USFS. In addition, there are state-protected and sensitive wildlife lists for Colorado, Utah, and Nevada (Colorado Revised Statutes 33-2-105, Utah Rules R657-3, R657-19, R657-48, and Nevada Administrative Code 501.100-503.104) that include many of the BLM and USFS sensitive species as well as ESA-listed species.

In accordance with the ESA, the lead agencies (BLM and Western) and USFS, in coordination with the USFWS, must ensure that any action that they authorize, fund, or carry out is not likely to jeopardize a federally listed species or result in the destruction or adverse modification of critical habitat. In addition, as stated in the BLM's Special Status Species Management Policy 6840 (6840 Policy) (Rel. 6-125), it is BLM policy "to conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA provisions are no longer needed for these species, and to initiate proactive conservation measures that reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing of these species under the ESA." The USFS Manual (FSM) 2670 states "Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing".

Regulations that directly influence special status wildlife species management decisions within the special status species wildlife analysis area are primarily implemented by the BLM, USFS, and state wildlife agencies, which consist of the WGFD, CPW (formerly CDOW), UDWR, and NDOW. Specific special status species statutes, regulations, and policies relevant to the proposed project are presented in **Table 3.8-1**.

Table 3.8-1 Statutes, Regulations, and Policies Relevant to Special Status Species

Topic	Statutes, Regulations, and Policies
Wildlife (mammals, birds, reptiles, terrestrial invertebrates)	• Endangered Species Act (ESA) of 1973; • Migratory Bird Treaty Act (16 USC 703 et seq.); • BLM Special Status Species Management Policy 6840 (6840 Policy) (Rel. 6-125); • U.S. Forest Service Manual (FSM) 2670; • Colorado Revised Statutes 33-2-105; • Utah Rules R657-3, R657-19, and R657-48; • Nevada Administrative Code 501.100-503.104; • Bald and Golden Eagle Protection Act (16 USC, § 668 et seq.); • BLM Instruction Memorandums (IM) 2010-012, 2010-156, 2012-043, and 2012-044; and • State of Wyoming Executive Order 2011-5.

The USFS further defines MIS for each national forest. A MIS is a plant or animal species selected because its status is believed to: 1) be indicative of the status of a larger group of species; 2) be reflective of the status of a key habitat type; or 3) act as an early warning of an anticipated stressor to ecological integrity. The key characteristics of MIS are that their status and trends provide insight to the integrity of the larger ecological system to which they belong. Wildlife species that have been selected as MIS for the National Forests crossed by the project are presented in **Table 3.8-2**. Seven MIS also are categorized as special status species and are addressed in this section. The remainder is presented in Section 3.7, Wildlife. Mule deer and Rocky Mountain elk are analyzed as big game species in Section 3.7, Wildlife.

Table 3.8-2 USFS Management Indicator Species for National Forests Crossed by the Project

Species/Habitat Association[1]	Scientific Name	Ashley National Forest Region II	Dixie National Forest Region III	Fishlake National Forest Region II	Manti-La Sal National Forest Region II	Uinta-Wasatch-Cache National Forest Region II
Mammals						
Abert's squirrel Habitat Association: 6	*Sciurus aberti*				MIS, but does not occur in analysis area of this national forest	
American beaver Habitat Association: 15,21	*Castor Canadensis*					MIS
Mule deer Refer to Section 3.7.4.1	*Odocoileus hemionus*	MIS	MIS	MIS	MIS, Big Game	
Elk Refer to Section 3.7.4.1	*Cervus Canadensis*	MIS	MIS	MIS	MIS, Big Game	
Birds						
Northern goshawk Habitat Association: 2, 5, 6	*Accipiter gentilis*	MIS, USFS, BLM, NV-P, UT-SS Tier I	MIS, USFS, BLM, NV-P, UT-SS Tier I	MIS, USFS, BLM, NV-P, UT-SS Tier I	MIS, USFS, BLM, NV-P, UT-SS Tier I	MIS, USFS, BLM, NV-P, UT-SS Tier I
Golden eagle Habitat Association: 1, 4, 7, 10, 13, 14, 16, 18, 19, 20	*Aquila chrysaetos*	MIS, BLM			MIS, BLM	
Greater sage-grouse Habitat Association: 18	*Centrocercus urophasianus*	MIS, FC, BLM, USFS, UT-SS Tier I				
White-tailed ptarmigan Habitat Association: 20	*Lagopus leucura*	MIS				
Wild turkey Habitat Association: 1, 2, 5, 6, 7, 10, 11, 13, 16, 19, 21	*Meleagris gallopavo*		MIS			
Red-naped sapsucker Habitat Association: 2, 5, 6, 21	*Sphyrapicus nuchalis*	MIS, BLM				
Hairy woodpecker Habitat Association: 1, 2, 6, 16, 21	*Picoides villosus*			MIS		
American three-toed woodpecker Habitat Association: 5	*Picoides dorsalis*					MIS, BLM, USFS, UT-SS Tier II
Northern flicker Habitat Association: 1, 2, 5, 6, 12, 16, 21	*Colaptes auratus*		MIS			
Warbling vireo Habitat Association: 2, 16, 21	*Vireo gilvus*	MIS				
Western bluebird Habitat Association: 1, 2, 5, 6, 10, 13, 16, 19, 21	*Sialia Mexicana*			MIS		
Mountain bluebird Habitat Association: 1, 2, 5, 6, 10, 13, 16, 19, 21	*Sialia currucoides*			MIS		
Sage thrasher Habitat Association: 18	*Oreoscoptes montanus*			MIS, BLM		

Table 3.8-2 USFS Management Indicator Species for National Forests Crossed by the Project

Species/Habitat Association[1]	Scientific Name	Ashley National Forest Region II	Dixie National Forest Region III	Fishlake National Forest Region II	Manti-La Sal National Forest Region II	Uinta-Wasatch-Cache National Forest Region II
Yellow warbler Habitat Association: 2, 16, 19, 21	*Dendroica petechia*			MIS		
MacGillivray's warbler Habitat Association: 2, 16, 19, 21	*Oporornis tolmiei*			MIS		
Brewer's sparrow Habitat Association: 18	*Spizella breweri*			MIS		
Vesper sparrow Habitat Association: 1, 10, 13, 18	*Pooecetes gramineus*			MIS, BLM		
Song sparrow Habitat Association: 1, 2, 5, 6, 10, 11, 12, 13, 14, 16, 17, 18, 19, 21	*Melospiza melodia*	MIS		MIS		
Lincoln's sparrow Habitat Association: 2, 12, 16, 19, 21	*Melospiza lincolnii*			MIS		

[1] Habitat association refers to vegetation communities (by number) as presented in **Table 3.7-2**.

Note: Status is defined as: BLM = BLM Sensitive, USFS = USFS Sensitive, UT-SS = Utah Sensitive Species (Tier I and Tier II species are defined in Utah's Comprehensive Wildlife Strategy), NV-P = Nevada State Protected.

3.8.2 Data Sources

Information regarding special status wildlife species and their habitat within the special status species analysis area was obtained from a review of existing published sources, BLM RMPs, USFS forest management plans, BLM, USFS, WGFD, CPW, UDWR, NDOW, and USFWS file information, as well as WYNDD, CNHP, UNHP, and NNHP database information. In addition, information resulting from correspondence with agency wildlife biologists was incorporated into this section, as appropriate. Species-specific surveys will be conducted, as appropriate, after the agency preferred alternative has been finalized and preliminary engineering is complete.

3.8.3 Analysis Areas

The special status wildlife species analysis areas are presented in **Table 3.8-3**.

Table 3.8-3 Analysis Areas for Special Status Wildlife Species

Species	Region	Analysis Area
Federally listed and Candidate Species		
Desert tortoise	III and IV	USGS model rankings 0.7 – 1.0.
California condor	III	HUC10 watersheds traversed by the route alternatives in Region III.
Greater sage-grouse	I, II, III	• Core Areas in Wyoming. • Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH) in Colorado. • Occupied, brood-rearing, and wintering habitat in Utah.

Table 3.8-3 Analysis Areas for Special Status Wildlife Species

Species	Region	Analysis Area
• Whooping crane • Piping plover • Interior least tern	I	Potentially suitable wetlands and waterbodies within the Platte River watershed.
Yuma clapper rail	III, IV	Herbaceous wetland areas within 0.5 mile of the 2-mile transmission line corridor along the Muddy River in Nevada.
Western yellow-billed cuckoo	I, II, III, IV	Compare Natural Heritage data within a 0.5 mile buffer of perennial waterbodies with developed riparian vegetation within the HUC10 watersheds traversed by the route alternatives.
Mexican spotted owl	II, III	Modeled habitat in the Vernal Field Office.
Southwestern willow flycatcher	III, IV	The following Management Units within the Lower Colorado Recovery Unit: Pahranagat, Virgin, western portion of the Middle Colorado, Hooter-Parker, and southern portion of the Amargosa. Also included is the area within 0.5 mile of the riparian corridor, which is crossed by the Project at Newcastle Reservoir and Pinto Creek.
Black-footed ferret	I, II	Non-essential Experimental Population Areas in Utah and Colorado, Continental Divide (2), Dad, and Desolation Flats non-block cleared areas in Wyoming.
Canada lynx	I, II	Forested habitats in the HUC10 watersheds traversed by the route alternatives in Region II.
Utah prairie dog	II, III	West Desert Recovery Unit, Paunsaugunt Recovery Unit, Awapa Plateau Recovery Unit.
Gray wolf	I, II	HUC10 watersheds traversed by the route alternatives in Regions I and II.
BLM, USFS Sensitive, and State-Protected Species		
Mammals		
Bats	All	HUC10 watersheds traversed by the route alternatives.
• Dark kangaroo mouse • Desert Valley kangaroo mouse • Idaho pocket gopher • White-tailed prairie dog	All	HUC10 watersheds traversed by the route alternatives.
Pygmy rabbit	I, II, III	Sagebrush within HUC10 watersheds traversed by the route alternatives in Regions I, II, and III.
Fisher	II	Uintah/Wasatch/Cache National Forest, conifer forest habitat within HUC10 watersheds traversed by the route alternatives.
• Kit fox • Swift fox	All	Suitable habitat within species' respective ranges in HUC10 watersheds traversed by the route alternatives.
Wolverine	I, II	• Ashley National Forest. • Tundra and conifer forest in CO within HUC10 watersheds traversed by the route alternatives.
River otter	I, II	Open water and woody riparian vegetation communities in HUC10 watersheds traversed by the route alternatives in Regions I and II.
Desert bighorn sheep	II, III, IV	• Big Game Management Units in Colorado, Utah, and Nevada. • Dixie, Fishlake and Manti-La Sal national forests.
Rocky Mountain bighorn sheep	I, II, III	• Big Game Management Units in Wyoming, Colorado, and Utah. • Ashley and Uintah/Wasatch/Cache national forests.

Table 3.8-3 Analysis Areas for Special Status Wildlife Species

Species	Region	Analysis Area
Raptors and Other Migratory Birds		
Birds except federally listed and candidate species[1]	All	• HUC10 watersheds traversed by the route alternatives. • Ashley, Dixie, Fishlake, Manti-La Sal, and Uintah/Wasatch/Cache national forests.
Reptiles		
Reptiles	All	HUC10 watersheds traversed by the route alternatives.
Terrestrial Invertebrates		
Terrestrial invertebrates	All	HUC10 watersheds traversed by the route alternatives.
USFS MIS Species (Those not addressed in Section 3.7)		
Northern goshawk	II and III	Suitable habitat within the Ashley, Dixie, Fishlake, Manti-La Sal, and Uintah/Wasatch/Cache national forests.
Golden eagle	II and III	• HUC10 watersheds traversed by the route alternatives. • Suitable habitat within the Ashley and Manti-La Sal national forests.
Red-naped sapsucker	II	Suitable habitat within the Ashley National Forest.
• Sage thrasher • Vesper sparrow	II	Suitable habitat within the Fishlake National Forest.
American three-toed woodpecker	II	Suitable habitat within the Uintah/Wasatch/Cache National Forest.

[1] The greater sage-grouse also is classified as an MIS for the Ashley National Forest, but the greater sage-grouse analysis area is defined more specifically as a candidate species.

The special status wildlife analysis area is defined as suitable habitat within the HUC 10 watershed areas crossed by the Project. This area is referred to as the special status wildlife analysis area. The HUC 10 watershed areas provide a clear delineation of vegetation communities supporting wildlife habitat that are separated by distinct geographical features, such as elevation and topography. Other special status species with more limited ranges and/or specifically defined habitat preferences are accorded more detailed analysis areas (**Table 3.8-3**). Section 3.4, Water Resources, presents tables and figures of HUC 10 watersheds in the wildlife analysis area.

The MIS Analysis Area for USFS MIS includes suitable habitat within the entire national forest(s) for which they are identified. This MIS Analysis Area was chosen because it allows disclosure of the context of impacts within the unique requirements of the USFS for monitoring and managing MIS species within the jurisdiction of NFS lands. The exceptions are mule deer and Rocky Mountain elk, which are analyzed under the big game analysis areas described in Section 3.7, Wildlife.

Special status wildlife analysis areas were chosen because they represent the combination of geographic areas containing habitats that would be impacted by the proposed Project, as well as management considerations to which these habitats are subject. Accordingly, these analysis areas provide a clear disclosure of the context of Project impacts in light of the management considerations for these areas.

Table 3.8-4 presents the acreages of the major vegetation communities present within the special status wildlife analysis area. These acreages also are presented in **Table 3.7-2**.

Table 3.8-4 Vegetation Communities Within the Special Status Wildlife Analysis Area

Vegetation Community	Acres Within the Special Status Wildlife Analysis Area[1]	Percent of the Special Status Wildlife Analysis Area
1. Agricultural Land	784,433	3.1
2. Aspen Forest and Woodland	641,483	2.6
3. Barren/Sparsely Vegetated	321,697	1.3
4. Cliff and Canyon	816,392	3.3
5. Conifer Forest	539,604	2.2
6. Deciduous Forest	13,933	0.1
7. Desert Shrubland	3,074,124	12.3
8. Developed/Disturbed Land[2]	988,126	4.0
9. Dunes	133,157	0.5
10. Grassland	1,537,916	6.2
11. Greasewood Flat	875,991	3.5
12. Herbaceous Wetland	188,239	0.8
13. Montane Grassland	70,313	0.3
14. Montane Shrubland	875,292	3.5
15. Open Water	154,328	0.6
16. Pinyon-juniper	4,081,539	16.4
17. Riparian	68,489	0.3
18. Sagebrush Shrubland	6,539,728	26.2
19. Saltbush Shrubland	2,991,796	12.0
20. Tundra	13,956	0.1
21. Woody Riparian and Wetlands	214,144	0.9
Total	24,924,680	100.0

[1] The special status wildlife analysis area includes suitable habitat within the HUC10 watershed areas crossed by the Project.

[2] The developed/disturbed vegetation community is not considered to be typical wildlife habitat and is not included in analyses.

Sources: USGS 2010, 2005, 2004 (SWReGAP and NWReGAP).

Table 3.8-5 presents the acreages of the major vegetation communities present within each national forest crossed by the Project. These acreages also are presented in **Table 3.7-3**.

3.8.4 Baseline Description

A total of 129 special status wildlife species were identified as potentially occurring within the special status wildlife analysis area. These species, their associated habitats, and their potential for occurrence in the special status wildlife analysis area are summarized in **Appendix G**, **Table G-2**. Occurrence potential within the special status wildlife analysis area was evaluated for each species based on its habitat requirements and known distribution. Based on these parameters, nine special status wildlife species (Aegialian scarab beetle, Gunnison sage-grouse, Baird's sparrow, Preble's meadow jumping mouse, Preble's shrew, silky pocket mouse, Mexican vole, Gunnison's prairie dog, and black-tailed prairie dog) have been eliminated from detailed analysis, as discussed in **Appendix G**, **Table G-2**. The basis for elimination of a species is that the special status wildlife analysis area does not include the geographic

Table 3.8-5 Vegetation Communities Within National Forests Crossed by the Project

Vegetation Community	Ashley National Forest Region II		Dixie National Forest Region III		Fishlake National Forest Region II		Manti-La Sal National Forest Region II		Uinta-Wasatch-Cache National Forest Region II	
	Acres	Percent of Forest	Acres	Percent of Forest	Acres	Percent of Forest	Acres	Percent of Forest	Acres	Percent of Forest
Agriculture	2,691	0.2	629	<0.1	623	<0.1	1,466	0.1	290	<0.1
Aspen Forest and Woodland	102,261	7.7	196,825	10.5	196,958	13.5	234,483	17.5	231,663	25.9
Barren/Sparsely Vegetated	136,429	10.2	26,266	1.4	11,977	0.8	16,519	1.2	11,182	1.2
Cliff and Canyon	39,266	2.9	93,023	4.9	38,891	2.7	43,352	3.2	25,335	2.8
Conifer Forest	543,194	40.7	537,641	28.5	224,021	15.4	289,618	21.7	114,549	12.8
Deciduous Forest	1,125	0.1	0	0.0	1	<0.1	0	0.0	28,171	3.1
Desert Shrubland	0	0.0	5,265	0.3	121	<0.1	1	<0.1	0	0.0
Developed/Disturbed[1]	42,056	3.1	26,479	1.4	28,664	2.0	4,505	0.3	497	0.1
Dunes	23	<0.1	2	<0.1	0	0.0	0	0.0	0	0.0
Grassland	1,591	0.1	2,010	0.1	7,453	0.5	104	<0.1	3,211	0.4
Greasewood Flat	1,891	0.1	19	<0.1	306	<0.1	80	<0.1	0	0.0
Herbaceous Wetland	28,424	2.1	4,438	0.2	4,530	0.3	2,789	0.2	15,225	1.7
Montane Grassland	25,557	1.9	12,854	0.7	9,129	0.6	26,225	2.0	26,455	3.0
Montane Shrubland	36,831	2.8	106,207	5.6	211,109	14.5	230,868	17.3	168,362	18.8
Open Water	21,383	1.6	2,445	0.1	4,334	0.3	2,282	0.2	16,673	1.9
Pinyon-Juniper	104,031	7.8	521,470	27.7	426,154	29.3	265,022	19.8	50,613	5.7
Riparian	119	<0.1	0	0.0	0	0.0	0	0.0	0	0.0
Sagebrush Shrubland	200,159	15.0	315,223	16.7	270,972	18.6	192,203	14.4	187,523	20.9
Saltbush Shrubland	15,422	1.2	497	<0.1	2,738	0.2	2,814	0.2	71	<0.1
Tundra	17,639	1.3	16,504	0.9	7,664	0.5	18,793	1.4	57	<0.1
Woody Riparian and Wetlands	15,120	1.1	15,660	0.8	8,234	0.6	6,028	0.5	15,377	1.7
Totals	**1,335,210**	**100**	**1,883,453**	**100**	**1,453,879**	**100**	**1,337,152**	**100**	**895,255**	**100**

[1] Developed/disturbed land is not considered to be typical wildlife habitat and is not included in analyses.

range of the species. In addition, the whooping crane, interior least tern, and piping plover do not occur in the special status wildlife analysis area, but are included because of the water depletion evaluation requirement in the Platte River Basin. Special status wildlife species carried forward in this EIS include 38 mammals, 51 birds, 19 reptiles, and 12 terrestrial invertebrates, for a total of 120 species (**Table 3.8-6**).

Table 3.8-6 Species Potentially Occurring in the Special Status Wildlife Analysis Area

Common Name	Scientific Name	Status[1]
Mammals		
Allen's big-eared bat	*Idionycteris phyllotis*	BLM; NV-P; UT-SS - Tier II
Big brown bat	*Eptesicus fuscus*	BLM
Big free-tailed bat	*Nyctinomops macrotis*	BLM; UT-SS - Tier II
Brazilian free-tailed bat	*Tadarida braziliensis*	BLM
California leaf-nosed bat	*Macrotus californicus*	NV-P
California myotis	*Myotis californicus*	BLM
Cave myotis	*Myotis velifer*	BLM
Fringed myotis	*Myotis thysanodes*	BLM; UT-SS; NV-P
Greater western mastiff bat	*Eumops perotis*	BLM; NV-P
Hoary bat	*Lasiurus cinereus*	BLM
Long-eared myotis	*Myotis evotis*	BLM
Long-legged myotis	*Myotis volans*	BLM
Pallid bat	*Antrozous pallidus*	BLM
Silver-haired bat	*Lasionycteris noctivagans*	BLM
Spotted bat	*Euderma maculatum*	BLM; USFS; UT-SS - Tier II; NV-P
Townsend's (Western) big-eared bat	*Corynorhinus townsendii*	BLM; USFS; UT-SS - Tier II; NV-P
Western pipistrelle	*Pipistrellus hesperus*	BLM
Western red bat	*Lasiurus blossevillii*	BLM; UT-SS - Tier II; NV-P
Western small-footed myotis	*Myotis ciliolabrum*	BLM
Yuma myotis	*Myotis yumanensis*	BLM
Black-footed ferret	*Mustela nigripes*	EXP/NE; BLM; UT-SS; CO-SE
Canada lynx	*Lynx canadensis*	FT; BLM; UT-SS - Tier I; CO-SE
Fisher	*Martes pennanti*	USFS
Gray wolf	*Canis lupus*	FE in CO and portions of UT; BLM; UT-SS - Tier I
Kit fox	*Vulpes macrotis*	BLM; UT-SS - Tier II; CO-SE
River otter	*Lontra canadensis*	BLM; CO-ST
Swift fox	*Vulpes velox*	BLM
Wolverine	*Gulo gulo*	FC; USFS; CO-SE
Desert bighorn sheep	*Ovis canadensis nelsoni*	BLM; USFS
Rocky Mountain bighorn sheep	*Ovis canadensis*	BLM; USFS
Dark kangaroo mouse	*Microdipodops megacephalus*	BLM; UT-SS - Tier II
Pale kangaroo mouse	*Microdipodops pallidus*	BLM
Desert Valley kangaroo mouse	*Microdipodops megacephalus albiventer*	BLM; NV-P
Idaho pocket gopher	*Thomomys idahoensis*	BLM
Utah prairie dog	*Cynomys parvidens*	FT; BLM; UT-SS - Tier I
White-tailed prairie dog	*Cynomys leucurus*	BLM; UT-SS - Tier II
Wyoming pocket gopher	*Thomomys clusius*	BLM
Pygmy rabbit	*Brachylagus idahoensis*	BLM; USFS; UT-SS - Tier II
Birds		
American white pelican	*Pelecanus erythrorhynchos*	BLM, UT-SS – Tier I
Least bittern	*Ixobrychus exilis*	BLM; NV-P
White-faced ibis	*Plegadis chihi*	BLM
California condor	*Gymnogyps californianus*	FE; EXP/NE-UT; BLM; UT-SS - Tier I

Table 3.8-6 Species Potentially Occurring in the Special Status Wildlife Analysis Area

Common Name	Scientific Name	Status[1]
Trumpeter swan	*Cygnus buccinator*	BLM
Barrow's goldeneye	*Bucephala islandica*	BLM
Bald eagle	*Haliaeetus leucocephalus*	BLM; USFS; CO-ST; NV-P; UT-SS - Tier I
Northern goshawk	*Accipiter gentilis*	BLM; USFS; MIS; NV-P; UT-SS - Tier I
Swainson's hawk	*Buteo swainsoni*	BLM
Ferruginous hawk	*Buteo regalis*	BLM; NV-P; UT-SS - Tier II
Golden eagle	*Aquila chrysaetos*	BLM, MIS
Peregrine falcon	*Falco peregrinus*	BLM; USFS; NV-P
Prairie falcon	*Falco mexicanus*	BLM
Greater sage-grouse	*Centrocercus urophasianus*	FC; BLM; USFS, MIS; UT-SS - Tier II
Columbian sharp-tailed grouse	*Tympanuchus phasianellus columbianus*	BLM; UT-SS - Tier II
Yuma clapper rail	*Rallus longirostris yumanensis*	FE; NV-P
Whooping crane[2]	*Grus americana*	FE; CO-SE; UT-SS - Tier I
Western snowy plover	*Charadrius alexandrinus nivosus*	BLM
Piping plover[2]	*Charadrius melodus*	FT; CO-ST
Mountain plover	*Chardrius montanus*	BLM; UT-SS
Long-billed curlew	*Numenius americanus*	BLM; UT-SS - Tier II
Interior least tern[2]	*Sternula antillarum*	FE; CO-SE
Black tern	*Chlidonias niger*	BLM
Yellow-billed cuckoo (western)	*Coccyzus americanus*	FC; BLM; USFS; NV-P; UT-SS – Tier I
Flammulated owl	*Otus flammeoulus*	BLM; USFS
Burrowing owl	*Athene cunicularia*	BLM; CO-ST; UT-SS - Tier II
Mexican spotted owl	*Strix occidentalis lucida*	FT; BLM; CO-ST; UT-SS
Long-eared owl	*Asio otus*	BLM
Short-eared owl	*Asio flammeus*	BLM; UT-SS - Tier II
Boreal owl	*Aegolius funereus*	USFS
Black swift	*Cypseloides niger*	BLM; UT-SS - Tier II
Lewis's woodpecker	*Melanerpes lewis*	BLM; UT-SS - Tier II
Red-naped sapsucker	*Sphyrapicus nuchalis*	BLM, MIS
American three-toed woodpecker	*Picoides dorsalis*	BLM; USFS; MIS; UT-SS - Tier II
Southwestern willow flycatcher	*Empidonax traillii extimus*	FE; BLM; UT-SS - Tier I; CO-SE; NV-P
Loggerhead shrike	*Lanius ludovicianus*	BLM
Gray vireo	*Vireo vicinior*	BLM
Pinyon jay	*Gymnorhinus cyanocephalus*	BLM
Juniper titmouse	*Baeolophus griseus*	BLM
Sage thrasher	*Oreoscoptes montanus*	BLM, MIS
Bendire's thrasher	*Toxostoma bendirei*	BLM; NV-P
Crissal thrasher	*Toxostoma crissale*	BLM
Le Conte's thrasher	*Toxostoma lecontei*	NV-P; BLM
Phainopepla	*Phainopepla nitens*	BLM; NV-P
Lucy's warbler	*Vermivora luciae*	BLM
Yellow-breasted chat	*Icteria virens*	BLM
Brewer's sparrow	*Spizella breweri*	BLM, MIS
Vesper sparrow	*Pooecetes gramineus*	BLM, MIS
Sage sparrow	*Amphispiza belii*	BLM
Grasshopper sparrow	*Ammodramus savannarum*	BLM; UT-SS - Tier II
Bobolink	*Dolichonyx oryzivorus*	BLM; UT-SS - Tier II
Reptiles		
Banded Gila monster	*Heloderma suspectum cinctum*	BLM; NV-P

Table 3.8-6 Species Potentially Occurring in the Special Status Wildlife Analysis Area

Common Name	Scientific Name	Status[1]
Chuckwalla	*Sauromalus obesus*	BLM; UT-SS - Tier II
Corn snake	*Elaphe guttata*	BLM; UT-SS - Tier II
Desert iguana	*Dipsosaurus dorsalis*	BLM; UT-SS - Tier II
Desert night lizard	*Xantusia vigilis*	BLM; UT-SS - Tier II
Desert tortoise	*Gopherus agassizii*	FT; BLM; UT-SS - Tier I; NV-P
Long-nosed leopard lizard	*Gambelia wislizenii*	BLM
Midget faded rattlesnake	*Crotalus viridis concolor*	BLM
Utah milk snake	*Lampropeltis triangulum taylori*	BLM
Mojave rattlesnake	*Crotalus scutulatus*	BLM; UT-SS - Tier II
Sidewinder	*Crotalus cerastes*	BLM; UT-SS - Tier II
Smooth greensnake	*Opheodrys vernalis*	BLM; UT-SS - Tier II
Speckled rattlesnake	*Crotalus mitchellii*	BLM; UT-SS - Tier II
Desert glossy snake	*Arizona elegans eburnata*	BLM
Western banded gecko	*Coleonyx variegates*	BLM; UT-SS - Tier II
Western red-tailed skink	*Eumeces gilberti rubricaudatus*	BLM
Western threadsnake (blindsnake)	*Leptotyphlops humilis*	BLM; UT-SS - Tier II
Zebra-tailed lizard	*Callisaurus draconoides*	BLM; UT-SS - Tier II
Mojave shovel-nosed snake	*Chionactis occipitalis occipitallis*	BLM
Terrestrial Invertebrates		
Eureka mountainsnail	*Oreohelix eurekensis*	BLM; UT-SS
Great Basin silverspot (Nokomis fritillary) butterfly	*Speyeria nokomis nokomis*	BLM
Great Basin small blue (Small blue) butterfly	*Philotiella speciosa septentrionalis*	BLM
Grey's silverspot (Grey's fritillary) butterfly	*Speyeria hesperis greyi*	BLM
Honey Lake blue butterfly	*Euphilotes pallescens calneva*	BLM
MacNeill sooty wing skipper (MacNeill saltbush sootywing) butterfly	*Hesperopsis gracielae*	BLM
Mojave gypsum bee	*Andrena balsamorhizae*	BLM
Mojave poppy bee	*Perdita meconis*	BLM
Mono Basin Skipper (Railroad Valley skipper) butterfly	*Hesperia uncas giulianii*	BLM
Northern Mojave blue (Mojave blue) butterfly	*Euphilotes mojave virginensis*	BLM
Rice's blue butterfly	*Euphilotes pallescens ricei*	BLM
White River wood nymph butterfly	*Cercyonis pegala pluvialis*	BLM

[1] Status: FE = Federally Endangered; FT = Federally Threatened; FC = Federal Candidate; FP = Federal Proposed for listing; EXP/NE = Experimental Non-essential population; BLM = BLM Sensitive; USFS = USFS Sensitive; MIS = USFS Management Indicator Species, CO-E = Colorado State Endangered; CO-T = Colorado State Threatened; NV-P = Nevada State-Protected; UT-SS = Utah Sensitive Species (Tier I and Tier II species are defined in Utah's Comprehensive Wildlife Strategy).

[2] Species is included because of the water depletion evaluation requirement in the Platte River Basin.

3.8.4.1 Federally Listed and Candidate Wildlife Species

A total of 11 federally listed wildlife species (one reptile, seven birds, and three mammals) occur within the special status wildlife analysis area, as well as three federal candidate species (greater sage-grouse, western yellow-billed cuckoo, and wolverine). A summary of the listing status, habitat, and general distribution for the federally listed and federal candidate wildlife species is provided below.

Desert Tortoise (Threatened)

The Mojave population of desert tortoise was designated as threatened in 1989 (54 FR 32326). On October 13, 1989, the USFWS published a proposed rule to list the Mojave population as threatened, but because the emergency rule expired on April 2, 1990, it was necessary to publish the final rule on the same day, in order to prevent a lapse in protection for the tortoise (55 FR 12178). In 1993, a Draft

Recovery Plan was issued. Critical habitat was designated in 1994, encompassing 6.4 million acres within six management units across California, Nevada, Utah, and Arizona (59 FR 5820). In 2011, the USFWS issued a Final Revised Recovery Plan which reduced to five the number of recovery units, and changed some boundaries of the 1994 recovery units (USFWS 2011a).

The desert tortoise inhabits the Mojave and Sonoran deserts of the United States and Mexico. Tortoises of the Mojave population are found primarily in desert shrubland. Typical habitat for the desert tortoise in the Mojave Desert has been characterized as creosote bush scrub below 5,500 feet amsl; where annual precipitation ranges from 2 to 8 inches; the diversity of perennial plants is relatively high; and production of ephemerals is high. In the Mojave Desert, tortoises occur most commonly on gently sloping terrain with sandy-gravel soils and where there is sparse cover of low-growing shrubs, which allows establishment of herbaceous plants. Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse (USFWS 2011a).

Adequate burrowing substrate and plants that can provide thermal cover are crucial habitat components for the desert tortoise. In the Mojave region, desert tortoises will construct their own burrows to avoid extreme hot or cold temperatures. Mojave desert tortoises often excavate burrows under vegetation, extending up to 33 feet. In addition to burrows, desert tortoises also construct shallow depressions (pallets) under low shrubs to serve as temporary resting sites.

The USGS has developed a habitat model that ranks desert tortoise potential habitat on a scale from 0 to 1, with 1 being greatest. The desert tortoise analysis area includes areas of high quality habitat that the USGS habitat model values 0.7 to 1.0. The entire desert tortoise analysis area is located within the northeastern Mojave Desert Recovery Unit (USFWS 2008a). Critical habitat units within this recovery unit, and within the desert tortoise analysis area are: 1) Gold Butte-Pakoon Unit, Clark County, Nevada; 2) Beaver Dam Slope Unit, Lincoln, County, Nevada; 3) Beaver Dam Slope Unit, Washington County, Utah; and 4) Mormon Mesa Unit, Clark and Lincoln counties, Nevada (59 FR 5820).

California Condor (Endangered; EXP/NE)

The California condor was designated as endangered on March 11, 1967 (FR 32: 4001). Despite protection, populations continued to decline, and by 1982 only 22 wild condors remained (AZGFD 2008; Peregrine Fund 2008). A decision was made to rely on captive breeding programs for recovery of the species, and the last wild condor was brought into captivity in 1987. In 1992, releases to the wild began in central and southern California, followed by releases in the Vermilion Cliffs area of Arizona in 1996 and in Baja California in 2002.

A special provision of the ESA, the 10(j) rule, allows for the designation of non-essential populations (NEP) of listed species (AZGFD 2008), and re-introduction efforts for the condor were developed under this rule. This listing covers only those populations within the U.S. and excludes the NEPs in specific portions of Arizona, Nevada, and Utah (61 Fed. Reg. 54043-54060). Current re-introduced condor populations are considered 10(j) populations, except where they occur within National Parks where, as noted below, they receive protection under the ESA endangered status.

In Utah, the condor population is considered an NEP south of Interstate 70 and east of Interstate15, except within National Parks. Any condors occurring outside of the experimental population area, including those on National Park lands, are protected under the ESA. In March 2009, a 5-Year Review of the status of the California condor was initiated. Critical habitat is not present within the California condor analysis area. The current recovery plan for the species was issued in April 1996 (Third Revision).

California condors occupy remote rugged areas at low to moderate elevation that support large mammals, which they consume as carrion. These birds require cliff sites or caves for nesting and cliffs, tall conifers, or snags for roosting (Snyder and Rea 1998). Because they are such large birds, they typically select roosting sites near cliffs where updrafts provide adequate lift for them to take flight (AOU 2004;

AZGFD 2008, 2004; Snyder and Rea 1998; USFWS 1996). The California condor analysis area is the HUC 10 watersheds crossed by the Project in Region III.

As of March, 2011, there were 97 wild condors in California, 74 in Arizona, and 20 in Baja California, for a total of 191 wild condors (AZGFD 2008). The current range of the condor population in Arizona is centered on the Colorado River Basin in northern Arizona and southern Utah. This population occurs outside the California condor analysis area, however; condors regularly forage, roost, and may nest in southern Utah. Condors commonly occur in Utah between April and November, but peak numbers usually occur from June through August. Condors can travel up to 200 miles in a day (UDNR 2011). Therefore, they could occur within the California condor analysis area (Gorell et al. 2005).

Greater Sage-grouse (Candidate)

Sagebrush steppe habitats across the western U.S. have been substantially altered, fragmented, and lost due to the introduction of invasive plant species, changes in fire regimes, and direct removal resulting from changes in land use (Knick et al. 2003; Knick and Connelly 2011). On February 26, 2008, the USFWS initiated a status review to determine whether the greater sage-grouse warranted protection under the ESA (73 FR 10218). On March 5, 2010, the USFWS determined that the greater sage-grouse warrants protection under the ESA; however, listing was precluded by the need to take action on other species facing more immediate and severe extinction threats. The USFWS concluded that the greater sage-grouse would be added to the candidate species list. Therefore, greater sage-grouse in Wyoming, Colorado, and Utah continue to be managed by the WGFD, CPW, and UDWR, respectively. Greater sage-grouse populations in Nevada are managed by NDOW and do not occur in areas potentially impacted the project. Currently, federally listed candidate species receive no statutory protection under ESA. Conservation efforts for this species in Wyoming, Colorado, and Utah are currently coordinated by the WGFD, CPW, and UDWR in cooperation with the USFWS, BLM, USFS, and greater sage-grouse working groups in an attempt to increase population levels and avoid federal listing under the ESA.

In an effort to prevent federal listing of the greater sage-grouse, Wyoming, Utah, Colorado, and Nevada have developed Greater Sage-grouse Management/Conservation Plans that outline goals and objectives for managing the species (CGSSC 2008; South Central Sage-grouse Working Group 2007; Southwest Wyoming Local Sage-grouse Working Group 2007; State of Nevada 2012; UDWR 2009). In addition, the Wyoming BLM and the State of Wyoming have issued several regulations regarding management of the greater sage-grouse in Wyoming. BLM Instruction Memoranda (IM) 2010-012, 2012-043, 2012-044, 2012-019, and State of Wyoming Executive Order 2011-5 include specific protection measures guiding development in greater sage-grouse habitat, specifically in core population areas. The WGFD has developed a map of greater sage-grouse core population areas in Wyoming. Greater sage-grouse core population areas include areas with the highest densities of breeding greater sage-grouse in the state, as well as areas important for connectivity between populations. The core population areas include roughly 25 percent of the state but contain 83.1 percent of the greater sage-grouse population in Wyoming.

BLM IM 2012-043 and BLM IM 2012-019 provide direction to field managers to ensure that interim conservation procedures are implemented when field offices authorize or carry out activities on public land while the BLM reviews how to best incorporate long-term conservation measures for greater sage-grouse into applicable Land Use Plans (LUPs). These interim conservation measures are consistent with the BLM's National Strategy for protecting and managing greater sage-grouse and incorporate the following principles:

1. Protection of un-fragmented habitats;
2. Minimization of habitat loss and fragmentation; and
3. Management of habitats to maintain, enhance, or restore conditions that meet greater sage-grouse life history needs.

BLM IM 2012-043 identifies policies and procedures that are to be applied to on-going and proposed BLM activities within areas identified as PPH and PGH. PPH consists of areas that have been identified as having the highest conservation value for maintaining sustainable greater sage-grouse populations. These areas include breeding, nesting, brood-rearing, and wintering habitats. PGH is identified as all other areas occupied either seasonally or year-round by greater sage-grouse. Among the conservation policies and procedures presented in BLM IM 2010-043, those that apply to the Project direct the BLM to:

1. Provide documentation of reasoning for ROW determinations and to require the ROW holder to implement measures to minimize impacts to greater sage-grouse habitat;
2. In cooperation with respective state wildlife agencies, consider the opportunities for both on-site and off-site mitigation measures to avoid or minimize habitat and population level impacts; and
3. In cooperation with respective state wildlife agencies, determine that the proposed ROW would cumulatively maintain or enhance greater sage-grouse habitat.

BLM IM 2012-044 provides the BLM direction to incorporate conservation measures identified in the 2011 report on national greater sage-grouse conservation measures published by the Sage-grouse National Technical Team (NTT 2011). NTT conservation measures relating to ROWs include:

1. Designating priority greater sage-grouse habitat areas as exclusion areas for new ROW permits;
2. Evaluating the feasibility of removing, burying, or modifying existing power lines within priority greater sage-grouse habitat; and
3. Designating greater sage-grouse general habitat areas as avoidance areas for new ROW permits.

Lekking/Breeding/Nesting Habitat

The center of breeding activity for the greater sage-grouse is referred to as a strutting ground or lek. Leks are characterized as flat, sparsely vegetated areas within large tracts of sagebrush (Connelly et al. 2004). Males begin to appear on leks in March, with peak attendance of Utah leks occurring in late-March and peak attendance in Colorado and Wyoming leks occurring in April (CGSSC 2008; UDWR 2009; WGFD 2003). Nesting generally commences 1 to 2 weeks after mating and may continue as late as early June (UDWR 2009). Greater sage-grouse nesting habitat typically is centered around active leks and consists of medium to tall sagebrush with a perennial grass understory (Connelly et al. 2000). Studies have shown that taller sagebrush with larger canopies and more residual understory cover usually lead to higher nesting success for this species (Connelly et al. 2004, 2000).

Brood-Rearing Habitat

During late spring and summer, hens and broods typically are found in more lush habitats consisting of a high diversity of grasses and forbs that attract insects. These habitats include wet meadows, riparian areas, and irrigated farmland within or near sagebrush. Hens with broods utilize these habitats until forbs desiccate and insect abundance decreases. Unsuccessful hens and cocks also will utilize these same habitats; however, due to their nutritional flexibility, they are able to occupy a wider variety of habitats during the spring and summer months (Connelly et al. 2004). In many greater sage-grouse populations, limited availability of high quality brood-rearing habitat often negatively impacts recruitment. Factors affecting the availability of brood-rearing habitat include drought, non-native grass and weed invasions, overgrazing associated with historic improper range management strategies (Oakleaf 1971; Klenbow 1985, 1982), and sagebrush removal.

Wintering Habitat

Depending on the severity of the winter, greater sage-grouse move to south- and west-facing slopes that maintain exposed sagebrush. Studies have shown that south-facing slopes with sagebrush at least 10 to

12 inches above the snow level are required for both food and cover. Windswept ridges, draws, and swales also may be used, especially if these areas are in close proximity to exposed sagebrush (Connelly et al. 2004). In years with severe winter conditions (i.e., deep snow), greater sage-grouse often gather in large flocks in areas with the highest quality winter habitat. It is suggested that high quality winter habitat is limited in portions of the greater sage-grouse's range (Connelly et al. 2000). Wintering habitat for greater sage-grouse has been defined for populations in Colorado and Utah, and is currently being defined for populations in Wyoming (WGFD 2012).

Overall Species Range

In Wyoming, the greater sage-grouse occurs throughout the state in appropriate habitat (Cervoski 2004). Colorado is on the southeastern edge of the known distribution for this species. Within the greater sage-grouse analysis area in Colorado, the species is likely to be found in Moffat and Rio Blanco counties (CGSSC 2008). Scattered populations of greater sage-grouse occur throughout Utah, excluding the Colorado Plateau region in the southeastern portion of the state. The largest populations within the Utah portion of the greater sage-grouse analysis area are in Uintah County, but smaller populations occur throughout central and southern portions of the state (UDWR 2009). The species also occurs outside of the greater sage-grouse analysis area in central Nevada, southern Idaho, southeastern Oregon, central Washington, eastern Montana, western North Dakota, western South Dakota, and northeastern California. The greater sage-grouse analysis area includes core areas within HUC 10 watersheds crossed by the Project in Wyoming, PPH and PGH within HUC 10 watersheds crossed by the Project in Colorado, and occupied (includes brood-rearing and wintering) habitat Utah. In Nevada, Alternative III-C crosses the southern boundary of the Lincoln Sage Grouse PMU but does not cross any occupied greater sage-grouse habitat.

Whooping Crane (Endangered)

The whooping crane was listed as endangered on March 11, 1967 (32 FR 4001). In May 2007, the third revision of the Whooping Crane Recovery Plan was issued (72 FR 29544). Critical habitat for the whooping crane is not present in the special status wildlife analysis area (USFWS 2011b). As of August 2011, the total population of whooping cranes in the wild was estimated at 437.

Whooping cranes nest in, and adjacent to, the Aransas-Wood Buffalo National Park (AWBP) in Canada, and winter in coastal marshes in Texas at the Aransas National Wildlife Refuge (USFWS 2011b). During spring and fall migration, the AWBP whooping crane population migrates through the central Great Plains. Birds from the AWBP population depart from their wintering grounds in Texas starting in late March through the beginning of May. Fall migration typically begins in mid-September, with most birds arriving on wintering grounds between late October and mid-November (CWS and USFWS 2005).

Whooping cranes utilize a variety of habitats during migration, including freshwater marshes, wet prairies, shallow portions of rivers, reservoirs, lakes, and lagoons; and forage in grain and stubble fields. Whooping cranes roost on submerged or barren sandbars.

The occurrence of this species within the special status wildlife analysis area would be limited to accidental migrants from the Aransas-Wood Buffalo population, and is highly unlikely. No new depletions will occur by the proposed Project in the Platte River system in Wyoming. No impacts are expected to the whooping crane and no whooping crane analysis area has been defined for the Project.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail was designated as endangered on March 11, 1967 (32 FR 4001).This listing protects only the populations in California and Arizona; Mexican populations are not protected. No critical habitat has been designated for this subspecies. The Yuma Clapper Rail Recovery Plan was issued in 1983. A draft Revised Recovery Plan was issued on February 10, 2010.

The Yuma clapper rail is a subspecies of clapper rail. This subspecies breeds and forages in freshwater marshes with dense vegetation exceeding 16 inches in height, and water depth of 12 inches or less. Important habitat components include pond openings, flowing channels, and emergent soils. Yuma clapper rails that remain near their breeding grounds through the winter occupy tall, dense bulrush/cattail stands. They also utilize flooded salt cedar and willow stands (Rosenberg et al. 1991). Yuma clapper rails were originally thought to migrate to Mexico because they were not detected on their breeding grounds in the U.S. during the winter months (Todd 1986). It is possible that Yuma clapper rails were not detected during the winter because wintering populations are almost completely silent (Rosenberg et al. 1991).

The Yuma clapper rail was formerly restricted to an area near Yuma, Arizona, but has since expanded its range. Over 70 percent of the breeding population of this subspecies winters along the lower Colorado River (Rosenberg et al. 1991). The species potentially occurs only in the far southern limit of the Yuma clapper rail analysis area in southern Nevada along the Muddy River. The Yuma clapper rail analysis area is defined as herbaceous wetland areas along the Muddy River in Nevada within 0.5 mile of the 2-mile transmission line corridor.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The gray wolf (northern Rocky Mountain population) was designated as endangered on January 4, 1974 (39 FR 1175-1176) and a Recovery Plan was released on August 3, 1987. Currently, the species is listed as endangered in Utah and Colorado. The USFWS designated the gray wolf as an NEP in Wyoming. This status is defined as a reintroduced population believed not to be essential for the survival of the species, but important for its full recovery and eventual removal from the endangered and threatened list. These NEP populations are treated as threatened species, except that the Endangered Species Act (ESA) Section 7 regulations, which require consultation to reduce adverse impacts from federal actions do not apply (except when the species occurs within national parks or NWRs) and critical habitat cannot be designated.

The established northern Rocky Mountain population recovery goal of 30 breeding pairs of wolves well distributed throughout Idaho, Montana, and Wyoming for three consecutive years was achieved in December 2002. By 2007, the gray wolf population exceeded 1,500 individuals and the USFWS proposed delisting. The gray wolf population in the northern Rocky Mountains of Montana, Idaho, and Wyoming continued to increase its distribution and estimated wolf numbers have exceeded 1,600 individuals in recent years within the three-state area (USFWS et al. 2009). On March 28, 2008, the USFWS designated and removed the northern Rocky Mountain gray wolf from listing under the ESA (73 Federal Register 10514-10560). However, in July 2008, a federal judge issued an injunction to suspend this removal. A number of environmental groups have challenged the USFWS delisting decision. On March 6, 2009, Secretary Salazar confirmed the USFWS decision to delist the wolf in all states except Wyoming. In March 2011, the northeastern corner of Utah — east of Interstate 15 and north of I-80 and I-84 — was designated as a recovery area for gray wolves. Elsewhere in Utah, most notably the Uinta Mountains and the Book Cliff region of eastern Utah, the species remains protected. Colorado has no established gray wolf population, but has developed guidelines in anticipation of a time when strays from the northern Rocky Mountain population may become established in the state (Wolf Management Working Group 2004).

Gray wolves are considered habitat generalists and have few specific habitat requirements for survival. These requirements are primarily related to the density of prey species found within a given area. Wolf populations have been expanding since the northern Rocky Mountain reintroduction effort, which began in 1995 and 1996. Since the gray wolf utilizes a wide variety of habitats, the species could potentially be present along any portion of the project route regardless of habitat type, with the exception of intensively managed agricultural areas. The gray wolf analysis area includes the HUC 10 watersheds traversed by the Project in Regions I and II.

Interior Least Tern (Endangered)

The interior least tern was designated as endangered on May 28, 1985 (50 FR 21784). No critical habitat has been designated for this subspecies, but essential breeding habitat has been identified within its historic range (USFWS 2011c). The Interior Least Tern Recovery Plan was issued in September 1990.

Historically, the breeding range of this subspecies extended from Texas to Montana and from eastern Colorado and New Mexico to southern Indiana. It included the Rio Grande, Red, Missouri, Arkansas, Mississippi, and Ohio river systems. The interior least tern continues to breed in most of the historic river systems, although its distribution generally is restricted to less altered river segments (USFWS 1990). The interior least tern breeds and forages on barren or sparsely vegetated sandbars adjacent to waterbodies. This subspecies nests in colonies on sandy or pebbly, sparsely vegetated islands or shorelines. Interior least terns spend 4 to 5 months at their breeding sites. Nest locations are usually well above the water's edge, since nesting is typically initiated during high river flows, when only small amounts of sandy shoreline are exposed. Therefore, the size of nesting habitat depends on water levels and the extent of associated sandbars. The interior least tern also will nest on artificial habitats, including sand and gravel pits and dredge islands (USFWS 1990).

It is unlikely that nesting interior least terns would be present within the special status wildlife analysis area. No new depletions will occur by the proposed Project in the Platte River system in Wyoming. No impacts are expected to the interior least tern and no interior least tern analysis area has been defined for the Project.

Piping Plover (Threatened)

The piping plover was designated as endangered/threatened on December 11, 1985 (50 FR 50726). The Great Lakes piping plover population was listed as threatened, while the remaining Atlantic and northern Great Plains populations were listed as threatened. Migrating and wintering populations of piping plover also were classified as threatened. Designated critical habitat for the piping plover does not exist within the special status wildlife analysis area. A recovery plan for the Great Lakes and Northern Great Plains Piping Plover populations was issued on May 12, 1988. The 5-Year Review for this population was issued in September 2009.

The piping plover breeds and forages on sandy lakeshore beaches, sandbars within riverbeds, or sandy wet pastures. Nesting habitat for the piping plover consists of sparsely vegetated shorelines around small alkali lakes, large reservoir beaches; river islands and adjacent sandpits; and shorelines associated with industrial ponds. It constructs a scrape nest in sand or gravel (Haig and Plissner 1993). Nesting piping plovers have been found in least tern nesting colonies at a number of sites on Great Plains river sandbars and sand pits (USFWS 1988).

It is unlikely that nesting piping plovers would be present within the special status wildlife analysis area. No new depletions will occur by the proposed Project in the Platte River system in Wyoming. No impacts are expected to the piping plover and no piping plover analysis area has been defined for the Project.

Western Yellow-billed Cuckoo (Candidate)

The Western U.S. Distinct Population Segment (DPS) of the yellow-billed cuckoo became a candidate species for listing as threatened or endangered on October 30, 2001 (66 FR 54807-54832). Currently, federally listed candidate species receive no statutory protection under ESA.

Western populations of yellow-billed cuckoos breed in dense riparian woodlands along riparian corridors in otherwise arid areas (Hughes 1999). Dense undergrowth may be an important factor in selection of nest sites (Ehrlich et al. 1988). Western yellow-billed cuckoos appear to require relatively large tracts of riparian woodland. Several studies have reported the species to only nest in tracts greater than 25 acres in size.

The range of the western population of yellow-billed cuckoo has been determined as the portion of yellow-billed cuckoo range west of the crest of the Rocky Mountains (USFWS 2001). Currently the western yellow-billed cuckoo is very rare in scattered drainages in western Colorado, Idaho, Nevada, and Utah (NatureServe 2008). The species has been documented within the special status wildlife analysis area in Utah County, Utah. It also has been documented within 5 miles of the special status wildlife analysis area in Emery, Grand, Uintah, and Washington counties, Utah (UNHP 2010). The species has been documented in Meadow Valley Wash in Lincoln County, Nevada (NNHP 2010). It also is a confirmed breeder along the Muddy River in Nevada (Floyd et al. 2007). The western yellow-billed cuckoo analysis area is defined as areas within 0.5 mile of perennial waterbodies with developed riparian woodlands within the HUC 10 watersheds crossed by the Project.

Mexican Spotted Owl (Threatened)

The Mexican spotted owl was designated as threatened on March 16, 1993 (58 FR 14248-14271), and a Recovery Plan was released on June 6, 1995 (60 FR 29913-29951). Critical habitat was originally designated on March 16, 1993 (58 FR 14248-14271), and subsequently revoked on March 25, 1998 (63 FR 14378-14379). Critical habitat was re-established on February 1, 2001 (66 FR 8530-8553), and a comment period was re-opened on November 18, 2003 (68 FR 65020-65023). The currently defined critical habitat was established on August 31, 2004 (69 FR 53181-53298).

The Mexican spotted owl is one of three recognized subspecies of spotted owl in North America. The Mexican spotted owl is a permanent resident in the interior mountain ranges of western North America, ranging from southern Utah and central Colorado south through the mountains of Arizona, New Mexico, and extreme west Texas. The species typically occupies old growth forest in mixed conifer, pine-oak woodland, deciduous riparian, or a combination of these habitats that will support a home range of 1,400 to 4,500 acres (Ehrlich et al. 1988; Gutierrez et al. 1995). An undisturbed core area of approximately 600 acres centered on the nest site is the currently recommended disturbance buffer (Gutierrez et al. 1995).

Mexican spotted owls typically inhabit steep canyons with mature or old growth forest, but they also may occur in canyons with steep cliffs and relatively little forest habitat. Mexican spotted owl habitat typically has a structured canopy, a perennial water source, and a rodent-dominated prey base of adequate size (Gutierrez et al. 1995). Mexican spotted owls have been reported at elevations ranging from 3,700 feet amsl to the subalpine transition zone (Ganey 1998; Gutierrez et al. 1995; Johnsgard 1988).

Mexican spotted owls exhibit high nest fidelity and construct nests in rock crevices, tree cavities (usually in live trees) or on constructed platforms on tree limbs. In Utah, they nest almost exclusively in shallow caves (Gorell et al. 2005). Mexican spotted owls also will utilize abandoned raptor or corvid platform nests (Ehrlich et al. 1988; Terres 1980).

There are several areas where the subspecies could occur within the Mexican spotted owl analysis area in Utah including; the Desolation Canyon area of the Green River on the boundary between Carbon and Uintah Counties; and the Kolob Terrace area (including Zion National Park) near Cedar City (Gorell et al. 2005; UCDC 2008). The Mexican spotted owl analysis area is defined as the modeled habitat in the BLM Vernal Field Office. Although modeled habitat for other BLM field offices was not available for inclusion in this analysis, occurrences of this species in the Zion National Park area have been recorded. Therefore, this species and its habitat could potentially be impacted by project alternatives in southwestern Utah.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher was designated as endangered, without designated critical habitat, on February 27, 1995 (60 FR 10693-10715). Critical habitat was later designated on July 22, 1997 (62 FR 39129-39147), and the Final Recovery Plan for the subspecies was issued on March 5, 2003 (68 FR 10485). A court decision in 2001 resulted in a subsequent Final Rule on Critical Habitat on

October 19, 2005 (70 FR 60885-61009). A 5-year review of the subspecies was completed by the USFWS in 2005 (73 FR 14995-14997).

Four specific types of breeding habitat have been described for the southwestern willow flycatcher. The first is comprised of dense stands of willows 10 to 23 feet in height, with no distinct overstory. This community is often associated with sedges, rushes, or other herbaceous wetland plants. A second habitat type includes dense stands of salt cedar or Russian olive up to 33 feet in height. These species form a dense, closed canopy, with no distinct understory layer. Native broadleaf-dominated communities form a third habitat type. The final habitat type is a mixture of native and exotic riparian species (Sogge et al. 1997).

Regardless of the vegetation species composition, all of these habitats share common structural characteristics. Occupied southwestern willow flycatcher habitats always have dense vegetation in the interior, and dense areas are often interspersed with small clearings, open water, or areas of sparse shrubs. Habitat patches can vary in size and shape, with some occupied areas being relatively dense, linear, contiguous stands, and others being large, irregularly shaped mosaics of dense vegetation intermingled with open areas. Habitat patch sizes can range from as little as 2 acres to several hundred or a thousand acres. Southwestern willow flycatchers may occur at elevations as high as 7,875 feet amsl. They also inhabit willow or cottonwood riparian areas that extend out into desert regions (Terres 1980). Migration and winter habitat could differ from breeding habitat for this subspecies. During migration, riparian habitat along major southwestern drainages is commonly utilized, but a close association with water may not always exist. These drainages might be considered stopover areas, and could be very important migration habitat for the southwestern willow flycatcher (USFWS 2002).

The southwestern willow flycatcher has been documented within 5 miles of the 2-mile transmission line corridor in Washington County, Utah (UNHP 2010). It also has been documented in Iron County, Utah, near Newcastle Reservoir and Pinto Creek. Suitable habitat occurs in Emery, Grand, Iron, and Uintah counties, Utah, and in Clark and Lincoln counties, Nevada. Designated critical habitat exists in Clark County, Nevada and in Washington County, Utah. Additional critical habitat is proposed in Clark and Lincoln counties, Nevada, and Washington County, Utah (USFWS 2011d). In the Nevada portion of the southwestern willow flycatcher analysis area, essential habitat for the southwestern willow flycatcher is identified on the Pahranagat and Muddy rivers, and a portion of the Virgin River. Designated critical habitat consists of the Virgin River contiguous with the essential habitat section, upstream to the Arizona border. The entire segment of the mainstem Virgin River in Arizona is within designated critical habitat, and an approximately 18 mile-long segment of the river further upstream into Utah also is a part of this unit. The total length of critical habitat on the Virgin River is 73 miles (USFWS 2005a). Other potential suitable habitat for the southwestern willow flycatcher in Nevada includes portions of the Meadow Valley Wash, the Muddy River, Las Vegas Wash, and the Colorado River System (Hiatt and Boone 2003). The southwestern willow flycatcher analysis area is defined as the following Management Units within the Lower Colorado Recovery Unit: Pahranagat, Virgin, western portion of the Middle Colorado, Hooter-Parker, and southern portion of the Amargosa. Also included in the southwestern willow flycatcher analysis area is the area within 0.5 mile of the riparian corridor at Newcastle Reservoir and Pinto Creek, which is crossed by the Project.

Black-footed Ferret (Endangered; EXP/NE)

The black-footed ferret was designated as endangered in 1966. The species was subsequently listed as threatened with extinction under the Endangered Species Preservation Act on March 11, 1967 (32 FR 4001) and as endangered under the Endangered Species Act on June 2, 1970 (35 FR 8491). No critical habitat has been designated for the species. Eight reintroduced black-footed ferret populations have been designated as NEP under Section 10(j) of the ESA. The USFWS initiated a 5-year species status review for the black-footed ferret on July 7, 2005 (70 FR 39326). In the 2008 status review summary, the USFWS recommended no change in status and a Recovery Priority Number of 2C (USFWS 2008b). The current Black-footed Ferret Recovery Plan was approved in 1988 (USFWS 1988). This plan replaced the 1978

recovery plan, which was drafted when no extant, wild black-footed ferrets were known to exist (USFWS 1988).

The black-footed ferret is considered to be a prairie dog obligate species. The black-footed ferret is entirely dependent upon prairie dogs colonies, utilizing the burrows for shelter and den sites, and preying almost exclusively on prairie dogs (Biggins et al. 2006).

No wild black-footed ferret populations are known to occur within the black-footed ferret analysis area in Wyoming. Although the Shirley Basin supports the only known extant population of wild black-footed ferrets in Wyoming, there are numerous white-tailed prairie dog complexes within the black-footed ferret analysis area for both the Rawlins and Rock Springs BLM Field Offices that constitute suitable habitat for the black-footed ferret. Many of these complexes have not been surveyed for black-footed ferrets. The State of Wyoming is now entirely block-cleared for the black-footed ferret (USFWS 2013).

Besides the Shirley Basin reintroduction site in south-central Wyoming, there is only one other reintroduction site within the black-footed ferret analysis area: the Northwestern Colorado/Northeastern Utah Black-footed Ferret Experimental Population Area (ExPA). The ExPA encompasses portions of Rio Blanco and Moffat counties in Colorado, Sweetwater County, Wyoming, and Uintah and Duchesne counties, Utah. The ExPA has been separated into the Northwestern Colorado Experimental Population Sub-Area and the Northeastern Utah Experimental Population Sub-Area. Within the Northwestern Colorado Sub-Area, the Little Snake Black-footed Ferret Management Area was established as a specific reintroduction site. The Little Snake area is located in northwestern Moffat County, Colorado along the Colorado-Wyoming border. Within the Northeastern Utah Sub-Area, the Coyote Basin Black-footed Ferret Management Area was established as a specific reintroduction site. The Coyote Basin area is located in Uintah County, Utah along the Utah-Colorado state border.

A total of 255 black-footed ferrets have been released into the Coyote Basin Area since 1999. Reproduction was confirmed in Coyote Basin in 2000, and the population is currently estimated at 25 individuals (USFWS 2008b). Ferret releases at the Wolf Creek site northeast of Rangely, Colorado, were initiated in 2001, and to date a total of 189 individuals have been released at this location. The Wolf Creek population is currently estimated at 16 individuals (USFWS 2008b); although plague has impacted the Wolf Creek population of white-tailed prairie dogs and black-footed ferrets in recent years and no black-footed ferrets have been documented during surveys in 2009, 2010, and 2011. The USFWS classifies both populations as “marginal” (USFWS 2008b). The only non-NEP areas found within the black-footed ferret analysis area are located in Grand, Emery, or Carbon counties, Utah, and portions of Sweetwater and Carbon counties, Wyoming. The black-footed ferret analysis area includes the ExPA in Utah and Colorado, and the Continental Divide (2), Dad, and Desolation Flats non-block cleared areas in Wyoming.

Canada Lynx (Threatened)

The contiguous U.S. Distinct Population Segment (DPS) of the Canada lynx was designated as threatened on March 24, 2000 (65 FR 16051). This DPS includes lynx inhabiting forested portions of multiple states, including Colorado and Utah. In response to a 2002 court order, the USFWS reconfirmed the species’ status as threatened (68 FR 40076). A final rule on critical habitat for the Canada lynx was issued in February 2009. Designated critical habitat does not exist within the Canada lynx analysis area. A 5-year species status review was initiated in 2007 (72 FR 19549). Although a formal recovery plan has not been published for the Canada lynx, an interim Recovery Outline was issued in 2005 to guide recovery efforts and critical habitat designation for the DPS until a draft recovery plan is completed (USFWS 2005b). The Recovery Outline identifies preliminary Canada Lynx Recovery Areas throughout the contiguous United States. These areas are categorized as Core Areas, Provisional Core Areas, Secondary Areas, and Peripheral Areas based upon habitat quality and evidence of current Canada lynx occurrence.

At the time of listing, the USFWS identified the main threat to the DPS as the inadequacy of existing regulatory mechanisms to protect the Canada lynx and its habitat; particularly the lack of protection conferred by USFS Land and Resource Management Plans (65 FR 16051). To address this inadequacy, the USFS, BLM, and USFWS developed the Lynx Conservation Assessment Strategy (LCAS) to provide a consistent and effective approach to conserve Canada lynx on federal lands across the contiguous U.S. (Ruediger et al. 2000). The LCAS included the identification of Lynx Analysis Units (LAUs). LAUs are based upon 5th and 6th level Hydrologic Unit Codes (HUC), and a HUC becomes a LAU when at least 30 percent of the HUC is suitable Canada lynx habitat. LAUs have been identified in suitable lynx habitat throughout lands managed by the USFS and BLM.

The Canada lynx inhabits the boreal forests of North America. Lynx are secretive, nocturnal, and solitary. Home range sizes vary widely, depending on prey availability and regional habitat characteristics (Meaney and Beauvais 2004). Canada lynx require a complex mosaic within their home range to meet different habitat needs. Specifically, lynx utilize early successional habitats for foraging and mature forests with large woody debris for denning (Ruediger et al. 2000). While Canada lynx populations in northern boreal habitats are known to oscillate in direct response to natural snowshoe hare population cycles, southern populations rely more heavily on alternate prey species and do not exhibit the dramatic cycles experienced by northern populations.

The species has been documented within 5 miles of the 2-mile transmission line corridor in Uintah County, Utah, and Carbon County, Wyoming (UNHP 2010; WNHP 2010). Additionally, a reproducing population has been established in south-central Colorado as a result of a reintroduction program initiated in 1999 by the CPW and individuals from this population have been documented in northern Colorado and Utah. The Canada lynx analysis area is defined as forested habitat within the special status wildlife analysis area in Regions I and II.

Utah Prairie Dog (Threatened)

The Utah prairie dog was designated as endangered in 1968, but was subsequently delisted in1970. It was again designated as endangered on June 4, 1973, due to a substantial decline in population from 1970 to 1972 (Pizzimenti and Collier 1975). In 1979 the UDWR petitioned the USFWS to remove the Utah prairie dog from the endangered species list. The USFWS published a Final Rule on May 29, 1984 (49 FR 22330), to reclassify the Utah prairie dog as threatened, with a special rule to allow regulated take. In 2003, the USFWS received a petition to reclassify the species as endangered. In February 2004, the USFWS received a Notice of Intent to Sue for failure to issue a 90-day finding for the petition. Eventually the petitioning party and the USFWS reached a settlement agreement to make a 90-day finding on the petition by February 17, 2007. Published in the Federal Register on February 21, 2007, the USFWS issued a notice of the 90-day petition finding that the petition failed to provide substantial scientific or commercial information to warrant the reclassification of the species to endangered status (72 FR 7843). With this determination, the USFWS also initiated a 5-year review of the species to determine whether the status of the Utah prairie dog should be changed. The Final Recovery Plan for the Utah Prairie Dog was issued on September 9, 1991 (USFWS 1991).

The Utah prairie dog is a colonial species. It inhabits grassland and shrublands in central Utah, and is found at elevations ranging from approximately 4,900 to 9,800 feet amsl (Hoogland 2006). Because most of their water requirement is met through plant ingestion, there is a positive correlation between the amount of available moisture in vegetation and Utah prairie dog population densities. The species prefers swale formations where moist vegetation is available even during times of drought (USFWS 1991). Utah prairie dogs require well-drained soils for their burrows in order to be able to burrow deeply enough to be protected from predators and environmental temperature extremes (USFWS 1991). Colony population densities vary considerably (6.25 per acre to more than 185 per acre). Habitat condition is the most likely influence on population density (Pizzimenti and Collier 1975). Vegetation within a colony must be low enough to allow a standing Utah prairie dog to scan the environment for predators. Utah prairie dogs are true hibernators, and most surface activity ceases during harsh winters (72 FR 7843).

The Utah prairie dog has the most restricted range of all prairie dog species in the U.S. and is limited to the southwestern quarter of Utah (USFWS 1991). As of 2010, Utah prairie dog populations existed in only three areas: the Awapa Plateau; the Paunsaugunt region along the east fork and main stem of the Sevier River; and the West Desert region of eastern Iron County (USFWS 2010). Several isolated colonies exist in the mountain and desert valleys in western Iron and Beaver counties (Pizzimenti and Collier 1975; USFWS 1991).

Distribution records for the Utah prairie dog since 1983 show occurrences in Beaver, Garfield, Iron, Millard, Piute, Sanpete, Sevier, and Washington counties (Bosworth 2003). The species has been documented within the Utah prairie dog analysis area in Iron, Millard, and Sevier counties, Utah (UNHP 2010). The greatest concentrations of Utah prairie dogs occur in eastern Iron and southern Sevier counties. The Utah prairie dog analysis area is defined as the West Desert Recovery Unit, Paunsaugunt Recovery Unit, and the Awapa Plateau Recovery Unit.

3.8.4.2 BLM Sensitive, USFS Sensitive, USFS MIS, and State-Protected Wildlife Species

In addition to federally listed and candidate species, a total of 106 BLM, USFS, or state-protected species potentially occur within the special status wildlife analysis area (**Table 3.8-6**). This list includes 12 terrestrial invertebrate species, 18 reptile species, 42 bird species, and 34 mammal species. Descriptions of occurrence and habitat utilized by these species are provided in **Appendix G**, **Table G-2**.

3.8.5 Regional Summary

Special status wildlife species by Project region are summarized in **Table 3.8-7**.

Table 3.8-7 Summary of Special Status Wildlife Species by Terminal and Project Region

Species	Total Species Within the Special Status Wildlife Analysis Area (All Regions)[2]	Northern Terminal	Proposed Alternative Southern Terminal	Alternate Southern Terminal	Southern Terminals near IPP (DO2 and DO3)	Region I	Region II	Region III	Region IV
Mammals – Bats	20	12	20	20	18	13	16	19	20
Mammals – Other	18	7	4	4	4	13	13	7	4
Birds[1]	51	23	12	12	20	38	36	34	23
Reptiles	19	4	13	13	10	4	5	14	15
Terrestrial Invertebrates	12	0	5	5	8	1	2	10	7
Total	120	46	54	54	60	69	72	84	69

[1] Includes whooping crane, interior least tern, and piping plover.

[2] Total number of species is not equal to a sum of regions and other project components due to the fact that most species are present in multiple regions.

3.8.5.1 Northern Terminal

Vegetative communities located within the Northern Terminal siting area include: cliff and canyon, grassland, greasewood flat, herbaceous wetland, sagebrush shrubland, saltbush shrubland, and woody riparian and wetlands. Direct impacts resulting from the construction of the terminal and associated facilities could occur within grassland, greasewood flat, sagebrush shrubland, and saltbush shrubland vegetative communities only. A description of these communities is presented in Section 3.5, Vegetation.

Table 3.8-8 presents special status wildlife species potentially occurring at the Northern Terminal.

Table 3.8-8 Special Status Wildlife Species Potentially Occurring at the Northern Terminal

Mammals - Bats		
Big brown bat	California myotis	Hoary bat
Long-eared myotis	Long-legged myotis	Pallid bat
Silver-haired bat	Spotted bat	Townsend's (Western) big-eared bat
Western Pipestrelle	Western small-footed myotis	Yuma myotis
Mammals - Other		
Pygmy rabbit	River otter	Swift fox
White-tailed prairie dog	Wyoming pocket gopher	
Birds		
Least bittern	White-faced ibis	Trumpeter swan
Barrow's goldeneye	Bald eagle	Swainson's hawk
Ferruginous hawk	Golden eagle	Greater sage-grouse
Mountain plover	Long-billed curlew	Black tern
Burrowing owl	Long-eared owl	Short-eared owl
Loggerhead shrike	Sage thrasher	Yellow-breasted chat
Brewer's sparrow	Vesper sparrow	Sage sparrow
Grasshopper sparrow	Bobolink	
Reptiles		
Corn snake	Long-nosed leopard lizard	Midget faded rattlesnake
Smooth greensnake		

3.8.5.2 Proposed Alternative Southern Terminal

The Proposed Alternative Southern Terminal would be sited almost entirely within the developed/disturbed vegetation community. This category is not considered to be typical wildlife habitat and no special status wildlife species would be expected to occur in this community. A small amount of desert shrubland also would be within the siting area of the Proposed Alternative Southern Terminal. **Table 3.8-9** presents special status wildlife species potentially occurring at the Proposed Alternative Southern Terminal.

Table 3.8-9 Special Status Wildlife Species Potentially Occurring at the Proposed Alternative Southern Terminal

Mammals - Bats		
Allen's big-eared bat	Big brown bat	Big free-tailed bat
Brazilian free-tailed bat	California leaf-nosed bat	California myotis
Cave myotis	Fringed myotis	Greater western mastiff bat
Hoary bat	Long-eared myotis	Long-legged myotis
Pallid bat	Silver-haired bat	Spotted bat
Townsend's (Western) big-eared bat	Western pipistrelle	Western red bat
Western small-footed myotis	Yuma myotis	

Table 3.8-9 Special Status Wildlife Species Potentially Occurring at the Proposed Alternative Southern Terminal

Mammals - Other		
Dark kangaroo mouse	Desert bighorn sheep	Kit fox
Pale kangaroo mouse		
Birds		
Swainson's hawk	Ferruginous hawk	Golden eagle
Peregrine falcon	Prairie falcon	Burrowing owl
Long-eared owl	Gray vireo	Bendire's thrasher
Crissal thrasher	LeConte's thrasher	Phainopepla
Reptiles		
Banded Gila monster	Chuckwalla	Desert glossy snake
Desert iguana	Desert night lizard	Long-nosed leopard lizard
Mojave rattlesnake	Movave shovel-nosed snake	Sidewinder
Speckled rattlesnake	Western banded gecko	Western threadsnake (blindsnake)
Zebra-tailed lizard		
Terrestrial Invertebrates		
Great Basin small blue (small blue) butterfly	Mojave gypsum bee	Mojave poppy bee
Mono Basin skipper (Railroad Valley skipper) butterfly	Northern Mojave blue (Mojave blue) butterfly	

3.8.5.3 Alternate Southern Terminal

The Alternate Southern Terminal is sited within the same vegetation communities as the Proposed Alternative Southern Terminal. Special status wildlife species that could potentially occur at this terminal would be the same as presented in **Table 3.8-9**.

3.8.5.4 Southern Terminal Located Near IPP (Design Option 2)

Vegetative communities located within the Southern Terminal located near IPP (Design Option 2) siting area include, grassland, greasewood flat, herbaceous wetland, and saltbush shrubland. Direct impacts resulting from the construction of the terminal and associated facilities could occur within grassland, saltbush shrubland, and greasewood flat vegetative communities only.

Table 3.8-10 presents special status wildlife species potentially occurring at the Southern Terminal located near IPP (Design Option 2).

Table 3.8-10 Special Status Wildlife Species Potentially Occurring at the Southern Terminal Located near IPP (Design Option 2)

Mammals - Bats		
Allen's big-eared bat	Big brown bat	Big free-tailed bat
Brazilian free-tailed bat	California leaf-nosed bat	California myotis
Fringed myotis	Hoary bat	Long-eared myotis
Long-legged myotis	Pallid bat	Silver-haired bat

Table 3.8-10 Special Status Wildlife Species Potentially Occurring at the Southern Terminal Located near IPP (Design Option 2)

Spotted bat	Townsend's (Western) big-eared bat	Western pipistrelle
Western red bat	Western small-footed myotis	Yuma myotis
Mammals - Other		
Dark kangaroo mouse	Desert Valley kangaroo mouse	Kit fox
White-tailed prairie dog		
Birds		
Least bittern	White-faced ibis	Swainson's hawk
Ferruginous hawk	Golden eagle	Peregrine falcon
Prairie falcon	Columbian sharp-tailed grouse	Mountain plover
Long-billed curlew	Black tern	Burrowing owl
Long-eared owl	Short-eared owl	Black swift
Loggerhead shrike	Crissal thrasher	Gray vireo
Vesper sparrow	Bobolink	
Reptiles		
Banded Gila monster	Corn snake	Desert iguana
Long-nosed leopard lizard	Midget faded rattlesnake	Smooth greensnake
Speckled rattlesnake	Utah milk snake	Western banded gecko
Western threadsnake (blindsnake)		
Terrestrial Invertebrates		
Eureka mountainsnail	Great Basin silverspot (Nokomis fritillary) butterfly	Grey's silverspot (Grey's fritillary) butterfly
Honey Lake blue butterfly	MacNeill sooty wing skipper (MacNeill saltbush sootywing) butterfly	Mono Basin skipper (Railroad Valley skipper) butterfly
Rice's blue butterfly	White River wood nymph butterfly	

3.8.5.5 Southern Substation located near IPP (Design Option 3)

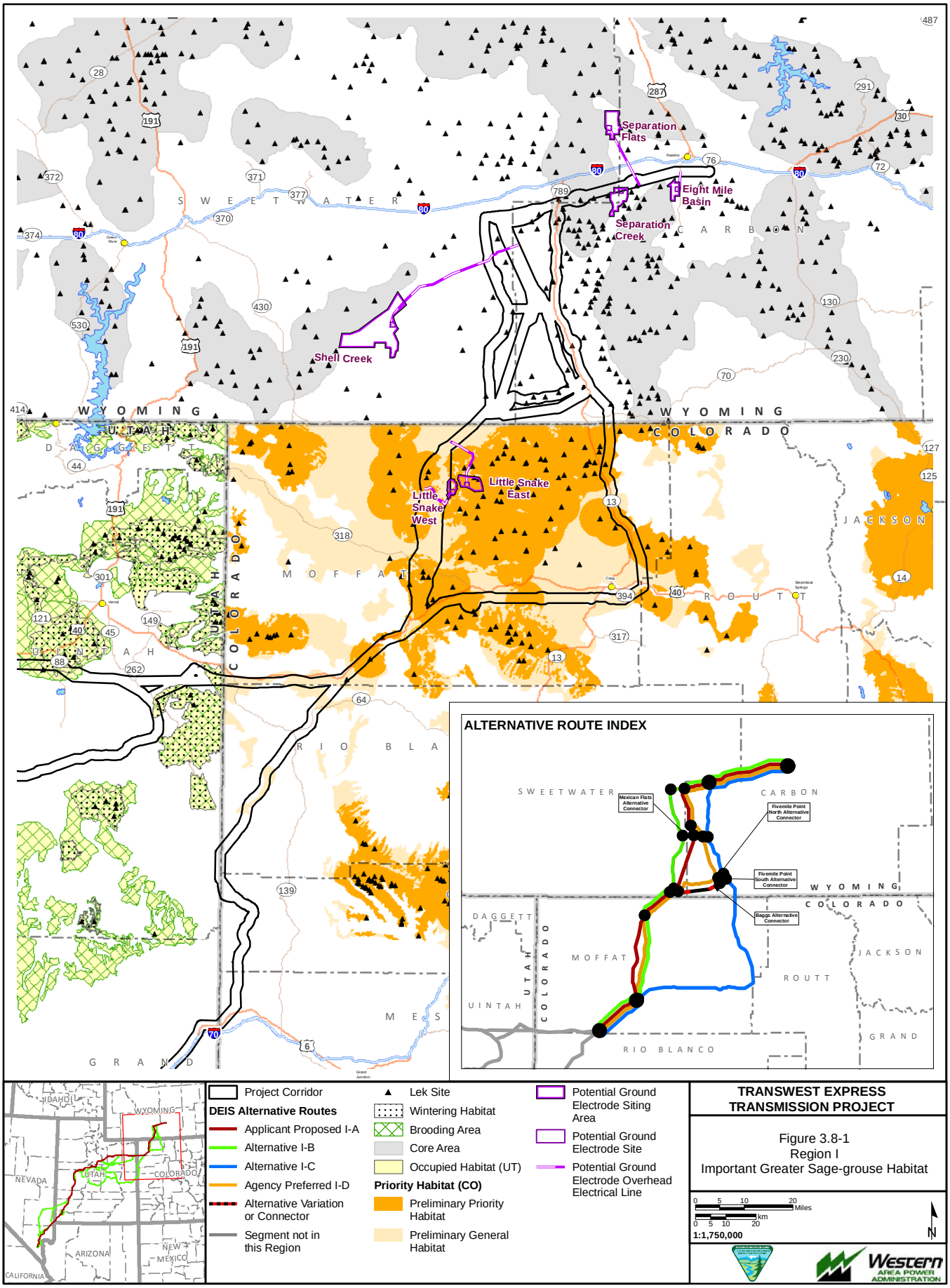
The Southern Substation located near IPP (Design Option 3) would be sited entirely within the boundaries of the Southern Terminal (Design Option 2). Special status wildlife species that could potentially occur at this terminal would be the same as presented in **Table 3.8-10**.

3.8.5.6 Region I

Region I extends from the Northern Terminal siting area near Rawlins, Wyoming, southwest through northeastern Utah and northwestern Colorado. Dominant vegetation community types are sagebrush shrubland and saltbush shrubland. All vegetation communities except deciduous forest, desert shrub, and riparian occur in Region I. A description of vegetation communities is presented in Section 3.5, Vegetation. Special status wildlife species that may occur in Region I are presented in **Table 3.8-11**. Habitat within the greater sage-grouse analysis area in Region I is presented in **Figure 3.8-1**. Black-footed ferret non block-cleared areas and white-tailed prairie dog colonies within the black-footed ferret analysis area in Wyoming are presented in **Figure 3.8-2**.

Table 3.8-11 Special Status Wildlife Species Potentially Occurring in Region I

Mammals – Bats		
Big brown bat	California myotis	Hoary bat
Long-eared myotis	Long-legged myotis	Pallid bat
Silver-haired bat	Spotted bat	Townsend's (Western) big-eared bat
Western pipistrelle	Western red bat	Western small-footed myotis
Yuma myotis		
Mammals – Other		
Black-footed ferret	Canada lynx	Wyoming pocket gopher
Fisher	Gray wolf	Idaho pocket gopher
Pygmy rabbit	River otter	Rocky Mountain bighorn sheep
Swift fox	White-tailed prairie dog	Wolverine
Birds		
American white pelican	Least bittern	White-faced ibis
Trumpeter swan	Barrow's goldeneye	Bald eagle
Northern goshawk	Swainson's hawk	Ferruginous hawk
Golden eagle	Peregrine falcon	Prairie falcon
Greater sage-grouse	Columbian sharp-tailed grouse	Mountain plover
Long-billed curlew	Black tern	Western yellow-billed cuckoo
Flammulated owl	Burrowing owl	Long-eared owl
Short-eared owl	Boreal owl	Black swift
Lewis' woodpecker	Red-naped sapsucker	American three-toed woodpecker
Loggerhead shrike	Gray vireo	Pinyon jay
Juniper titmouse	Sage thrasher	Yellow-breasted chat
Brewer's sparrow	Vesper sparrow	Sage sparrow
Grasshopper sparrow	Bobolink	
Reptiles		
Corn Snake	Long-nosed leopard lizard	Midget faded rattlesnake
Smooth greensnake		
Terrestrial Invertebrates		
Great Basin silverspot (Nokomis fritillary butterfly)		



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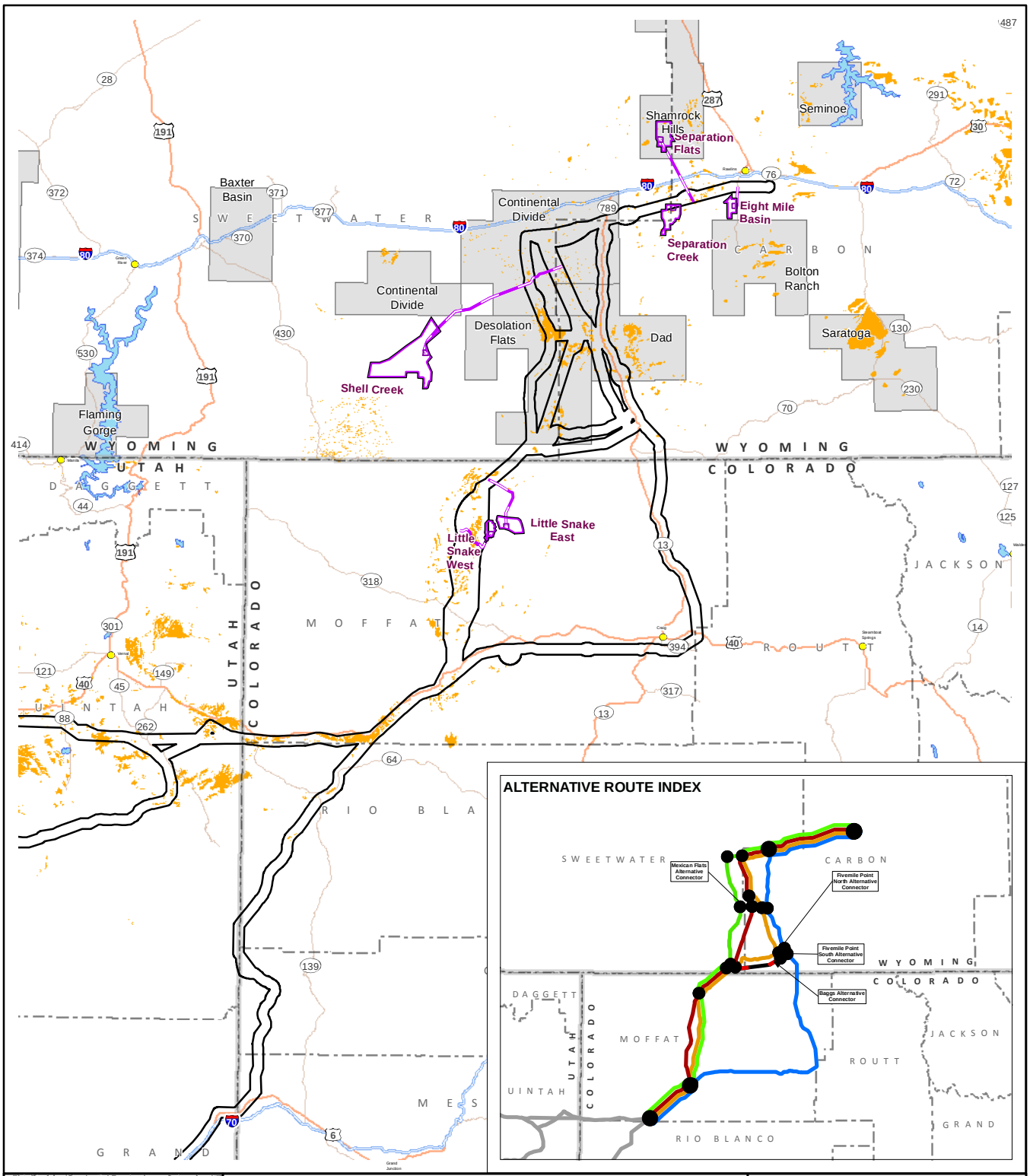

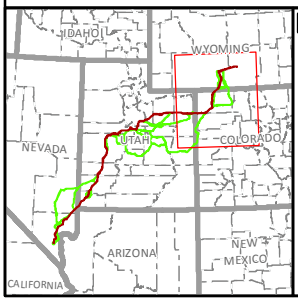

Project Corridor

DEIS Alternative Routes

- Applicant Proposed I-A
- Alternative I-B
- Alternative I_C
- Agency Preferred I-D
- Alternative Variation or Connector
- Segment not in this Region

- Potential Ground Electrode Siting Area
- Potential Ground Electrode Site
- Potential Ground Electrode Overhead Electrical Line
- White-tailed Prairie Dog Colonies
- USFWS Black-footed Ferret Non Block-cleared Areas

TRANSWEST EXPRESS TRANSMISSION PROJECT

Figure 3.8-2
Region I
Black-footed Ferret
USFWS Non Block-cleared Areas

0 5 10 20 Miles
0 5 10 20 km
1:1,750,000
N

Western AREA POWER ADMINISTRATION

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3.8.5.7 Region II

Region II extends from northeastern Utah and northwestern Colorado to the IPP in western Utah. Vegetation in Region II is diverse, with the dominant community types consisting of sagebrush shrubland, saltbush shrubland, and pinyon-juniper. All other vegetation communities also occur in Region II. A description of vegetation communities is presented in Section 3.5, Vegetation. Special status wildlife species that may occur in Region II are presented in **Table 3.8-12**. Habitat within the greater sage-grouse analysis area in Region II is presented in **Figure 3.8-3**. Miles of national forest crossed by region by alternative, alternative connector, or variation is presented in **Table 3.7-27** in Section 3.7, Wildlife.

Table 3.8-12 Special Status Wildlife Species Potentially Occurring in Region II

Mammals - Bats		
Big brown bat	Big free-tailed bat	Brazilian free-tailed bat
California myotis	Fringed myotis	Hoary bat
Long-eared myotis	Long-legged myotis	Pallid bat
Silver-haired bat	Spotted bat	Townsend's (Western) big-eared bat
Western pipistrelle	Western red bat	Western small-footed myotis
Yuma myotis		
Mammals - Other		
Black-footed ferret	Canada lynx	Dark kangaroo mouse
Desert bighorn sheep	Fisher	Gray wolf
Kit fox	Pygmy rabbit	River otter
Rocky Mountain bighorn sheep	Utah prairie dog	White-tailed prairie dog
Wolverine		
Birds		
American white pelican	White-faced ibis	Bald eagle
Northern goshawk	Swainson's hawk	Ferruginous hawk
Golden eagle	Peregrine falcon	Prairie falcon
Greater sage-grouse	Columbian sharp-tailed grouse	Mountain plover
Long-billed curlew	Black tern	Yellow-billed cuckoo (western)
Flammulated owl	Burrowing owl	Mexican spotted owl
Long-eared owl	Short-eared owl	Boreal owl
Black swift	Lewis's woodpecker	Red-naped sapsucker
American three-toed woodpecker	Loggerhead shrike	Gray vireo
Pinyon jay	Juniper titmouse	Sage thrasher
Bendire's thrasher	Yellow-breasted chat	Brewer's sparrow
Vesper sparrow	Sage sparrow	Bobolink
Reptiles		
Corn snake	Long-nosed leopard lizard	Midget faded rattlesnake
Smooth greensnake	Utah milk snake	
Terrestrial Invertebrates		
Eureka mountainsnail	Great Basin silverspot butterfly (Nokomis fritillary butterfly)	

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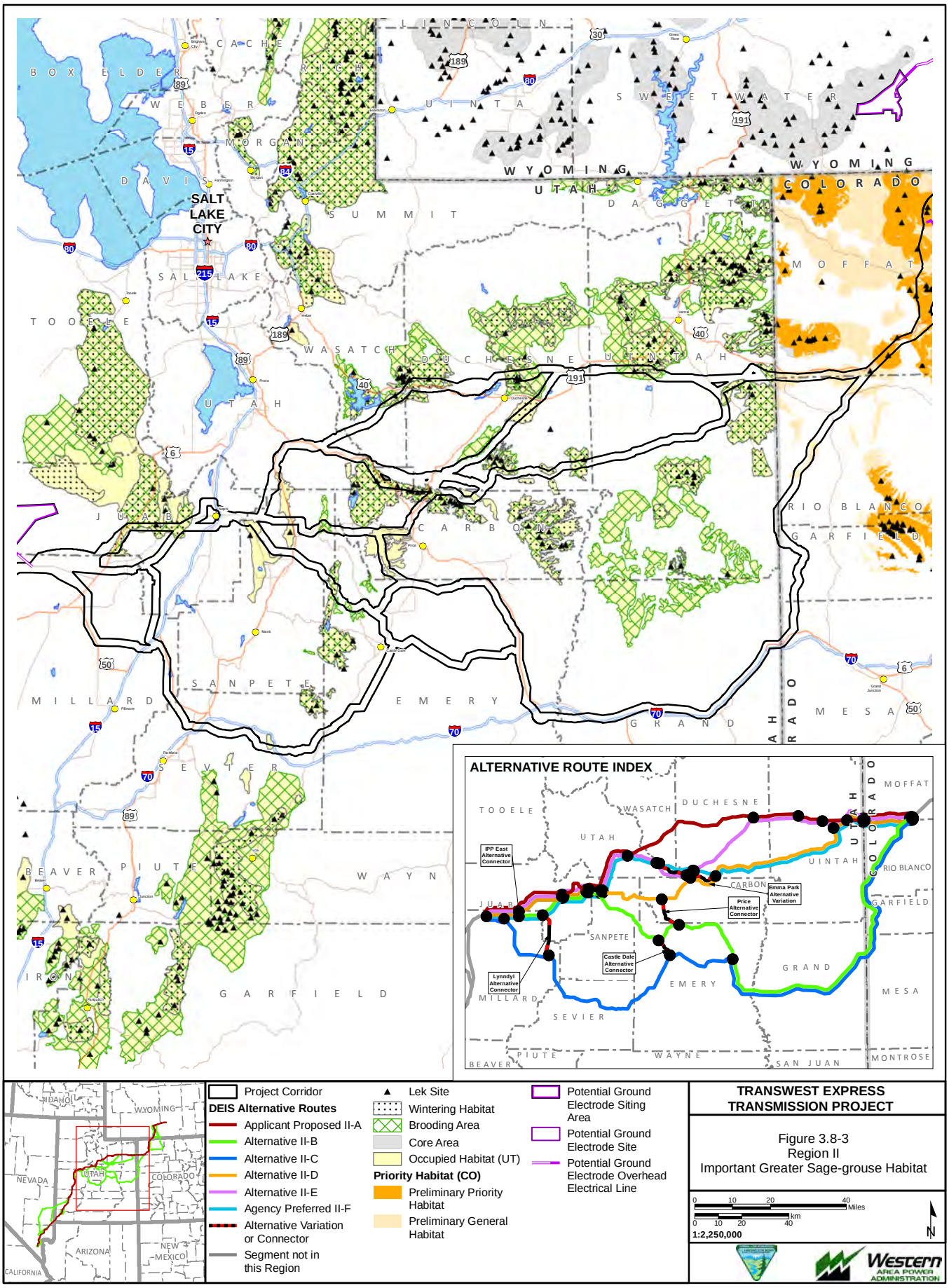

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3.8.5.8 Region III

Region III extends from the IPP in western Utah to northern Las Vegas, Nevada. In Region III, desert shrubland is the dominant community. All other vegetation communities occur in Region III. A description of vegetation communities is presented in Section 3.5, Vegetation. Special status wildlife species that may occur in Region III are presented in **Table 3.8-13**. Habitat within the desert tortoise analysis area in Region III is presented in **Figure 3.8-4**. Habitat within the greater sage-grouse analysis area in Region III is presented in **Figure 3.8-5**. The Dixie National Forest is crossed by the Project in Region III. **Table 3.7-27** presents the Region III alternatives and project components that occur in or cross the Dixie National Forest.

Table 3.8-13 Special Status Wildlife Species Potentially Occurring in Region III

Mammals - Bats		
Allen's big-eared bat	Big brown bat	Big free-tailed bat
Brazilian free-tailed bat	California leaf-nosed bat	California myotis
Cave myotis	Fringed myotis	Hoary bat
Long-eared myotis	Long-legged myotis	Pallid bat
Silver-haired bat	Spotted bat	Townsend's (Western) big-eared bat
Western pipistrelle	Western red bat	Western small-footed myotis
Yuma myotis		
Mammals - Other		
Dark kangaroo mouse	Desert bighorn sheep	Desert Valley kangaroo mouse
Kit fox	Pygmy rabbit	Rocky Mountain bighorn sheep
Utah prairie dog		
Birds		
Least bittern	White-faced ibis	California condor
Bald eagle	Swainson's hawk	Ferruginous hawk
Golden eagle	Peregrine falcon	Prairie falcon
Greater sage-grouse	Yuma clapper rail	Long-billed curlew
Yellow-billed cuckoo (western)	Burrowing owl	Mexican spotted owl
Long-eared owl	Short-eared owl	Lewis's woodpecker
Red-naped sapsucker	Southwestern willow flycatcher	Loggerhead shrike
Gray vireo	Pinyon jay	Sage thrasher
Bendire's thrasher	Crissal thrasher	Le Conte's thrasher
Phainopepla	Lucy's warbler	Yellow-breasted chat
Brewer's sparrow	Vesper sparrow	Sage sparrow
Bobolink		
Reptiles		
Banded Gila monster	Chuckwalla	Corn snake
Desert iguana	Desert night lizard	Desert tortoise
Long-nosed leopard lizard	Mojave rattlesnake	Sidewinder
Speckled rattlesnake	Western banded gecko	Western red-tailed skink
Western threadsnake (blindsnake)	Zebra-tailed lizard	
Terrestrial Invertebrates		
Great Basin small blue (Small blue) butterfly	Grey's silverspot (Grey's fritillary) butterfly	Honey Lake blue butterfly
MacNeill sooty wing skipper (MacNeill saltbush sootywing) butterfly	Mojave gypsum bee	Mojave poppy bee
Mono Basin skipper (Railroad Valley skipper) butterfly	Northern Mojave blue (Mojave blue) butterfly	Rice's blue butterfly
White River wood nymph butterfly		

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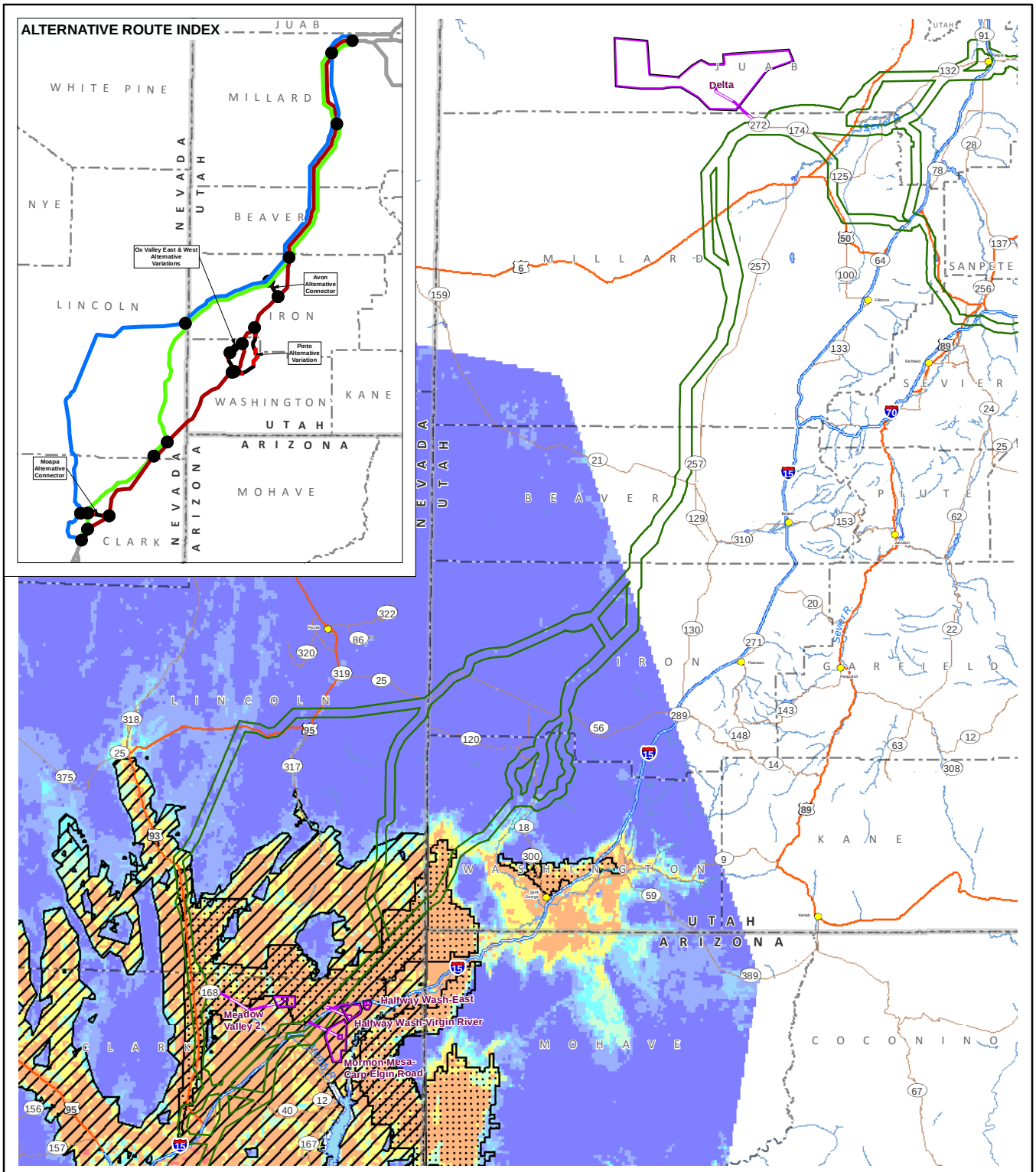

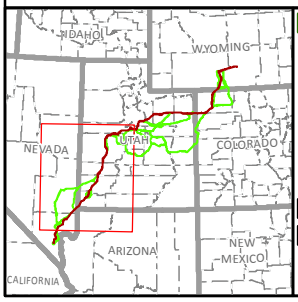

Project Corridor

DEIS Alternative Routes

- Applicant Proposed III-A
- Agency Preferred III-B
- Alternative III-C
- Alternative Variation or Connector
- Segment not in this Region
- Critical Habitat
- Potential Habitat (USFWS model for Nevada)

- Potential Ground Electrode Siting Area
- Potential Ground Electrode Site
- Potential Ground Electrode Overhead Electrical Line

USGS Model Ranking (0=Lowest, 1.0=Highest)

- 0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1

TRANSWEST EXPRESS TRANSMISSION PROJECT

Figure 3.8-4
Region III
Important Desert Tortoise Habitat

0 10 20 40 Miles
0 10 20 40 km
1:2,000,000

Western AREA POWER ADMINISTRATION

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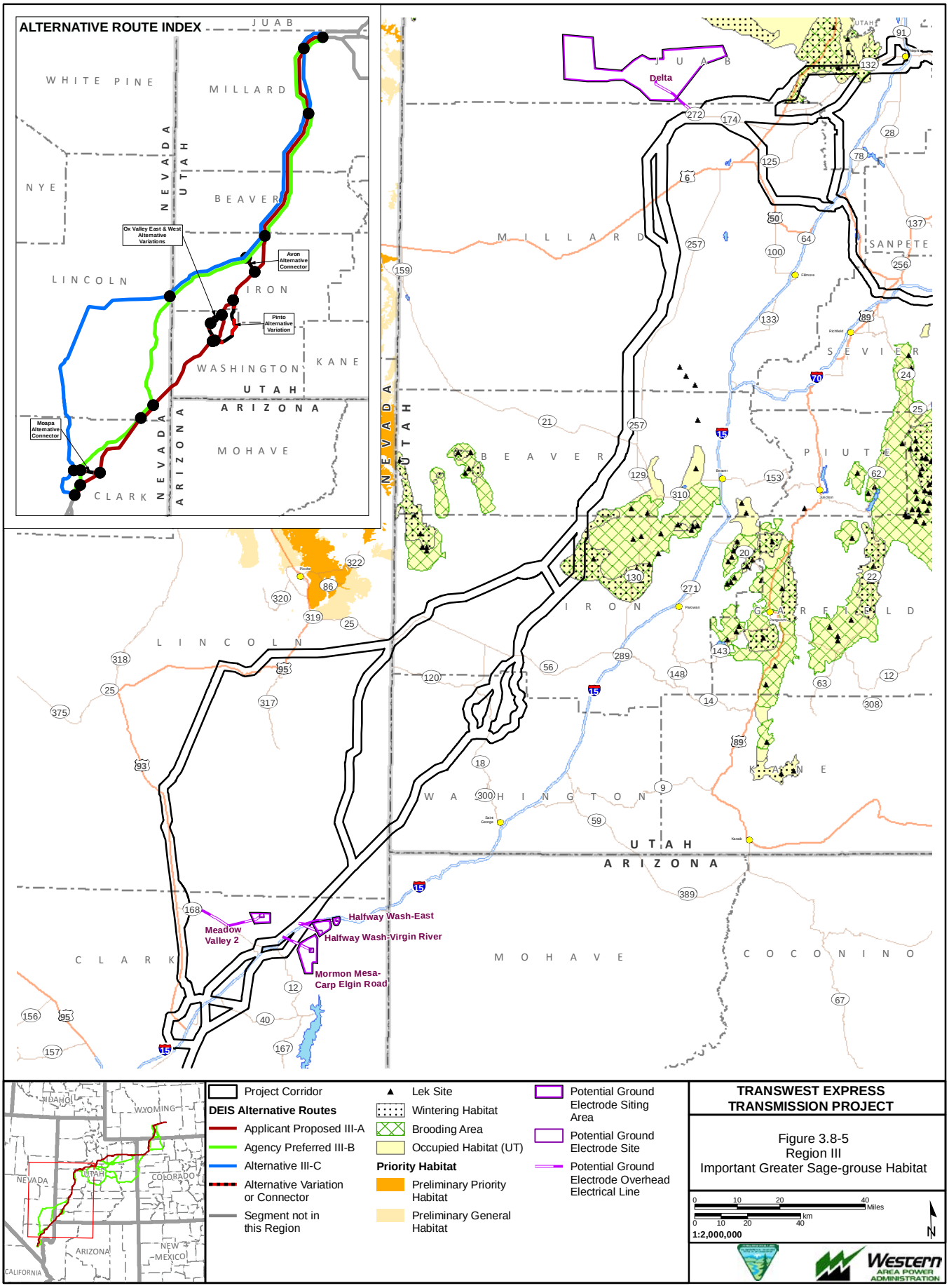

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3.8.5.9 Region IV

Region IV extends from northern Las Vegas, Nevada to Marketplace, Nevada. There is less diversity of vegetation communities in Region IV. The dominant community type is desert shrubland. The remaining vegetation communities include: barren/sparsely vegetated; cliff and canyon; desert shrub; grassland; herbaceous wetland; open water; pinyon-juniper; riparian; sagebrush shrubland; saltbush shrubland; and woody riparian and wetlands. A description of these communities is presented in Section 3.5, Vegetation. Special status wildlife species that may occur in Region IV are presented in **Table 3.8-14**. Habitat within the desert tortoise analysis area in Region IV is presented in **Figure 3.8-6**.

Table 3.8-14 Special Status Wildlife Species Potentially Occurring in Region IV

Mammals - Bats		
Allen's big-eared bat	Big brown bat	Big free-tailed bat
Brazilian free-tailed bat	California leaf-nosed bat	California myotis
Cave myotis	Fringed myotis	Greater western mastiff bat
Hoary bat	Long-eared myotis	Long-legged myotis
Pallid bat	Silver-haired bat	Spotted bat
Townsend's (Western) big-eared bat	Western pipistrelle	Western red bat
Western small-footed myotis	Yuma myotis	
Mammals - Other		
Dark kangaroo mouse	Desert bighorn sheep	Kit fox
Pale kangaroo mouse		
Birds		
Least bittern	White-faced ibis	Bald eagle
Swainson's hawk	Ferruginous hawk	Golden eagle
Peregrine falcon	Prairie falcon	Yuma clapper rail
Western snowy plover	Yellow-billed cuckoo (western)	Burrowing owl
Long-eared owl	Red-naped sapsucker	Southwestern willow flycatcher
Loggerhead shrike	Gray vireo	Bendire's thrasher
Crissal thrasher	Le Conte's thrasher	Phainopepla
Lucy's warbler	Yellow-breasted chat	
Reptiles		
Banded Gila monster	Chuckwalla	Desert glossy snake
Desert iguana	Desert night lizard	Desert tortoise
Long-nosed leopard lizard	Mojave rattlesnake	Mojave shovel-nosed snake
Sidewinder	Speckled rattlesnake	Western banded gecko
Western red-tailed skink	Western threadsnake (blindsnake)	Zebra-tailed lizard
Terrestrial Invertebrates		
Great Basin small blue (small blue) butterfly	Honey Lake blue butterfly	Mojave gypsum bee
Mojave poppy bee	Mono Basin skipper (Railroad Valley skipper) butterfly	Northern Mojave blue (Mojave blue) butterfly
Rice's blue butterfly		

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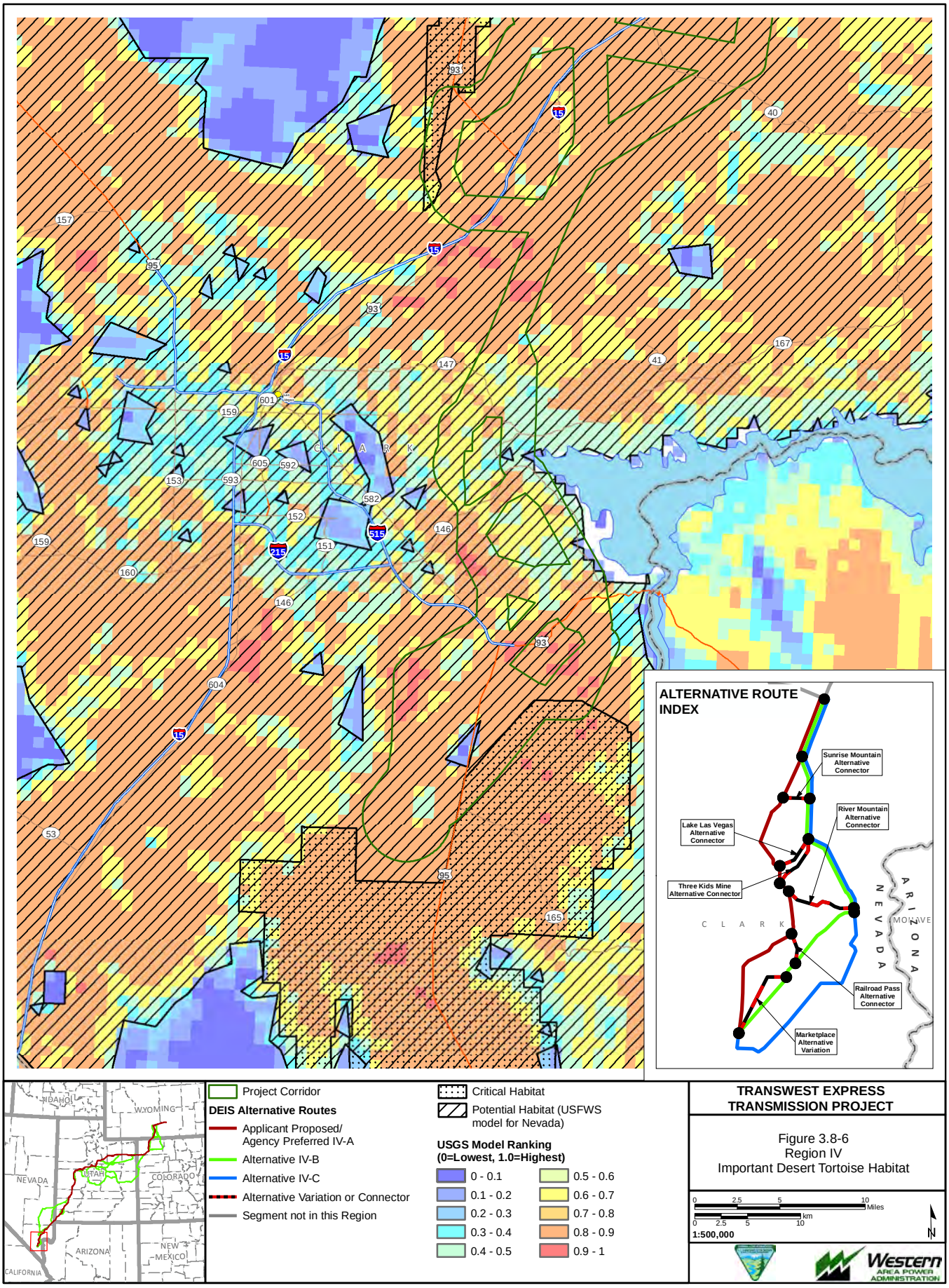

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3.8.6 Impacts to Special Status Wildlife Species

The impact assessment analysis area for special status wildlife species includes habitats within a 250-foot-wide transmission line ROW for each alternative route. The impact analysis area for potential access roads includes habitats that occur within a 2-mile transmission line corridor for each alternative route. This analysis area was assessed because the exact locations of access roads have not been determined. Identification of habitat potentially impacted by Project activities focused on vegetation communities that support various special status wildlife species seasonally or throughout the year.

Several small reroutes and micro-siting adjustments to the proposed alternative routes in Regions II and III have been included in analyses and are described in detail in Section 2.5.1. These adjustments would occur along Alternatives I-D, II-A, II-B, II-C, II-E, II-F, III-A, IV-A, and IV-C. Alternatives I-B and I-D have been widened slightly to accommodate possible micro-siting adjustments to avoid greater sage-grouse habitat. The slight changes in impact acreages for micro-siting, widening, reroutes, or merged alternative segments will be included in analyses, but are not expected to cause more than incremental differences in impacts to special status species. These project adjustments have been incorporated to address concerns regarding USFS IRAs, BLM designated utility corridors, and greater sage-grouse potential habitat.

The methodology for evaluating impacts to special status wildlife species focused on those species that were identified as potentially occurring within the special status wildlife analysis area. Species considered for the impact analysis are included in **Table 3.8-6**. Special status wildlife species included in this analysis include 38 mammals, 51 birds, 19 reptiles, and 12 terrestrial invertebrate species. In total, 4 federally listed mammals, 7 bird species, and 1 reptile species were analyzed. Two federal candidate species were analyzed, along with 106 BLM, USFS, and/or state-protected species. Three federally listed bird species do not occur in the special status wildlife analysis area, but are included on the special status species lists due to their occurrence in the North Platte sub-basin.

Special status wildlife species-related issues addressed by this impact assessment were determined through the public scoping process and in consultation with BLM, CPW, NDOW, UDWR, USFS, USFWS, Western, and WGFD. Issues ranged from direct loss and fragmentation of desert tortoise habitat and greater sage-grouse habitat, to the direct loss of birds, primarily greater sage-grouse and raptor species, as a result of electrocution and collision with transmission lines. Impact parameters were used in combination to quantify impacts. The impact parameters also allow comparisons among the applicant-proposed routes, alternatives, and alternative variations. Impact issues and the analysis considerations for special status wildlife species are listed in **Table 3.8-15**.

Table 3.8-15 Relevant Analysis Considerations for Special Status Wildlife Species

Resource Topic	Analysis Considerations and Relevant Assumptions
Habitat loss and fragmentation	• Acres of habitat for wildlife species located within the 250-foot-wide transmission line ROW and 2-mile transmission line corridor for access roads are quantified; • Species-specific avoidance measures are discussed; • The degree to which the loss or fragmentation of habitat would affect individuals and whether these effects could impact populations of affected species are qualitatively discussed; • Changes in vegetation communities that influence wildlife habitat are referenced; • The timeline for vegetation communities to recover to baseline levels is estimated; • Habitat disturbance is related to overall habitat availability in the respective analysis areas; and • Impacts resulting from habitat loss and fragmentation are evaulated using the best available literature.

Table 3.8-15 Relevant Analysis Considerations for Special Status Wildlife Species

Resource Topic	Analysis Considerations and Relevant Assumptions
Loss of or injury to a species, displacement of individuals, and loss of breeding success from exposure to increased noise and human activity	• Impacts of bird and bat collisions from transmission lines on overall populations are evaluated in qualitative terms; • A qualitative discussion of how construction and operation activities may displace or impact breeding activity for wildlife species is included; and • The wildlife/vehicle collision potential is described in both quantitative and qualitative terms.
Potential impacts of increased perches/predation from Project infrastructure	• Impacts of increased predation by raptors and corvids (e.g., ravens, crows) on wildlife species is evaluated in qualitative terms.

Potential direct and indirect effects of construction, operation, and decommissioning on special status wildlife species and their associated habitats are discussed below. After impacts are identified, relevant BMPs and TWE's design features are discussed in terms of reducing impacts. If impacts remain after application of BMPs and TWE's design features, additional mitigation is recommended to reduce impacts. As required under Section 7 of the Endangered Species Act, a BA will be prepared for the TransWest Express Transmission Project (Draft EIS) to determine whether the proposed Project is likely to affect any federally listed, candidate, or proposed species.

The impacts analysis for special status wildlife species assumes that the BLM and USFS will continue to manage special status wildlife species habitats in coordination with CPW, NDOW, UDWR, and WGFD and that the USFWS has jurisdiction over the management of federally endangered, threatened, and proposed species populations. It also assumes that the BLM will continue to manage BLM sensitive species in accordance with BLM Manual 6840 and the USFS will continue to manage MIS and their habitats in accordance with NFMA and Forest Plan requirements and USFS sensitive species in accordance with U.S. Forest Service Manual 2670. Further assumptions are that the design features committed to by TWE and the BMPs would be implemented under all alternatives (**Appendix C**).

Through the implementation of the following Project design features and BMPs (as outlined in **Appendix C**), the direct impacts to special status wildlife resources due to construction would be minimized:

- WWEC BMPs – ECO-1/ECO-2/ECO-4/ECO-6/ECO-7/ECO-8 (protection of sensitive wildlife and habitats); FIRE-1/FIRE-2 (fire management and fuels strategies); NOISE-2 (noise reduction strategy); REST-1 (topsoil salvage, seeding with weed-free, native seeds, and restoring pre-development contours) and REST-2 (restoring vegetation to values commensurate with the ecological setting);
- Agency BMPs – All applicable State and Federal agency No Surface Occupancy restrictions (NSO), Conditional Surface Occupancy (CSO) restrictions, and Timing Limitations (TL) as outlined in Appendix C;
- TWE Design Features – TWE-1/TWE-2 (compliance with agency stipulations, laws and regulations); TWE-4 (environmental training); TWE-13/TWE-14/TWE-16 (vegetation management, restoration, and erosion control); TWE-26/TWE-27/TWE-28 (vegetation and noxious weed management); TWE-29/TWE-30/TWE-31/TWE-32/TWE-33/TWE-34 (ecological and special status species protection).

In addition the following mitigation measure for wildlife should be implemented:

- ***SSWS-1**: In order to protect nesting mountain plovers, TWE would follow the USFWS 2002 Mountain Plover Survey Guidelines and would conduct mountain plover nest surveys if construction were to occur during the mountain plover breeding season (April 10 to July 10). If a nest is located, a 0.25 mile protection buffer would be implemented around the active nest until the birds fledge from the nest.*
- ***SSWS-2**: Prior to construction activities in suitable pygmy rabbit habitat, TWE would conduct presence/absence surveys following appropriate protocols. Areas within 0.5 mile of proposed disturbance that show characteristics of pygmy rabbit habitat will be surveyed in accordance with the Interagency Pygmy Rabbit Working Group Survey Protocols (Ulmschneider et al. 2004). If the surveys conclude that pygmy rabbits occur, the "Habitat Preservation and Restoration" conservation measures would apply (Keinath and McGee 2004).*
- ***SSWS-3**: Prior to construction activities in suitable Wyoming pocket gopher habitat, TWE would conduct presence/absence surveys following appropriate protocols. If active pocket gopher mounds are identified, the proposed surface disturbing activities would avoid the active pocket gopher mounds by 75 m (BLM 2009). However, if TWE does not wish to avoid the active pocket gopher mounds by 75 m, classification surveys (via live capture) must be completed to identify the pocket gopher responsible for the mounds to the species level. If the results conclude that the Wyoming pocket gopher is responsible for the mounds, the "Occupied Wyoming Pocket Gopher Habitat Protection Measures" would apply (BLM 2009). If the results conclude that the associated species is a northern pocket gopher, then the proposed surface disturbance may proceed without mitigation. If the classification survey fails to conclusively identify the associated pocket gopher to the species level, then it will be assumed that the species is a Wyoming pocket gopher and the "Occupied Wyoming Pocket Gopher Habitat Protection Measures" will apply (BLM 2009).*
- ***SSWS-4**: To avoid and minimize impacts to the desert tortoise and its habitat, TWE would conduct field surveys in identified desert tortoise habitat following approved USFWS protocols. TWE would coordinate with the BLM, Western, Boulder City, Clark County, Nevada, Bureau of Reclamation, and USFWS to implement appropriate mitigation measures during construction, including but not limited to, fencing, preconstruction surveys, and relocating desert tortoises.*
- ***SSWS-5**: To reduce impacts to greater sage-grouse from operation of the proposed Project, several specific design features would be implemented.*
  - *To limit raptor and corvid predation on greater sage-grouse, TWE would be required to construct anti-perching devices on segments of the proposed Project near high quality greater sage-grouse habitat (e.g., within 4 miles of occupied/active leks, within core areas, within PPH, etc.) in consultation with the BLM, Western, and applicable state wildlife agencies.*
  - *To limit the potential for greater sage-grouse collisions with guy wires, TWE would be required to outfit guy wires with agency approved bird diverters within high quality greater sage-grouse habitat, or alternatively, to construct alternative structures such as self-supporting steel lattice structures or self-supporting tubular H-frame structures instead of guyed lattice structures within greater sage-grouse habitat.*
- ***SSWS-6**: To prevent impacts to the western yellow-billed cuckoo during the breeding season, TWE would avoid construction within potentially suitable habitat from March 15 to October 15, or, alternatively, would conduct breeding western yellow-billed cuckoo surveys and implement appropriate mitigation in coordination with the BLM, Western, USFWS, and applicable state wildlife agencies.*
- ***SSWS-7**: To reduce impacts to Utah prairie dogs, TWE would be required to conduct a preliminary habitat assessment along portions of the proposed Project that is within historic Utah prairie dog habitat. Based on the results of the habitat survey, additional surveys may be required by the USFWS to determine whether occupied habitat occurs within the disturbance footprint of the proposed Project. If occupied habitat is found, appropriate mitigation measures such as*

reroutes, reducing the width of the ROW, and constructing alternative structures types (e.g. H-frame tubular) with anti-perching devices on transmission line segments within occupied habitat, would be implemented in coordination with the BLM, Western, UDWR, and USFWS.

- ***SSWS-8**: To prevent impacts to southwestern willow flycatchers during the breeding season, TWE would avoid construction within suitable habitat from March 15 to October 15, or, alternatively, conduct breeding southwestern willow flycatcher surveys and implement appropriate mitigation in coordination with the BLM, Western, USFWS, and applicable state wildlife agencies.*
- ***SSWS-9**: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented. To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

3.8.6.1 Impacts from Terminal Construction and Operation

Section 2.4, Elements Common to All Action Alternatives describes the Northern Terminal, the Proposed Alternative Southern Terminal, the Southern Terminal located near IPP (Design Option 2), and the Southern Substation located near IPP (Design Option 3). Vegetative communities potentially impacted at terminal siting areas are presented below. No national forests would be impacted by terminals.

Potential impacts to special status wildlife species at terminal sites can be grouped into two main categories: construction and operation. Construction-related impacts primarily are habitat disturbance, fragmentation, and direct mortalities as a result of vehicle collisions and crushing of nests/burrows. Habitat disturbance resulting from the construction of terminals can be further classified into construction and operation impacts. Construction impacts account for all disturbance during construction of the terminal sites. Operation impacts are defined as impacts that remain after construction reclamation efforts are complete and will last at least as long as the Project is in operation. Examples of operation impacts include habitat disturbance in areas where facilities will be sited that wouldn't be reclaimed until after the end of the Project's design life (decommissioning). Habitat impacts can be further categorized as direct and indirect. Direct habitat impact results when habitat is destroyed or converted to a form that is unsuitable for the impacted species. The primary potential indirect impact is species avoidance (displacement) of otherwise suitable habitat in and around terminal locations. The methodology for calculating indirect impacts to habitat is described in Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associated Components.

The primary operation-related impact associated with the terminals is mortality as a consequence of electrocution or collision with transmission line components.

<u>Raptor Nest Data Assumptions</u>

Raptor species are known to use nests for multiple years. The species using a particular nest may vary annually. For example, owls do not construct their own nests; they use previously constructed nests, or even burrows. Non-raptor species also use raptor nests and vice versa. Common ravens are not considered raptors, but raptor nest data often include common raven nests, for this reason.

When a raptor nest is identified outside of nesting season, or when no birds are present, it is often not possible to determine the species using the nest. Such nest occurrence data is still valuable and is included in analyses as unknown. Also, as previously described, the species using a nest can change over time. Nests for which the species is unknown are reported both in Section 3.7, Wildlife and Section 3.8, Special Status Wildlife Species.

Raptor nest data are compiled from seven BLM Field Offices, four National Forest datasets, NDOW, and two consultants. Every effort was made to compile the most accurate dataset for the project; however,

there is potential for duplication. The EIS analysis reports nests within 1 mile of the project reference lines and terminal sites. It is possible for a particular raptor nest to occur within 1 mile of multiple alternative routes, micro-siting options, alternative connectors, alternative variations, electrode sites, and terminal sites. Thus, the nest would be reported as potentially impacted multiple times.

Finally, while the most recent raptor nest data has been incorporated into analyses, nests and nest structures (i.e. trees) can be destroyed and new nests are constructed each year. A comprehensive raptor nest survey would be conducted along the agency preferred route prior to construction. This would provide the data needed to inform micro-siting adjustments, to avoid or minimize impacts to nesting raptors.

Construction Impacts

Northern Terminal

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted by construction and operation of the Northern Terminal include five federally listed; two federal candidate; and 45 BLM sensitive, USFS sensitive, and state-protected species. Suitable habitat for the western yellow-billed cuckoo and Canada lynx does not occur at the Northern Terminal; therefore, impacts to those species are not anticipated. Section 3.7.6.1 presents a description of existing disturbance at the Northern Terminal siting area.

Construction of the Northern Terminal would result in the construction and operation disturbance of 488 acres and 203 acres, respectively. These areas represent <0.01 percent of shrubland habitat within the Region I special status wildlife analysis area. The remaining disturbance area would be reclaimed at the end of the life of the Project (estimated at 50 years). Impacts to special status wildlife species that may be found at the Northern Terminal are presented below.

Whooping Crane (Endangered), Interior Least Tern (Endangered), Piping Plover (Threatened)

These species occur downstream of the Region I special status wildlife analysis area, along the Platte River in Nebraska. This area is located a considerable distance downstream of any construction or operation disturbance areas in Wyoming; thus, these activities would not affect the whooping crane, interior least tern, or piping plover. However, water depletion also must be evaluated for these species based on the Platte River Recovery Implementation Program (PRRIP), which was implemented in 2006. The goal of the PRRIP is to assist in the conservation and recovery of the target species and their associated habitats along the central and lower Platte River in Nebraska. Platte River water depletions include evaporative losses and consumptive use, which is characterized as diversions from the Platte River or its tributaries, less return flows. Any actions that may result in depletion to the Platte River system should be identified, and the amount and timing of the depletion calculated and provided to the USFWS. Since 1978, USFWS has concluded in all of its ESA Section 7 consultations on water projects in the Platte River basin in Nebraska that the Platte River ecosystem is in a state of jeopardy, and that any federal action resulting in further water depletion to the Platte River system will further or continue deterioration of the stressed habitats to be resources of national and international importance (USDOS 2008).

TWE has indicated that all water requirements for the Project will be met using existing water rights. Required water will be procured from municipal sources, from commercial sources, or under a temporary water use agreement with landowners holding existing water rights. No new water rights will be required. Therefore, construction of the Northern Terminal is anticipated to result in no new depletions within the Platte River basin, including the upper portion of the North Platte River and the downstream section of the Platte River basin in Nebraska. Confirmation of this determination will be ultimately made by the Wyoming State Engineers Office (SEO). Therefore, downstream impacts to habitat for these three federally listed species would not occur.

Greater Sage-grouse (Candidate)

A total of 2 occupied leks occur within 4 miles of the Northern Terminal. Approximately 230 acres of construction impacts and 150 acres of operation impacts would occur to BLM (Rawlins FO) mapped nesting and brood-rearing habitat as a result of the construction and operation of the Northern Terminal. However, due to the proposed location of the Northern Terminal near existing significant human disturbance, it is unlikely that greater sage-grouse typically occupy habitats in this area, especially for lekking. In addition, the Northern Terminal is not located within a greater sage-grouse core area. Nonetheless, potential mortality from construction of the Northern Terminal may occur if greater sage-grouse are present. The risk of direct mortality to greater sage-grouse from construction is most likely limited to nesting hens or young chicks that have limited mobility.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.) and implement seasonal timing restrictions and protection buffers in accordance with BLM IM 2010-012, EO 2011-5, and the BLM Rawlins FO RMP. Adherence to these regulations and guidelines would reduce impacts to greater sage-grouse during construction. In addition, implementation of TWE-26 and **VEG-1** would aid in reclamation activities to restore communities (e.g., sagebrush shrubland) to native ecosystems, especially in areas where reclamation is difficult. Implementation of **NX-1** and **NX-2** would minimize and mitigate impacts associated with the potential introduction or spread of noxious weeds and invasive plant species. Therefore, impacts to greater sage-grouse from the construction and operation of the Northern Terminal would be limited primarily to habitat loss and fragmentation.

Black-footed Ferret (Endangered)

No white-tailed prairie dog colonies occur at the Northern Terminal site. In addition, the USFWS has block-cleared all white-tailed prairie dog colonies in, and around the Northern Terminal location (USFWS 2004). The nearest non block-cleared area for black-footed ferrets is the Bolton Ranch Complex approximately 10 miles south of the Northern Terminal location. The nearest re-introduced population of black-footed ferrets is approximately 65 miles northeast of the Northern Terminal location in the Shirley Basin.

Due to the location of the Northern Terminal outside USFWS non block-cleared areas for black-footed ferrets, there is an extremely low likelihood of black-footed ferrets occurring at the Northern Terminal. No impacts to black-footed ferrets are expected.

BLM Sensitive and State-protected Species

BLM sensitive and state-protected species that may occur at the Northern Terminal are presented in **Table 3.8-16**. The types of direct and indirect impacts of construction and operation of the Northern Terminal to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife from Terminal Construction and Operation. Estimates of impacts to habitat types utilized by these species as a result of the construction and operation of the Northern Terminal are presented in Section 3.5, Vegetation. Two burrowing owl, 5 golden eagle, 1 great horned owl, 1 prairie falcon, and 12 raptor nests for which the species is not known also are documented within 1 mile of the Northern Terminal. Species-specific mitigation measures are discussed below.

SSWS-1*: In order to protect nesting mountain plovers, TWE would follow the USFWS 2002 Mountain Plover Survey Guidelines and would conduct mountain plover nest surveys if construction were to occur during the mountain plover breeding season (April 10 to July 10). If a nest is located, a 0.25 mile protection buffer would be implemented around the active nest until the birds fledge from the nest.*

Table 3.8-16 BLM Sensitive and State-protected Species Potentially Occurring at the Northern Terminal

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals - Bats	
Big brown bat	Grassland, greasewood flat, herbaceous wetland, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
California myotis	Greasewood flat, herbaceous wetland, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Hoary bat	Grassland, herbaceous wetland, woody riparian and wetlands
Long-eared myotis	Cliff and canyon, greasewood flat, herbaceous wetland, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Long-legged myotis	Herbaceous wetland, saltbush shrubland, woody riparian and wetlands
Pallid bat	Grassland, greasewood flat, woody riparian and wetlands
Silver-haired bat	Greasewood flat, herbaceous wetland, woody riparian and wetlands
Spotted bat	Greasewood flat, herbaceous wetland
Townsend's (Western) big-eared bat	Saltbush shrubland, sagebrush shrubland
Western pipistrelle	Herbaceous wetland
Western small-footed myotis	Cliff and canyon, greasewood flat, herbaceous wetland, woody riparian and wetlands
Yuma myotis	Cliff and canyon, greasewood flat, herbaceous wetland, sagebrush shrubland, saltbush shrubland
Mammals - Other	
Pygmy rabbit	Sagebrush shrubland
River otter	Woody riparian and wetlands
Swift fox	Grassland
White-tailed prairie dog	Grassland, greasewood flat, sagebrush shrubland, saltbush shrubland
Wyoming pocket gopher	Greasewood flat, sagebrush shrubland, saltbush shrubland
Birds	
Least bittern	Herbaceous wetland
White-faced ibis	Herbaceous wetland
Trumpeter swan	Herbaceous wetland
Barrow's goldeneye	Woody riparian and wetlands
Bald eagle	Woody riparian and wetlands
Swainson's hawk	Grassland, saltbush shrubland, sagebrush shrubland
Ferruginous hawk	Cliff and canyon, grassland, sagebrush shrubland, saltbush shrubland
Golden eagle	Cliff and canyon, grassland, sagebrush shrubland, saltbush shrubland
Mountain plover	Grassland
Long-billed curlew	Grassland, herbaceous wetland
Black tern	Herbaceous wetland
Burrowing owl	Grassland, sagebrush shrubland, saltbush shrubland
Long-eared owl	Woody riparian and wetlands

Table 3.8-16 BLM Sensitive and State-protected Species Potentially Occurring at the Northern Terminal

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Short-eared owl	Grassland, greasewood flat, herbaceous wetland, sagebrush shrubland
Loggerhead shrike	Grassland, greasewood flat, saltbush shrubland, sagebrush shrubland
Sage thrasher	Sagebrush shrubland
Yellow-breasted chat	Woody riparian and wetlands
Brewer's sparrow	Sagebrush shrubland
Vesper sparrow	Grassland, sagebrush shrubland
Sage sparrow	Sagebrush shrubland
Grasshopper sparrow	Grassland, sagebrush shrubland
Bobolink	Grassland, herbaceous wetland
Reptiles	
Corn snake	Grassland, greasewood flat, herbaceous wetland, woody riparian and wetlands
Long-nosed leopard lizard	Greasewood flat, sagebrush shrubland, saltbush shrubland,
Midget faded rattlesnake	Greasewood flat, sagebrush shrubland, saltbush shrubland
Smooth greensnake	Grassland, greasewood flat, herbaceous wetland, woody riparian and wetlands

Effectiveness: Mitigation measure **SSWS-1** requires TWE to avoid mountain plover nest sites identified within the areas of disturbance to prevent their removal and adhere to seasonal timing restrictions (April 10 to July 10) within applicable protection buffers (0.25 mile). As a result of this mitigation measure, project-related impacts to mountain plovers would not be anticipated and no take is expected as a result of the proposed Project.

SSWS-2*: Prior to construction activities in suitable pygmy rabbit habitat, TWE would conduct presence/absence surveys following appropriate protocols. Areas within 0.5 mile of proposed disturbance that show characteristics of pygmy rabbit habitat will be surveyed in accordance with the Interagency Pygmy Rabbit Working Group Survey Protocols (Ulmschneider et al. 2004). If the surveys conclude that pygmy rabbits occur, the "Habitat Preservation and Restoration" conservation measures would apply (Keinath and McGee 2004).*

Effectiveness: Implementation of **SSWS-2** would be effective in reducing impacts to pygmy rabbits by limiting surface disturbance activities in suitable habitat and by implementing specific protection measures to protect individuals in occupied habitat.

SSWS-3*: Prior to construction activities in suitable Wyoming pocket gopher habitat, TWE would conduct presence/absence surveys following appropriate protocols. If active pocket gopher mounds are identified, the proposed surface disturbing activities would avoid the active pocket gopher mounds by 75 m (BLM 2009). However, if TWE does not wish to avoid the active pocket gopher mounds by 75 m, classification surveys (via live capture) must be completed to identify the pocket gopher responsible for the mounds to the species level. If the results conclude that the Wyoming pocket gopher is responsible for the mounds, the "Occupied Wyoming Pocket Gopher Habitat Protection Measures" would apply (BLM 2009). If the results conclude that the associated species is a northern pocket gopher, then the proposed surface disturbance may proceed without mitigation. If the classification survey fails to conclusively identify the*

associated pocket gopher to the species level, then it will be assumed that the species is a Wyoming pocket gopher and the "Occupied Wyoming Pocket Gopher Habitat Protection Measures" will apply (BLM 2009).

Effectiveness: Implementation of SSW-3 would be effective in reducing impacts to Wyoming pocket gophers by limiting surface disturbance activities in suitable habitat and by implementing specific protection measures to protect individuals in occupied habitat.

Implementation of **SSWS-2** and **SSWS-3** would reduce impacts to pygmy rabbits and Wyoming pocket gophers by identifying suitable habitat and implementing appropriate mitigation measures, based on survey results. Additionally, TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status wildlife species. Remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species within the Region I special status wildlife analysis area, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact, given the extent of native habitats in the surrounding Project region.

Proposed Alternative Southern Terminal

BLM sensitive and state-protected species that may occur at the proposed alternative Southern Terminal are presented in **Table 3.8-17**. The types of direct and indirect impacts of construction and operation of the proposed alternative Southern Terminal to the 54 BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife from Terminal Construction and Operation. Estimates of impacts to habitat types utilized by these species as a result of the construction and operation of the proposed alternative Southern Terminal are presented in Section 3.5, Vegetation. No special status raptor nests are documented within the proposed alternative Southern Terminal siting area. Species-specific mitigation measures are discussed below. Section 3.7.6.1 presents a description of existing disturbance at the Proposed Alternate Southern Terminal siting area.

Table 3.8-17 BLM Sensitive and State-protected Species Potentially Occurring at the Proposed Alternative Southern Terminal and the Alternate Southern Terminal

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals - Bats	
Allen's big-eared bat	Desert shrubland
Big brown bat	Desert shrubland
Big free-tailed bat	Desert shrubland
Brazilian free-tailed bat	Desert shrubland
California leaf-nosed bat	Desert shrubland
California myotis	Desert shrubland
Cave myotis	Desert shrubland
Fringed myotis	Desert shrubland
Greater western mastiff bat	Desert shrubland
Hoary bat	Desert shrubland
Long-eared myotis	Desert shrubland
Long-legged myotis	Desert shrubland
Pallid bat	Desert shrubland
Silver-haired bat	Desert shrubland
Spotted bat	Desert shrubland

Table 3.8-17 BLM Sensitive and State-protected Species Potentially Occurring at the Proposed Alternative Southern Terminal and the Alternate Southern Terminal

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Townsend's (Western) big-eared bat	Desert shrubland
Western pipistrelle	Desert shrubland
Western red bat	Desert shrubland
Western small-footed myotis	Desert shrubland
Yuma myotis	Desert shrubland
Mammals - Other	
Dark kangaroo mouse	Desert shrubland
Desert bighorn sheep	Desert shrubland
Kit fox	Desert shrubland
Pale kangaroo mouse	Desert shrubland
Birds	
Swainson's hawk	Desert shrubland
Ferruginous hawk	Desert shrubland
Golden eagle	Desert shrubland
Peregrine falcon	Desert shrubland
Prairie falcon	Desert shrubland
Burrowing owl	Desert shrubland
Long-eared owl	Desert shrubland
Gray vireo	Desert shrubland
Bendire's thrasher	Desert shrubland
Crissal thrasher	Desert shrubland
LeConte's thrasher	Desert shrubland
Phainopepla	Desert shrubland
Reptiles	
Banded Gila monster	Desert shrubland
Chuckwalla	Desert shrubland
Desert glossy snake	Desert shrubland
Desert iguana	Desert shrubland
Desert night lizard	Desert shrubland
Long-nosed leopard lizard	Desert shrubland
Mojave rattlesnake	Desert shrubland
Mojave shovel-nosed snake	Desert shrubland
Sidewinder	Desert shrubland
Speckled rattlesnake	Desert shrubland
Western banded gecko	Desert shrubland
Western threadsnake (blindsnake)	Desert shrubland

Table 3.8-17 BLM Sensitive and State-protected Species Potentially Occurring at the Proposed Alternative Southern Terminal and the Alternate Southern Terminal

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Zebra-tailed lizard	Desert shrubland
Terrestrial Invertebrates	
Great Basin small blue (Small blue) butterfly	Desert shrubland
Mojave gypsum bee	Desert shrubland
Mojave poppy bee	Desert shrubland
Mono Basin skipper (Railroad Valley skipper) butterfly	Desert shrubland
Northern Mojave blue (Mojave blue) butterfly	Desert shrubland

Alternate Southern Terminal

The Alternate Southern Terminal is sited within the same vegetation communities as the Proposed Alternative Southern Terminal. BLM sensitive and state-protected species that may occur at the Alternate Southern Terminal are presented in **Table 3.8-17**. The types of direct and indirect impacts of construction and operation of the Alternate Southern Terminal to the 54 BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife from Terminal Construction and Operation. Estimates of impacts to habitat types utilized by these species as a result of the construction and operation of the Alternate Southern Terminal are presented in Section 3.5, Vegetation. No special status raptor nests are documented within the Alternate Southern Terminal siting area. Species-specific mitigation measures are discussed below. Section 3.7.6.1 presents a description of existing disturbance at the Proposed Alternate Southern Terminal siting area.

Southern Terminal located near IPP (Design Option 2)

BLM sensitive and state-protected species that may occur at the proposed Southern Terminal located near IPP (Design Option 2) are presented in **Table 3.8-18**. The types of direct and indirect impacts of construction and operation of the Southern Terminal located near IPP (Design Option 2) to the 60 BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife from Terminal Construction and Operation. Estimates of impacts to habitat types utilized by these species as a result of the construction and operation of the Southern Terminal located near IPP (Design Option 2) are presented in Section 3.5, Vegetation. No special status raptor nests are documented within the Southern Terminal located near IPP (Design Option 2) siting area. Species-specific mitigation measures are discussed below.

Table 3.8-18 BLM Sensitive and State-protected Species Potentially Occurring at the Southern Terminal located near IPP (Design Option 2)

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals - Bats	
Allen's big-eared bat	Greasewood flat, saltbush shrubland
Big brown bat	Grassland, greasewood flat, herbaceous wetland, saltbush shrubland
Big free-tailed bat	Grassland, herbaceous wetland, saltbush shrubland
Brazilian free-tailed bat	Herbaceous wetland, saltbush shrubland
California leaf-nosed bat	Saltbush shrubland

Table 3.8-18 BLM Sensitive and State-protected Species Potentially Occurring at the Southern Terminal located near IPP (Design Option 2)

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
California myotis	Greasewood flat, herbaceous wetland, saltbush shrubland
Fringed myotis	Grassland, greasewood flat, herbaceous wetland, saltbush shrubland
Hoary bat	Grassland, herbaceous wetland, saltbush shrubland
Long-eared myotis	Greasewood flat, herbaceous wetland, saltbush shrubland
Long-legged myotis	Herbaceous wetland, saltbush shrubland
Pallid bat	Grassland, greasewood flat, saltbush shrubland
Silver-haired bat	Greasewood flat, herbaceous wetland
Spotted bat	Grassland, greasewood flat, herbaceous wetland, saltbush shrubland
Townsend's (Western) big-eared bat	Greasewood flat, herbaceous wetland, saltbush shrubland
Western pipistrelle	Herbaceous wetland, saltbush shrubland
Western red bat	Herbaceous wetland
Western small-footed myotis	Grassland, greasewood flat, herbaceous wetland
Yuma myotis	Grassland, greasewood flat, herbaceous wetland, saltbush shrubland
Mammals - Other	
Dark kangaroo mouse	Grassland, saltbush shrubland
Desert Valley kangaroo mouse	Saltbush shrubland
Kit fox	Grassland, saltbush shrubland
White-tailed prairie dog	Grassland, greasewood flat, saltbush shrubland
Birds	
Least bittern	Herbaceous wetland
White-faced ibis	Herbaceous wetland
Swainson's hawk	Grassland, saltbush shrubland
Ferruginous hawk	Grassland, saltbush shrubland
Golden eagle	Grassland, saltbush shrubland
Peregrine falcon	Grassland, herbaceous wetland, saltbush shrubland
Prairie falcon	Grassland, saltbush shrubland
Columbian sharp-tailed grouse	Grassland, greasewood flat, herbaceous wetland
Mountain plover	Grassland
Long-billed curlew	Grassland, herbaceous wetland
Black tern	Herbaceous wetland
Burrowing owl	Grassland, saltbush shrubland
Long-eared owl	Grassland, saltbush shrubland
Short-eared owl	Grassland, greasewood flat, herbaceous wetland
Black swift	Herbaceous wetland
Loggerhead shrike	Grassland, greasewood flat, saltbush shrubland

Table 3.8-18 BLM Sensitive and State-protected Species Potentially Occurring at the Southern Terminal located near IPP (Design Option 2)

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Crissal thrasher	Saltbush shrubland
Gray vireo	Saltbush shrubland
Vesper sparrow	Grassland
Bobolink	Grassland, herbaceous wetland
Reptiles	
Banded Gila monster	Grassland
Corn snake	Grassland, greasewood flat, herbaceous wetland
Desert iguana	Saltbush shrubland
Long-nosed leopard lizard	Greasewood flat, saltbush shrubland
Midget faded rattlesnake	Greasewood flat, saltbush shrubland
Smooth greensnake	Grassland, greasewood flat, herbaceous wetland
Speckled rattlesnake	Saltbush shrubland
Utah milk snake	Grassland, greasewood flat, herbaceous wetland, saltbush shrubland
Western banded gecko	Saltbush shrubland
Western threadsnake (blindsnake)	Grassland, greasewood flat, herbaceous wetland, saltbush shrubland
Terrestrial Invertebrates	
Eureka mountainsnail	Grassland, saltbush shrubland
Great Basin silverspot (Nokomis fritillary) butterfly	Herbaceous wetland
Grey's silverspot (Grey's fritillary) butterfly	Grassland
Honey Lake blue butterfly	Saltbush shrubland
MacNeill sooty wing skipper (MacNeill saltbush sootywing) butterfly	Herbaceous wetland, saltbush shrubland
Mono Basin skipper (Railroad Valley skipper) butterfly	Grassland
Rice's blue butterfly	Saltbush shrubland
White River wood nymph butterfly	Grassland, herbaceous wetland

Southern Substation located near IPP (Design Option 3)

The Southern Substation located near IPP (Design Option 3) is sited entirely within the Southern Terminal located near IPP (Design Option 2) area. BLM sensitive and state-protected species that may occur at the Southern Substation located near IPP (Design Option 3) are presented in **Table 3.8-18**. The types of direct and indirect impacts of construction and operation of the Southern Substation located near IPP (Design Option 3) to the 60 BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife from Terminal Construction and Operation. Estimates of impacts to habitat types utilized by these species as a result of the construction and operation of the Southern Substation located near IPP (Design Option 3) are presented in Section 3.5 Vegetation. No special status raptor nests are documented within the Southern Substation located near IPP (Design Option 3) siting area. Species-specific mitigation measures are discussed below.

3.8.6.2 Impacts to Special Status Wildlife from Design Options

Design Option 2 –DC from Wyoming to IPP; AC from IPP to Marketplace Hub

Because the implementation of Design Option 2 would utilize the same alternative routes and construction techniques as the proposed Project, impacts to special status wildlife from construction and operation of Design Option 2 would be similar to those discussed under the alternative routes. Differences between Design Option 2 and the proposed Project include the location of the Southern Terminal and ground electrode system, as well as the addition of a series compensation station midway between IPP and Marketplace. The Southern Terminal would be located near IPP in Utah instead of near Marketplace in Nevada, and the ground electrode system would be within 50 miles of IPP.

Table 3.8-19 provides a summary of impacts associated with Design Option 2. Impacts from Design Option 2 facilities would be similar to impacts described in Section 3.8.6.1, Impacts from Terminal Construction and Operation, and Section 3.8.6.2, Impacts Common to all Alternative Routes and Associated Components. Greater sage-grouse and Utah prairie dogs do not occur in the area proposed for these facilities. The same design features, BMPs, and mitigation measure listed for the Northern Terminal would be implemented to minimize impacts resulting from Design Option 2.

Table 3.8-19 Summary of Design Option 2 Impact Parameters for Vegetation Communities Associated with Special Status Wildlife Species

Design Option 2 Converter/Substation
• Approximately 181 acres of total impacts to vegetation communities associated with special status species would occur. • Approximately 18 acres of construction and 11 acres of operation impacts to grasslands would occur. • Approximately 17 acres of construction and 11 acres of operation impacts to greasewood flats would occur. • Approximately 7 acres of construction and 4 acres of operation impacts to herbaceous wetlands would occur. • Approximately 139 acres of construction and 87 acres of operation impacts to saltbush shrublands would occur.

Design Option 3 Phased Build Out

Because the implementation of Design Option 3 would utilize the same alternative routes, facilities, and construction techniques as the proposed Project, albeit in a phased approach, impacts to special status wildlife from construction and operation of Design Option 3 would be the same as those discussed under the alternative routes.

3.8.6.3 Impacts Common to All Alternative Routes and Associated Components

Potential impacts to special status wildlife species from construction, operation, and maintenance of the proposed Project include habitat loss and fragmentation; displacement of wildlife during construction, operation, and maintenance; avoidance of the 2-mile transmission line corridor during construction and operation; cumulative effects from human disturbance and energy development; and mortality.

Habitat disturbance can be further categorized into construction and operation impacts. Construction impacts account for all disturbances caused during construction of the proposed Project, including vegetation removal, increased human activity, and increased noise levels. Operation impacts are defined as impacts that remain after construction-related reclamation efforts are complete and will last as long as the Project is in operation. Examples of operation impacts include habitat disturbance in areas where facilities will be sited, which would not be reclaimed until after the end of the Project's design life (decommissioning). Impacts to habitat can be further categorized as direct and indirect. Direct impacts to habitat result when habitat is destroyed or is converted to a form that is unsuitable for the affected species. The primary potential indirect impact to habitat occurs when wildlife avoids or is displaced from otherwise suitable habitat as a result of increased noise and human activity.

The primary impacts associated with operation of transmission lines and associated facilities are mortalities as a consequence of electrocution or collision with Project components. Electrocution is primarily associated with smaller (i.e., 100-kV or less) transmission lines, due to the size of towers and spacing of the wires (APLIC 2006). For the proposed Project, the 34.5-kV lines associated with the ground electrode beds are the only components with electrocution potential. The potential for collision impacts is influenced by species characteristics and environmental characteristics. The manner in which birds utilize habitats near transmission lines affects the probability of collisions (APLIC 1994). Other potential impacts include avoidance of otherwise suitable habitat due to the presence of a transmission line, and the increased noise and human presence that are the result of regular maintenance activities.

In addition, raptors commonly perch on transmission structures to hunt. Increased predation on special status species, such as greater sage-grouse, Wyoming pocket gopher, white-tailed prairie dog, and pygmy rabbit, could occur as a result of project operation. Increased predation by corvids and other predatory and scavenging species, which tend to accompany human presence, also may increase.

Construction Impacts

The types of direct and indirect impacts of construction activities to special status wildlife species are generally the same as discussed in Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associated Components.

Operation Impacts

The types of direct and indirect impacts of operation activities to special status wildlife species are generally the same as discussed in Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associated Components.

3.8.6.4 Region I

Tables 3.8-20, **3.8-21**, **3.8-22**, **3.8-23**, and **3.8-24** provide a tabulation of estimated impacts associated with the alternative routes and other Project components in Region I. Key impact parameters that relate to the impact discussion in Section 3.8.6.2, Impacts to Special Status Species Common to All Alternative Routes and Associated Components, and specific differences by alternative are discussed below. No national forests are crossed by the Project in Region I.

Table 3.8-20 Summary of Region I Alternative Route Impact Parameters for Greater Sage-grouse Leks

Parameter	Alternative I-A	Alternative I-B	Alternative I-C	Alternative I-D
Wyoming				
Number of occupied leks within 0.5 mile of reference lines in Wyoming	0	0	1	3
Number of occupied leks within 1 mile of reference lines in Wyoming	9	9	12	14
Number of occupied leks within 2 miles of reference lines in Wyoming	16	17	24	23
Number of occupied leks within 3 miles of reference lines in Wyoming	21	21	28	28
Number of occupied leks within 4 miles of reference lines in Wyoming	28	28	38	35
Average distance of leks within 4 miles of reference lines in Wyoming (miles)	2.38	2.15	2.11	2.32

Table 3.8-20 Summary of Region I Alternative Route Impact Parameters for Greater Sage-grouse Leks

Parameter	Alternative I-A	Alternative I-B	Alternative I-C	Alternative I-D
Number of occupied leks within 11 miles of reference lines in Wyoming	99	95	131	121
Colorado				
Number of occupied leks within 0.5 mile of reference lines in Colorado	3	3	0	3
Number of occupied leks within 1 mile of reference lines in Colorado	8	7	4	7
Number of occupied leks within 2 miles of reference lines in Colorado	11	10	8	10
Number of occupied leks within 3 miles of reference lines in Colorado	13	11	14	11
Number of occupied leks within 4 miles of reference lines in Colorado	13	12	21	12
Average distance of leks within 4 miles of reference line in Colorado (miles)	1.63	1.68	2.33	1.68
Number of occupied leks within 11 miles of reference lines in Colorado	38	42	65	44
Region I Total				
Total number of occupied leks within 0.5 miles of reference lines Region I	3	3	1	6
Total number of occupied leks within 1 mile of reference lines Region I	17	16	16	21
Total number of occupied leks within 2 miles of reference lines Region I	27	27	32	33
Total number of occupied leks within 3 miles of reference lines Region I	34	32	42	39
Total number of occupied leks within 4 miles of reference lines Region I	41	40	59	47
Average distance of leks within 4 miles of reference lines in Region I (miles)	2.14	2.01	2.19	2.16
Number of occupied leks within 11 miles of reference lines in Region I	137	137	196	165
Length of transmission line in miles (habitat fragmentation and collision potential)[1]	155	159	186	171

Table 3.8-21 Summary of Region I Alternative Route Impact Parameters for Greater Sage-grouse Habitat

Parameter	Alternative I-A			Alternative I-B			Alternative I-C			Alternative I-D		
Habitat Disturbance	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Impacts to Wyoming core population areas (acres)	170	42	18,444	170	42	18,444	235	55	24,872	170	42	18,444
Percentage of existing habitat impacted within the Region I greater sage-grouse analysis area	0.02	<0.01	2.59	0.02	<0.01	2.59	0.03	0.01	3.49	0.02	<0.01	2.59
Impacts to Colorado Preliminary Priority Habitat (acres)	517	144	47,340	381	97	45,416	837	220	80,816	381	97	45,416
Percentage of existing habitat impacted within the Region I greater sage-grouse analysis area	0.04	0.01	3.75	0.03	<0.01	3.60	0.07	0.02	6.41	0.03	<0.01	3.60
Impacts to Colorado General Habitat (acres)	346	93	35,200	439	112	59,620	539	141	50,038	439	112	59,620
Percentage of existing habitat impacted within the Region I greater sage-grouse analysis area	0.04	0.01	4.39	0.05	0.01	7.44	0.07	0.02	6.25	0.05	0.01	7.44

[1] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Table 3.8-22 Summary of Region I Greater Sage-grouse Attendance at Leks within 4 Miles of the Reference Line

Parameter[1]	Alternative I-A	Alternative I-B	Alternative I-C	Alternative I-D
Wyoming				
Number of active leks	28	28	38	35
Peak male attendance combined 2003 – 2012[2]	653	667	815	856
Minimum male attendance combined 2003 – 2012[3]	98	94	112	117
3-year average lek attendance[1]	11.51	12.23	10.23	10.99
Average attendance across all leks[4]	12.73	13.38	12.92	12.92
Total attendance 2003 – 2012[1]	2,560	2,676	3,425	3,361
Number of leks with no attendance 2008 – 2012[5]	6	6	12	9
Survey effort[6] (percent)	71.8	71.4	69.7	74.3
Colorado				
Number of active leks	13	12	21	12
Peak male attendance combined 2003 – 2012[2]	231	247	519	247
Minimum male attendance combined 2003 – 2012[3]	7	7	69	7
3-year average lek attendance	19.08	15.92	31.66	15.92
Average attendance across all leks[4]	7.28	8.08	13.51	8.08
Total attendance 2003 – 2012	925	946	2594	946
Number of leks with no attendance 2008 – 2012[5]	5	5	6	5
Survey effort[6] (percent)	97.7	97.5	91.4	97.5

[1] Lek count numbers are male birds only, most recent data used.

[2] Sum of the 10-year peak annual counts from all leks within 4 miles combined (2003-2012).

[3] Sum of the 10-year minimum count from all leks within 4 miles combined (2003-2012).

[4] Total males observed/Number of surveys.

[5] Although leks are classified as active or occupied, surveys have not observed male attendance over past 5 years.

[6] Number of surveys/Number of potential surveys (10 years x 28 leks = 280 potential surveys).

Table 3.8-23 Summary of Region I Greater Sage-grouse Lek Visibility by Alternative Route

Parameter	Alternative I-A	Alternative I-B	Alternative I-C	Alterative I-D
Wyoming				
Number of visible occupied leks within 0.5 mile of reference lines[1]	0	0	0	3
Number of visible occupied leks within 1 mile of reference lines	7	8	10	12
Number of visible occupied leks within 2 miles of reference lines	11	14	20	18
Number of visible occupied leks within 3 miles of reference lines	17	20	26	22

Table 3.8-23 Summary of Region I Greater Sage-grouse Lek Visibility by Alternative Route

Parameter	Alternative I-A	Alternative I-B	Alternative I-C	Alterative I-D
Number of visible occupied leks within 4 miles of reference lines	28	28	36	35
Average distance of visible leks within 4 miles of reference lines	2.38	2.15	2.08	2.09
Colorado				
Number of visible occupied leks within 0.5 mile of reference lines	2	1	0	1
Number of visible occupied leks within 1 mile of reference lines	6	4	3	4
Number of visible occupied leks within 2 miles of reference lines	6	8	6	8
Number of visible occupied leks within 3 miles of reference lines	11	10	14	10
Number of visible occupied leks within 4 miles of reference lines	12	12	21	12
Average distance of visible leks within 4 miles of reference lines	1.63	1.69	2.33	1.69
Region I Total				
Total number of visible occupied leks within 0.5 mile of reference lines in Region I	2	1	0	4
Total number of visible occupied leks within 1 mile of reference lines in Region I	13	12	13	16
Total number of visible occupied leks within 2 miles of reference lines in Region I	17	22	26	26
Total number of visible occupied leks within 3 miles of reference lines in Region I	28	30	40	32
Total number of visible occupied leks within 4 miles of reference lines in Region I	40	40	57	47
Average distance of visible leks within 4 miles of reference lines in Region I	2.14	2.01	2.17	2.16
Length of transmission line in miles (habitat fragmentation and collision potential)[2]	155	159	186	171

[1] Occupied habitat includes brood-rearing habitat and wintering habitat.

[2] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

The number of occupied greater sage-grouse leks visible from the reference lines and the average distance of occupied leks visible from the reference lines in Region I are presented in **Table 3.8-23**, Summary of Region I Alternate Route Impact Parameters (Visibility) for Greater Sage-grouse. The greatest number of occupied leks visible from the reference line, 57, would be impacted by Alternative I-C. However, the number of occupied leks and the average distance of occupied leks from the reference line are generally similar for all of the Alternative Routes in Region I. Occupied leks visible from within 4 miles of the reference line would potentially be at greater risk of predation by perching raptors. However, implementation of **SSWS-5** would limit raptor and corvid predation and impacts to greater sage-grouse

visible from the reference line. Thus, impacts associated with these occupied leks are expected to be low magnitude.

Explanation of Visibility Impact Analysis for Occupied Greater Sage-grouse Leks

The numbers of occupied greater sage-grouse leks visible from the reference lines, as presented in **Table 3.8-23**, were based on line of sight calculations, which accounted for a number of variables. The vertical distance above the reference line by which by raptors and corvids may perch on transmission tower structures was based on the assumption that raptors and corvids would perch an average of 150 vertical feet above ground surface on tower structures as well as an assumed raptor height of 2 feet. Thus, visibility of occupied greater sage-grouse leks was based on line of sight from 152 vertical feet above the reference line. Visibility calculations also were based on topographical variation within 4 miles of the reference line that would affect visibility of greater sage-grouse leks from potential perches 152 vertical feet above the reference line. For example, a greater sage-grouse lek in an area with flat terrain might be visible from 1 mile away, whereas a lek in an area with hilly or mountainous terrain may not be visible from 1 mile away due to an obstruction to line of sight. Due to a lack of data on vegetative structure and height within 4 miles of the reference line, vegetative height was not figured into line of sight calculations.

Alternative I-A (Applicant Proposed)

Federally Listed and Candidate Species

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region I include two federally listed and two candidate species, and 64 BLM sensitive and state-protected species. Species-specific impact discussions are presented below. No suitable habitat for the Canada lynx occurs along Alternative I-A, therefore impacts are not expected to occur to this species. The whooping crane, interior least tern, and piping plover do not occur in Region I; however, they are discussed in terms of potential depletions in the Platte River basin. **Table 3.8-24** provides a summary of special status raptor nests within 1 mile of the reference line in Region I. Section 3.7.6.3 presents a description of existing disturbance along Alternative I-A.

Greater Sage-grouse (Candidate)

Greater sage-grouse may be found along more that 95 percent of the Alternative I-A route in Carbon and Sweetwater counties, Wyoming and Moffat County, Colorado. Moffat County, Colorado contains the largest population of greater sage-grouse in Colorado. The WGFD and the CPW have designated “core population areas” within their respective states. These areas contain a majority of the breeding population of greater sage-grouse in a specific area and are considered vital to maintaining greater sage-grouse populations.

As presented in **Table 3.8-20**, a total of 41 occupied/active leks occur within 4 miles of Alternative I-A (i.e., 28 occupied leks in Wyoming and 13 active leks in Colorado). Occupied/active leks are those observed to have documented activity in the past 10 years. In addition, Alternative I-A crosses a variety of greater sage-grouse habitats in Wyoming and Colorado (**Figure 3.8-1**).

Impacts to greater sage-grouse from the construction and operation of the proposed Project can be grouped into two main categories, direct and indirect. Direct impacts include habitat loss, disturbance from construction activities resulting in temporary displacement of individuals, and mortality when greater sage-grouse collide with transmission lines or their supporting infrastructure, such as guy wires. Indirect impacts may include avoidance as a result of increased predation from perching raptors and human activity during construction and operation.

Table 3.8-24 Special Status Raptor Nests within 1 Mile of the reference Line in Region I[1]

Species	Alternative I-A	Alternative I-B	Alternative I-C	Alternative I-D	Tuttle Easement Micro-siting Option 1	Tuttle Easement Micro-siting Option 2	Tuttle Easement Micro-siting Option 3	Tuttle Easement Micro-siting Comparable Portion of Alternative I-D	Mexican Flats alternative Connector	Baggs Alternative Connector	Fivemile Point North Alternative Connector	Fivemile Point South Alternative Connector
Bald eagle	2	0	0	0	0	0	0	0	0	0	0	0
Ferruginous hawk	102	97	145	91	0	0	0	0	6	2	8	2
Golden eagle	24	35	66	34	12	12	12	12	4	9	4	0
Prairie falcon	3	25	7	6	1	1	1	1	0	0	0	0
Swainson's hawk	2	1	5	1	0	0	0	0	0	0	0	0
Burrowing owl	7	7	5	7	0	0	0	0	1	0	0	0
Unknown raptor species	47	60	102	69	35	35	35	33	3	31	6	1
Totals	187	225	330	208	48	48	48	46	14	42	18	3

[1] Nests of raptor species, which are not classified as special status, are tabulated in Section 3.7, Wildlife. Nests of unknown raptor species are tabulated in both Sections 3.7 and 3.8 because nests may have been utilized by either special status raptors or non-special status raptors.

Sources: BLM Vernal FO 2009, 2011; BLM Rawlins FO 2009, 2010; BLM Rock Springs FO 2009; BLM Cedar City FO 2010; BLM Price FO 2008; BLM Ely FO 2007; BLM Little Snake FO 2011; EPG 2012, Manti-La Sal National Forest 2012; Ashley National Forest 2010; Uintah National Forest 2011; CDOW, BLM, USFS cooperative dataset 2009; NDOW 2012; AECOM 2012.

Construction Impacts

Construction activities may result in permanent habitat loss, fragmentation, and the temporary displacement of greater sage-grouse from construction areas due to noise and increased human activity. The disturbance and degradation of sagebrush habitat can reduce the carrying capacity of local breeding populations of greater sage-grouse, especially in areas where high quality sagebrush habitat is limited (Braun 1998; Connelly et al. 2000). Alternatively, greater sage-grouse may simply avoid otherwise suitable habitat as the density of roads and transmission lines increases (Holloran 2005). Greater sage-grouse may avoid previously occupied areas due to noise and disturbance from vehicle traffic (Lyon and Anderson 2003). Depending on the season, displacement could impact birds on leks, nesting and brood-rearing hens, and birds on winter ranges. Greater sage-grouse that are displaced by construction activities might move to areas with lower quality habitat, resulting in an overall effect of reducing survival or breeding success. Fragmentation of sagebrush habitats also may interrupt the exchange of genetic material between distinct isolated areas of suitable breeding habitat. Additional impacts from transmission lines and associated access roads (e.g., two-tracks, mowed or cleared access ways) may include direct mortality of nesting hens and chicks, facilitation of travel ways for predators, and the spread of invasive and noxious plant species (Gelbard and Belknap 2003; Science Applications International Corporation [SAIC] 2001). Secondary roads that are used more often to access construction areas also may result in traffic that can negatively impact greater sage-grouse through increased noise or vehicular and pedestrian harassment. New secondary access roads (i.e., two-tracks) that are not gated to restrict public access or reclaimed immediately following construction also may provide increased human access to previously inaccessible greater sage-grouse habitats, allowing for increased pedestrian harassment at leks sites and increased hunting pressure. Ground disturbance associated with secondary road construction and use also increases the potential for noxious weed invasion, and vehicles driving these roads may increase the possibility of igniting fires (Leu et al. 2008).

The potential for greater sage-grouse mortality from construction equipment would likely be very low. Equipment used in transmission line construction generally moves at a slow rate or is stationary for long periods (e.g., cranes). The risk of direct mortality to greater sage-grouse from construction is most likely limited to nesting hens or young chicks that have limited mobility.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas for greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.) and implement seasonal timing restrictions and protection buffers in accordance with BLM IM 2010-012, BLM IM 2012-043, EO 2011-5, individual state greater sage-grouse management/conservation plans, BLM RMPs, and forest managements plans. Adherence to these regulations and guidelines would reduce impacts to greater sage-grouse during construction. In addition, implementation of TWE-26 and **VEG-1** would aid in reclamation activities and restoring communities (i.e., sagebrush shrubland) to native ecosystems, especially in areas where reclamation is difficult. Implementation of **NX-1** and **NX-2** would minimize and mitigate impacts associated with the potential introduction or spread of noxious weeds and invasive plant species.

Operation Impacts

In addition to potential impacts to greater sage-grouse from construction activities, operation-related impacts can include the following:

1. Increased predation on and harassment of greater sage-grouse from increased available perch locations for raptors and corvids.
2. Potential avoidance of tall structures that provide perching opportunities for raptors and corvids.
3. Increased fragmentation and reduction of habitat quality of otherwise suitable greater sage-grouse habitat.

4. Increased mortalities as a result of maintenance activities along new or improved access roads (e.g., two-tracks, mowed or cleared access ways), which could result in vehicle collisions and nest destruction. New or improved secondary access roads also may lead to increased public use of roads that were previously inaccessible if not properly gated or signed to restrict access. This may lead to increased greater sage-grouse disturbance as a result of recreation activities (e.g., four-wheeling, hunting, bird watching, etc.).

Avian mortality from collisions with transmission lines is well documented (Brown and Drewien 1995). While greater sage-grouse are predominantly a ground-dwelling species, the risk for collision during flight is heavily dependent upon transmission line sizes (e.g., 34.5-kV vs. 600-kV) and locations, such as locations between loafing and feeding areas or along migration routes. Highest collision probabilities appear to occur where greater sage-grouse typically fly between foraging and loafing habitats bisected with lower voltage overhead lines (SAIC 2001).

Factors that influence the risk of collision to individual birds as they encounter transmission lines are varied and include flight characteristics, previous experience with transmission lines (typically a function of the bird's age), location of the transmission line, weather, and transmission line structural characteristics (APLIC 1994). Past research has shown that the static wire, also referred to as the shield or groundwire, has posed the greatest collision danger to birds (APLIC 1994; Faanes 1987). Most of these collisions occur with static wires when birds increased their altitude in apparent attempts to avoid conductor wires. Birds maneuvering to avoid the conductor wires actually increased collision risk, and in the absence of static wires most collisions could have been avoided. For the proposed Project, static wires on the larger (e.g., 500-kV and 600-kV) transmission lines are typically positioned at the top of the structures and, therefore, pose less of a collision threat to low-flying greater sage-grouse. The greatest collision risks to greater sage-grouse from the proposed Project are the guy wires associated with each tower. The guy wires support the towers and are typically angled to the anchor point. Therefore, bird species, such as greater sage-grouse, may have a greater potential for collision risk because of the smaller wing to body ratio (i.e., heavy wing-load), resulting in lower flight heights and a greater occurrence of takeoffs and landings crossing guy wire heights. Because of their lack of flying efficiency, species such as the greater sage-grouse may potentially be more likely to collide with the guy wires unless the wires are properly marked or even eliminated in high use habitat areas (i.e., using self-supporting steel lattice structures instead of guyed lattice structures).

Documentation of direct mortality of greater sage-grouse resulting from collisions with transmission lines is limited. One study in Idaho showed that a substantial proportion of annual mortality can be caused by transmission line collisions. Beck et al. (2006) monitored survival of 15 radio-collared juvenile greater sage-grouse in the Medicine Lodge area of Clark County and 43 juvenile greater sage-grouse in the Table Butte area of Clark and Jefferson Counties, Idaho in 1997 and 1998. Although all mortality documented in the Medicine Lodge area was attributed to predation, 33 percent of the juvenile mortality (two of the six fatalities) in the Table Butte area was attributed to collisions with transmission lines. The actual occurrence of greater sage-grouse collisions with transmission lines is difficult to evaluate and juvenile mortality in the Table Butte area may have been more of a function of available habitat and the actual location of the transmission line rather than the transmission line design itself (i.e., transmission line was not sited properly to avoid important habitats). In addition, a majority of transmission lines are located in remote areas with little human presence and dead birds are often picked up by scavengers before humans are able to find and report them; therefore, reported losses must be considered a superficial measure of its actual collision mortality (Faanes 1987; Longridge 1986; Thompson 1978).

Avian predators, particularly raptors and corvids, are attracted to overhead utility lines because they provide perches for various activities, including hunting (APLIC 2006). Transmission poles increase a raptor's range of vision, allow for greater speed during attacks on prey, and serve as territorial markers (APLIC 2006; Manville 2002; Steenhof et al. 1993). Most research on transmission lines and raptor and corvid populations has documented a positive relationship between transmission lines and increased perches and nest sites. Although a direct correlation between transmission lines and increased predation

risks for greater sage-grouse has not been documented, greater sage-grouse may avoid transmission lines due to increased predation risk (Lammers and Collopy 2007). It also is important to note that in some regions of the U.S., greater sage-grouse are an important food item for raptor species (i.e., golden eagles). This is especially true when other prey populations are exhibiting down cycles (e.g., black-tailed jackrabbit, white-tailed prairie dog, etc.). Golden eagles follow greater sage-grouse during their seasonal migrations, and numerous researchers have documented golden eagle predation on greater sage-grouse (Gibson and Bachman 1992; Schroeder et al. 1999). Golden eagle predation of male birds at leks can be substantial in certain areas, especially if other prey populations are low. Golden eagles often fly over and attack birds on leks, disrupting lek behaviors and scattering birds (Hartzler 1974; Jenni and Hartzler 1978). Other documented avian predators of greater sage-grouse or their nests include black-billed magpie, common raven, ferruginous hawk, red-tailed hawk, rough-legged hawk, Swainson's hawk, gyrfalcon, and northern goshawk (Schroeder et al. 1999). Recent research conducted for the Sierra Pacific Power Company's Falcon-Gondor transmission line suggests that greater sage-grouse nests with more total shrub cover had a greater probability of success than nests with less cover, regardless of distance from the transmission line (Blomberg et al. 2010). Kolada et al. (2009) reported higher greater sage-grouse nest success in California as shrub cover increased. Therefore, this research suggests that the risk of increased raptor and corvid predation on greater sage-grouse may be mitigated by maintaining and restoring sagebrush canopy cover, particularly within important nesting and brood-rearing habitat.

In addition to direct mortality from collisions and increased predation on greater sage-grouse by raptors and corvids, transmission lines may cause greater sage-grouse to abandon otherwise suitable habitat or disrupt movement patterns among seasonal habitats (SAIC 2001). Transmission lines might also serve as barriers to movement as a result of avoidance behavior (Desholm and Kahlert 2005; Robel et al. 2004). Greater sage-grouse and other prairie gallinaceous birds have evolved in habitat devoid of tall structures. It is unclear how these species react to the height of these structures. Studies completed on greater and lesser prairie-chickens have suggested avoidance concerns because of the height of transmission lines. This avoidance may create an unintentional buffer along the transmission lines and roads of at least 328 feet in width (and probably more) for prairie-chickens. There also appears to be avoidance in the placement of nests and leks (Pruett et al. 2009a,b). These studies showed that greater and lesser prairie-chickens were not only more likely to avoid transmissions lines, but also less likely to nest, cross, or maintain a home range near transmission lines (Pruett et al. 2009a,b). The movement of the prairie-chickens was shown to be altered by the transmission lines, creating habitat fragmentation (Pruett et al. 2009a,b).

In northern California, transmission lines have had a negative impact on lek attendance and strutting activity has ceased on all leks within one mile of one particular transmission line, while other transmission lines located in greater sage-grouse habitat also are believed to be impacting populations (Bi-State Local Planning Group [Bi-State Plan] 2004). A study in Washington State found that 19 of 20 leks (95 percent) documented within five miles of 500-kV transmission lines are now vacant, while the vacancy rate for leks further than 5 miles is 59 percent (22 of 37 leks; Washington Department of Fish and Wildlife [WDFW] 2008). In Oregon, a 250-kV transmission line was constructed within 0.5 miles of a greater sage-grouse lek that had an average attendance of 41 males during the period 1949 to 1980. After the transmission line was constructed from 1981 to 1982, an average of only five males per lek was counted between 1982 and 2005, with no birds being counted on the lek since 2006 (Oregon Department of Fish and Wildlife [ODFW] 2009). The cause of this decline or perhaps extirpation cannot be directly linked to the transmission line, but it is likely part of a cumulative effect from development in the area. It also was noted that the Oregon statewide greater sage-grouse population from 1980 to 1988 (the period when the lek declined) reached relatively high levels.

A majority of literature on transmission line impacts was derived from studies that looked at several different facilities associated with energy development (e.g., oil and gas well pads, access roads, compressor stations, transmission lines, etc.). Additionally, due to very limited data on collision mortality of greater sage-grouse from transmission lines, it cannot be determined if collision rates vary by capacity of transmission lines. Based on the lack of specific research on transmission lines and ambiguity associated

with results of many of these studies, it also is not possible to differentiate the relative magnitude of indirect impacts based on capacity of the transmission line. To the extent that increased predation and harassment caused by raptors and corvids may influence greater sage-grouse use of adjacent habitats, there is probably little difference based on capacity of transmission lines, as all transmission lines provide opportunities for raptors and corvids to perch. Likewise, ground disturbance would occur regardless of transmission line capacity, and therefore all transmission lines would increase the potential for establishment of noxious weeds and lead to increased human activity for maintenance purposes. If the primary impact to greater sage-grouse is avoidance of tall structures, however, then it is likely that shorter towers used on 34.5-kV versus 500-kV lines would have less impact, but this cannot be confirmed based on available literature. It also is not known if smaller capacity lines result in less "behavioral" habitat fragmentation (i.e., fragmentation resulting from greater sage-grouse being more reluctant to cross 500-kV lines than 345-kV lines.

***SSWS-5**: To reduce impacts to greater sage-grouse from operation of the proposed Project, design features specific to greater sage-grouse would be implemented.*

- *To limit raptor and corvid predation on greater sage-grouse, TWE would be required to construct anti-perching devices on segments of the proposed Project near high quality greater sage-grouse habitat (e.g., within 4 miles of occupied/active leks, within core areas, within PPH, etc.) in consultation with the BLM, Western, and applicable state wildlife agencies.*
- *To limit the potential for greater sage-grouse collisions with guy wires, TWE would be required to outfit guy wires with agency approved bird diverters within high quality greater sage-grouse habitat, or alternatively, to construct alternative structures such as self-supporting steel lattice structures or self-supporting tubular H-frame structures instead of guyed lattice structures within greater sage-grouse habitat.*

Effectiveness: **SSWS-5** would help minimize the potential for increased predation on greater sage-grouse by limiting raptor and corvid perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors and corvids on greater sage-grouse. Marking guy wires would increase the visibility of guy wires and would reduce the potential for collisions, especially in areas between important roosting and foraging habitat. A study in South Carolina involving two 115-kV transmission lines showed that the bird collision rate was 53 percent lower for marked transmission lines versus unmarked transmission lines (Savereno et al. 1996). The study concluded that aviation markers were effective at increasing the transmission line visibility and reducing bird collisions. Alternatively, constructing alternative structures such as self-supporting steel lattice structures instead of guyed lattice structures would eliminate the collision potential from guy wires to greater sage-grouse.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). In addition, TWE has taken into account greater sage-grouse habitat (e.g., lek locations, core areas, etc.) during the design phase of the Project and routed the transmission line around sensitive habitat types, to the extent possible. **SSWS-5** would require TWE to construct anti-perching devices and mark guy wires or use alternative structures in high quality greater sage-grouse habitat. These features would help reduce disturbance to sensitive habitat types, reduce the potential for predation on greater sage-grouse by raptors and corvids, and reduce the collision potential from guy wires. Nonetheless, given the amount of important greater sage-grouse habitat crossed by the proposed Project under Alternative I-A in Wyoming and Colorado (**Table 3.8-21**), mortality from operation of the proposed Project may occur.

Offsite Compensatory Mitigation

In an effort to comply with BLM IM 2012-043 guidance, TWE has developed a framework for impact analysis that is focused on the listing factors considered by the USFWS for evaluating future listing and

protection of greater sage-grouse under the ESA. As part of the framework, consideration of compensation for both short-term and long-term direct and indirect loss of greater sage-grouse and its habitat will be included in the TWE Greater Sage-grouse Mitigation and Habitat Equivalency Analysis Plan. This framework is included in **Appendix G**. This plan will be completed upon the final assessment of the full range of impacts resulting from the construction, operation, and maintenance of the TWE project. Furthermore, the framework specifies the use of Habitat Equivalency Analysis (HEA), conducted by TWE, as a standardized basis for determining a one-to-one ratio for habitat services lost or mitigated. TWE intends to continue compliance with BLM IM 2012-043 through considering the implementation of both on-site and off-site compensatory mitigation measures developed during the HEA process.

Overview of Habitat Equivalency Analysis

The HEA is a process of quantifying interim and permanent habitat disturbance, measured as a loss of habitat services from pre-disturbance conditions, and scaling compensatory habitat requirements to those disturbances (Dunford et al. 2004; King 1997; Kohler and Dodge 2006; National Oceanic and Atmospheric Administration [NOAA] 2009, 2006). Habitat services are generally quantified using a metric that is representative of the functionality or quality of habitat (i.e., the ability of that habitat to provide wildlife "services" such as nest sites, forage, cover from predators, etc.). When wildlife habitat is the primary service of interest, areas with the highest habitat service levels are those areas with highest habitat quality. Interim (or short-term) habitat disturbances are those services that are absent during certain phases of the Project that would have been available if that disturbance had not occurred (e.g., temporary vegetation losses, temporary soil partitioning, temporary displacement of wildlife populations). Permanent (or long-term) habitat disturbances are those that remain after project construction and interim reclamation and recovery are complete (e.g., permanent vegetation loss, permanent loss of wildlife or fisheries populations, irrecoverable impacts to soils or water as a result of contamination). The benefits of applying HEA to the Project are that:

- The approach has been thoroughly evaluated and documented in scientific literature and has been tested in multiple court cases.
- It provides a quantitative analysis of direct and indirect impacts.
- It provides a standard framework for developing appropriate mitigation ratios.
- It is applicable to any ecosystem type where appropriate habitat service metrics can be defined.

Upon completion of the HEA, TWE will work with cooperating agencies and stakeholders to develop mitigation measures that can be used to compensate for the interim and permanent losses of habitat services resulting from project construction, operation, and maintenance. Mitigation measures likely to be considered include, but are not limited to:

1. Fence marking, modification, or removal – Fences would be marked, modified, or removed to reduce or remove threats to greater sage-grouse. Marking would be prioritized in areas near leks, in winter concentration areas, in known migration corridors, or in areas between known roosting and foraging habitats.
2. Sagebrush restoration or enhancement projects – Sagebrush restoration or enhancement projects might include seeding sagebrush and associated understory vegetation into previously disturbed or burned areas or transplanting already established sagebrush stems and seedlings into areas where sagebrush has been removed or thinned. Appropriate land management agency or landowner coordination would be important to ensure sagebrush enhancement activities support ongoing and future land use objectives.
3. Understory improvement projects – Understory habitat conditions could be improved by over-seeding existing greater sage-grouse habitats with appropriate forbs, grasses, or other desirable plant species; seeding previously disturbed areas with forbs and grasses to create a suitable mosaic of habitat for various life stages of greater sage-grouse; removing undesirable

non-native understory species; or improving residual cover of existing understory species to increase cover and improve nest success.

4. Conifer removal – In areas where conifers are encroaching into suitable greater sage-grouse habitat, conifer removal (specifically removal of pinyon pine and juniper) could be used to reduce habitat fragmentation and to restore previously unsuitable habitat.
5. Brood-rearing habitat improvement – During summer months, mesic habitats adjacent to appropriate cover are necessary for brood-rearing and summer use. In areas where these habitats have been removed, altered, or are not available for other reasons, habitat enhancements focused on restoring or creating mesic habitats could be used to improve brood-rearing conditions.
6. Conservation easements – Where possible, conservation easements could be used to provide long-term contractual protection of high-quality greater sage-grouse habitat, conservation efforts, and improvement projects. TWE's ability to acquire conservation easements would be dependent upon the willingness of private landowners to participate in a conservation program. Landowner coordination would be important to ensure that activities support ongoing and future land use objectives.

Whooping Crane (Endangered), Interior Least Tern (Endangered), Piping Plover (Threatened)

Construction, operation, and decommissioning impacts to the whooping crane, interior least tern, and piping plover under Alternative I-A are anticipated to be the same as discussed in Section 3.8.6.1, Impacts from Terminal Construction and Operation.

TWE has indicated that all water requirements for the Project will be met using existing water rights. Therefore, construction of Alternative I-A is anticipated to result in no new depletions within the Platte River basin, including the upper portion of the North Platte River and the downstream section of the Platte River Basin in Nebraska. Confirmation of this determination will be ultimately made by the Wyoming State Engineers Office (SEO). Therefore, downstream impacts to habitat for these three federally listed species would not occur and TWE would not be required to conduct Section 7 consultation with the USFWS or make a mitigation payment to the PRRIP.

Western Yellow-billed Cuckoo (Candidate)

Western yellow-billed cuckoos are extremely rare summer residents in western Wyoming and Colorado. The majority of suitable habitat for this species occurs along Alternative I-A, along the Yampa River in Moffat County, Colorado.

Alternative I-A would result in the construction and operation disturbance of 43 acres and 4 acres, respectively, of potentially suitable woody riparian and wetland habitat. These areas represent 0.09 percent and <0.01 percent, respectively, of available potential habitat within the Region I western yellow-billed cuckoo analysis area. Habitat loss is the primary threat to the western yellow-billed cuckoo (Floyd et al. 2005; Corman and Wise-Gervais 2005). Western yellow-billed cuckoos appear to require large tracts of contiguous habitat (UDWR 2005) and population declines across the western U.S. are primarily due to the loss of cottonwood riparian habitat. This loss is primarily a result of conversion to agriculture, dams and river flow management, bank protection, overgrazing, and competition from exotic plants such as tamarisk (Bennett and Keinath 2001). Western yellow-billed cuckoos are further threatened by their low population size, extreme population fluctuations, and patchy distribution (Bennett and Keinath 2001). Therefore, impacts to occupied habitat may have population level impacts if not properly mitigated (e.g., avoiding construction during the breeding season, etc.).

Additional indirect impacts, such as individual displacement and avoidance of preferred habitat, also would occur as a result of increased noise and human activity associated with construction during the breeding

season (March 15 to October 15). Improved access as a result of Project roads may further fragment suitable habitat and result in increased disturbance to the western yellow-billed cuckoo.

***SSWS-6**: To prevent impacts to the western yellow-billed cuckoo during the breeding season, TWE would avoid construction within potentially suitable habitat from March 15 to October 15, or, alternatively, would conduct breeding western yellow-billed cuckoo surveys and implement appropriate mitigation in coordination with the BLM, Western, USFWS, and applicable state wildlife agencies.*

Effectiveness: To minimize impacts to the western yellow-billed cuckoo during the breeding season, TWE also has committed to implement seasonal timing restrictions in applicable areas (TWE-32). More specifically, **SSWS-6** would require TWE to avoid habitat removal between March 15 and October 15 or, alternatively, to conduct western yellow-billed cuckoo surveys and implement appropriate mitigation in coordination with the BLM, Western, and state wildlife agencies.

Operation of Alternative I-A would incrementally increase the collision potential for western yellow-billed cuckoos as they move to and from nesting and foraging areas. Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associate Components presents details regarding collision impacts to migratory birds.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. Additionally, implementation of TWE-32 and **SSWS-6** would reduce impacts during the breeding season. Remaining impacts to nesting western yellow-billed cuckoos under Alternative I-A would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact, given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered, EXNE)

As discussed in Section 3.8.4.1, Federally Listed and Candidate Species, the black-footed ferret is directly associated with prairie dog colonies and requires active prairie dog colonies of suitable size and density to maintain viable population levels. Portions of Alternative I-A are located within a USFWS designated "non-essential experimental population area" (USFWS 1998a). This area encompasses portions of Sweetwater County, Wyoming, and all of Moffat County, Colorado and Uintah County, Utah. A NEP designation allows the USFWS considerable flexibility in managing reintroduced populations of endangered species. The ESA allows for treating NEP as "proposed species" under the Act (USFWS 1998b). However, according to the ESA Consultation Handbook (USFWS 1998c), "*a "non-essential experimental population" is not essential to the continued existence of the species*." Areas designated as NEP areas do not require black-footed ferret surveys, although the USFWS encourages project applicants to protect all white-tailed prairie dog towns for their value to the prairie ecosystem and the myriad of species that rely on them.

Between 2001 and 2006, 217 black-footed ferrets were released within the Wolf Creek Management Area (WCMA) along Alternative I-A in Moffat and Rio Blanco counties, Colorado (BLM 2008). This area encompasses approximately 52,000 acres at the lower reach of the Wolf Creek watershed and was chosen as a reintroduction site due to its sizeable white-tailed prairie dog population. In 2006, approximately 19,000 acres of active white-tailed prairie dog colonies were distributed throughout the WCMA. Survival rates of introduced black-footed ferrets within the WCMA have been observed to be lower than other reintroduction sites (BLM 2008) and in 2008, a plague outbreak was detected. Results of spotlight surveys in 2010 were limted to the detection of one male black-footed ferret and no documented successful reproductive pairs within the WCMA. As a result of limited survival success and the occurrence of the 2008 plague outbreak, it generally is agreed that black-footed ferrets no longer inhabit the WCMA (CPW 2011).

The following analysis focused primarily on white-tailed prairie dog colonies and complexes that occur under Alternative I-A in areas that may require surveys for black-footed ferrets (i.e., areas outside the NEP area; **Figure 3.8-2**).

If black-footed ferrets are present within the Region I black-footed ferret analysis area, both direct and indirect impacts may occur as a result of surface-disturbing activities associated with construction of the proposed Project. Direct impacts to black-footed ferrets as a result of surface disturbance to white-tailed prairie dog colonies (**Table 3.8-25**) would include habitat loss, habitat fragmentation, animal displacement, and direct mortality associated with crushing of prairie dog burrows and vehicle collisions. Habitat fragmentation limits the dispersal of individual prairie dogs and increases the density of individuals within each smaller colony (Johnson and Collinge 2004). Higher densities within colonies may lead to increased incidence of sylvatic plague or canine distemper in black-footed ferret populations. Disease outbreaks may lead to the direct loss of individuals or entire populations. Indirect impacts would include increased noise and human activity associated with both construction and maintenance during operation. Increased human activity during construction and operation, as well as increased public access, may increase the prevalence of domestic dogs in construction areas. The presence of domestic dogs and raccoons could expose ferrets in the Region I black-footed ferret analysis area to diseases that could exterminate an entire population.

In contrast to the impacts mentioned above, certain surface-disturbing activities (e.g., blading/grading vegetation for pads, roads, ancillary facilities) may actually improve white-tailed prairie dog potential habitat and therefore possibly benefit black-footed ferrets. Decreasing vegetation cover creates open areas suitable for white-tailed prairie dog colonization, while subsequent re-vegetation increases forage for white-tailed prairie dogs. As prairie dogs increase the colony size, black-footed ferret potential habitat is increased. Potential direct impacts to black-footed ferrets, if present, would include the construction and operation disturbance of approximately 150 acres and 42 acres, respectively, of potentially suitable habitat. These areas represent 0.06 percent and 0.02 percent, respectively, of potentially suitable habitat within the Region I black-footed ferret analysis area.

Impacts to black-footed ferrets, if present, from operation of Alternative I-A would include disturbance from increased noise and human activity associated with maintenance during operation. Further impacts to black-footed ferrets may include a reduction of prey populations resulting from increased perching opportunity for raptors and corvids. Increased human activity during operation may increase the prevalence of domestic dogs and raccoons in work areas. The presence of domestic dogs and raccoons could expose ferrets in the Region I black-footed ferret analysis area to canine distemper and sylvatic plague. Disease outbreaks may lead to the direct loss of individuals or entire populations.

Based on the USFWS Black-footed Ferret 1989 Survey Guidelines, habitat evaluation for black-footed ferrets would include all white-tailed prairie dog colonies or complexes that have a burrow density of eight burrows per acre or greater (USFWS 1989). In addition, pre-construction clearance surveys for black-footed ferrets may be required within white-tailed prairie dog colonies or complexes exceeding 200 acres in size that are located within 0.5 mile of Alternative I-A. If black-footed ferret surveys are required, consultation with the USFWS would be initiated prior to surveys being conducted. These surveys would take place no more than one year prior to construction activities. If black-footed ferrets are identified, no disturbance would occur within the white-tailed prairie dog complex and all Project-related activities in such colonies or complexes would be suspended immediately. The USFWS would be notified within 24 hours if a black-footed ferret or its sign was observed. If black-footed ferrets were detected, additional consultation with the USFWS would be required and the Project would be modified to avoid impacts to the species.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Table 3.8-25 Summary of Region I Alternative Route Impact Parameters for Federally Listed and Candidate Species

Species	Alternative I-A			Alternative I-B			Alternative I-C			Alternative I-D		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Black-footed ferret potential habitat (acres)	150	42	17,475	232	55	23,997	79	22	9,565	180	46	19,879
Percentage of existing habitat within the Region I black-footed ferret analysis area	0.06	0.02	6.83	0.09	0.02	9.37	0.03	<0.01	3.74	0.07	0.02	7.77
Greater Sage-grouse potential habitat (acres)	1,034	280	100,984	991	251	123,480	1,611	415	155,726	991	251	123,480
Percentage of existing habitat within the Region I greater sage-grouse analysis area	0.03	<0.01	3.32	0.03	<0.01	4.06	0.05	0.01	5.12	0.03	<0.01	4.06
Western yellow-billed cuckoo potential habitat (acres)	43	4	1,398	46	4	1,554	41	5	2,932	39	3	1,524
Percentage of existing habitat within the Region I western yellow-billed cuckoo analysis area	0.09	<0.01	2.92	0.10	<0.01	3.25	0.09	0.01	6.13	0.08	<0.01	3.18
Gray wolf potential habitat (acres)	5,125	507	205,758	5,205	477	227,030	5,575	531	208,800	5,597	511	245,592
Percentage of existing habitat within the Region I special status wildlife analysis area	0.10	0.01	4.11	0.10	<0.01	4.54	0.11	0.01	4.18	0.11	0.01	4.91

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The gray wolf is a habitat generalist and the species is rare throughout its range in the Rocky Mountain region. Habitat requirements primarily are related to the density of prey species in the area. The gray wolf potentially could utilize any habitat type present in Region I, except for heavily managed agricultural lands. If gray wolves are present within the Region I special status wildlife analysis area, both direct and indirect impacts may occur as a result of construction of the proposed Project. Direct impacts to gray wolves would include loss of foraging or denning habitat, habitat fragmentation, animal displacement (both wolf and prey species), and direct mortality from vehicle collisions.

Alternative I-A would result in the construction and operation disturbance of 5,125 acres and 507 acres, respectively, of potential gray wolf foraging and denning habitat, and the incremental increase of habitat fragmentation associated with vegetation removal. These areas represent 0.10 percent and 0.01 percent, respectively, of potential habitat within the Region I special status wildlife analysis area. Impacts would be more pronounced within occupied habitat. Habitat fragmentation disrupts the movements of large mammal prey species and foraging gray wolves. Indirect impacts would include increased noise and human activity associated with both construction and maintenance activities during operation. Indirect impacts would occur to 205,758 acres, which represent 4.11 percent of gray wolf potential habitat within the Region I special status wildlife analysis area. Further indirect impacts to the gray wolf may include a reduction or change in distribution of large mammal populations. Impacts to the gray wolf under Alternative I-A would be limited primarily to habitat loss and fragmentation.

A summary of habitat impacts to federally listed and candidate species in Region I is found in **Table 3.8-25**.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur Region I are presented in **Table 3.8-26**. The types of direct and indirect impacts from construction and operation of Alternative I-A to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative I-A (e.g., sagebrush shrubland, grassland, and saltbush shrubland) are more likely to be impacted. Impacts to habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM and applicable state wildlife agencies.

Implementation of **SSWS-2** and **SSWS-3** under Alternative I-A would reduce impacts to pygmy rabbits and Wyoming pocket gophers by identifying suitable habitat and implementing appropriate mitigation measures, based on survey results. Additionally, TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many BLM sensitive and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative I-A, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance and would vary by habitat type. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

Table 3.8-26 BLM Sensitive and State-protected Species Potentially Occurring in Region I

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals – Bats	
Big brown bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, coniferous forest, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
California myotis	Aspen forest and woodland, coniferous forest, greasewood flat, herbaceous wetland, montane shrubland, open water, pinyon/juniper, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Hoary bat	Agricultural land, aspen forest and woodland, coniferous forest, grassland, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, riparian, sagebrush shrubland, woody riparian and wetlands
Long-eared myotis	Agricultural land, aspen forest and woodland, cliff and canyon, coniferous forest, greasewood flat, herbaceous wetland, montane shrubland, open water, pinyon/juniper, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Long-legged myotis	Aspen forest and woodland, coniferous forest, herbaceous wetland, montane shrubland, open water, pinyon/juniper, riparian, saltbush shrubland, woody riparian and wetlands
Pallid bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, coniferous forest, grassland, greasewood flat, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Silver-haired bat	Agricultural land, aspen forest and woodland, coniferous forest, greasewood flat, herbaceous wetland, open water, pinyon/juniper, riparian, sagebrush shrubland, woody riparian and wetlands
Spotted bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, cliff and canyon, coniferous forest, grassland, greasewood flat, herbaceous wetland, montane grassland, open water, pinyon/juniper, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Townsend's (Western) big-eared bat	Aspen forest and woodland, coniferous forest, greasewood flat, herbaceous wetland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Western pipistrelle	Aspen forest and woodland, cliff and canyon, coniferous forest, herbaceous wetland, open water, pinyon/juniper, riparian, saltbush shrubland
Western red bat	Agricultural land, deciduous forest, herbaceous wetland, open water, riparian, woody riparian and wetlands
Western small-footed myotis	Barren/sparsely vegetated, cliff and canyon, coniferous forest, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, riparian, woody riparian and wetlands
Yuma myotis	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, cliff and canyon, deciduous forest, grassland, greasewood flat, herbaceous wetland, montane shrubland, open water, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Mammals – Other	
Fisher	Aspen forest and woodland, coniferous forest
Idaho pocket gopher	Grassland, montane grassland, montane shrubland, sagebrush shrubland
Pygmy rabbit	Sagebrush shrubland
River otter	Open water, riparian, woody riparian and wetlands
Rocky Mountain bighorn sheep	Cliff and canyon, coniferous forest, montane grassland, montane shrubland
Swift fox	Agricultural land, barren/sparsely vegetated, grassland, sagebrush shrubland
White-tailed prairie dog	Barren/sparsely vegetated, grassland, greasewood flat, montane grassland, sagebrush shrubland, saltbush shrubland
Wolverine	Coniferous forest
Wyoming pocket gopher	Barren/sparsely vegetated, greasewood flat, saltbush shrubland
Birds	
American white pelican	Open water
Least bittern	Herbaceous wetland
White-faced ibis	Agricultural land, herbaceous wetland, open water
Trumpeter swan	Herbaceous wetland, open water

Table 3.8-26 BLM Sensitive and State-protected Species Potentially Occurring in Region I

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Barrow's goldeneye	Herbaceous wetland, open water, woody riparian and wetlands
Bald eagle	Open water, woody riparian and wetlands
Northern goshawk	Aspen forest and woodland, coniferous forest
Swainson's hawk	Agricultural land, barren/sparsely vegetated, grassland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Ferruginous hawk	Cliff and canyon, grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Golden eagle	Agricultural land, cliff and canyon, grassland, pinyon/juniper, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Peregrine falcon	Aspen forest and woodland, cliff and canyon, coniferous forest, grassland, herbaceous wetland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Prairie falcon	Cliff and canyon, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Columbian sharp-tailed grouse	Grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, sagebrush shrubland, woody riparian and wetlands
Mountain plover	Agricultural land, barren/sparsely vegetated, grassland, montane grassland
Long-billed curlew	Agricultural land, grassland, herbaceous wetland, woody riparian and wetlands
Black tern	Open water, herbaceous wetland
Flammulated owl	Aspen forest and woodland, coniferous forest
Burrowing owl	Agricultural land, barren/sparsely vegetated, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Long-eared owl	Agricultural land, aspen forest and woodland, coniferous forest, grassland, montane grassland, pinyon/juniper, riparian, saltbush shrubland, woody riparian and wetlands
Short-eared owl	Agricultural land, grassland, greasewood flat, herbaceous wetland, montane grassland, sagebrush shrubland
Boreal owl	Aspen forest and woodland, coniferous forest
Black swift	Cliff and canyon, open water, woody riparian and wetlands
Lewis' woodpecker	Aspen forest and woodland, coniferous forest, pinyon/juniper, woody riparian and wetlands
Red-naped sapsucker	Aspen forest and woodland, coniferous forest, woody riparian and wetlands
American three-toed woodpecker	Coniferous forest
Loggerhead shrike	Agricultural land, grassland, greasewood flat, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Gray vireo	Montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Pinyon jay	Coniferous forest, montane shrubland, pinyon/juniper
Juniper titmouse	Pinyon/juniper
Sage thrasher	Sagebrush shrubland
Yellow-breasted chat	Riparian, woody riparian and wetlands
Brewer's sparrow	Sagebrush shrubland
Vesper sparrow	Grassland, montane grassland, sagebrush shrubland
Sage sparrow	Sagebrush shrubland
Grasshopper sparrow	Agricultural land, grassland, montane grassland, sagebrush shrubland
Bobolink	Agricultural land, grassland, herbaceous wetland
Reptiles	
Corn snake	Agricultural land, grassland, greasewood flat, herbaceous wetland, riparian, woody riparian and wetlands
Long-nosed leopard lizard	Barren/sparsely vegetated, greasewood flat, sagebrush shrubland, saltbush shrubland
Midget faded rattlesnake	Cliff and canyon, coniferous forest, greasewood flat, pinyon/juniper, montane shrubland, sagebrush shrubland, saltbush shrubland
Smooth greensnake	Agricultural land, aspen forest and woodland, coniferous forest, grassland, greasewood flat, herbaceous wetland,

Table 3.8-26 BLM Sensitive and State-protected Species Potentially Occurring in Region I

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
	montane grassland, riparian, woody riparian and wetlands
Terrestrial Invertebrates	
Great Basin silverspot (Nokomis fritillary butterfly)	Agricultural land, herbaceous wetland, riparian, woody riparian and wetlands

Alternative I-B

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region I include two federally listed and two candidate species, 63 BLM sensitive and state-protected species. Species-specific impact discussions are presented below. No suitable habitat for the Canada lynx occurs along Alternative I-B; therefore, impacts are not expected to occur to this species. The whooping crane, interior least tern, and piping plover do not occur in Region I; however, they are discussed in terms of potential depletions in the Platte River basin. Section 3.7.6.3 presents a description of existing disturbance along Alternative I-B.

Greater Sage-grouse (Candidate)

As presented in **Table 3.8-20**, a total of 40 occupied/active leks occur within 4 miles of Alternative I-B (i.e., 28 occupied leks in Wyoming and 12 active leks in Colorado). In addition, Alternative I-B crosses a variety of greater sage-grouse habitats in Wyoming and Colorado (**Figure 3.8-1**).

The types of impacts to greater sage-grouse under Alternative I-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed. The intensity of impacts to greater sage-grouse would differ in the number of leks crossed and the amount of habitat disturbed (**Table 3.8-20**). Analysis of lek attendance and productivity across alternatives is provided in **Table 3.8-22**. A summary of Wyoming and Colorado lek attendance data shows only minor differences in the average male sage-grouse lek attendance between Alternative I-A and I-B.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat, which may help reduce potential raptor and corvid predation on greater sage-grouse. Nonetheless, given the amount of greater sage-grouse potential habitat crossed by the proposed Project under Alternative I-B (**Table 3.8-21**), operation would result in potential mortality of individuals and avoidance of sagebrush habitats within the transmission line corridor by local greater sage-grouse populations.

Whooping Crane (Endangered), Interior Least Tern (Endangered), Piping Plover (Threatened)

The types of impacts to the whooping crane, interior least tern, and piping plover under Alternative I-B would be the same as described for Alternative I-A. The whooping crane, interior least tern, and piping plover do not occur in Region I; however, they are discussed in terms of potential depletions in the Platte River basin.

TWE has indicated that all water requirements for the Project will be met using existing water rights. Therefore, construction of Alternative I-A is anticipated to result in no new depletions within the Platte River basin, including the upper portion of the North Platte River and the downstream section of the Platte River Basin in Nebraska. Confirmation of this determination will be ultimately made by the Wyoming State Engineers Office (SEO). Therefore, downstream impacts to habitat for these three federally listed species

would not occur and TWE would not be required to conduct section 7 consultations with the USFWS or make a mitigation payment to the PRRIP.

Western Yellow-billed Cuckoo (Candidate)

The types of impacts to the western yellow-billed cuckoo under Alternative I-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-B would result in the construction and operation disturbance of 46 acres and 4 acres, respectively, of potentially suitable riparian and wetland habitat. These areas represent 0.10 percent and <0.01 percent, respectively, of the available suitable habitat within the Region I western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. Additionally, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative I-B would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXNE)

The types of impacts to black-footed ferrets under Alternative I-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-B would result in the construction and operation disturbance of 232 acres and 55 acres, respectively, of white-tailed prairie dog colonies. These areas represent 0.09 percent and 0.02 percent, respectively, of the available white-tailed prairie dog colonies within the Region I black-footed ferret analysis area.

Between 2001 and 2006, 217 black-footed ferrets were released within the WCMA along Alternative I-B in Moffat and Rio Blanco counties, Colorado (BLM 2008). This area encompasses approximately 52,000 acres at the lower reach of the Wolf Creek watershed and was chosen as a reintroduction site due to its sizeable white-tailed prairie dog population. In 2006, approximately 19,000 acres of active white-tailed prairie dog colonies were distributed throughout the WCMA. Survival rates of introduced black-footed ferrets within the WCMA have been observed to be lower than other reintroduction sites (BLM 2008) and in 2008, a plague outbreak was detected. Results of spotlight surveys in 2010 were limited to the detection of one male black-footed ferret and no documented successful reproductive pairs within the WCMA. As a result of limited survival success and the occurrence of the 2008 plague outbreak, it generally is agreed that black-footed ferrets no longer inhabit the WCMA (BLM 2012).

Preconstruction clearance surveys for black-footed ferrets may be required within white-tailed prairie dog colonies or complexes exceeding 200 acres in size that are located within 0.5 mile of Alternative I-B. While habitat modifications may still occur, these surveys would be conducted to minimize direct impacts to black-footed ferrets.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use

of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors and black-footed ferrets.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The types of impacts to the gray wolf under Alternative I-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-B would result in the construction and operation disturbance of 5,205 acres and 477 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.10 percent and <0.01 percent, respectively, of potential habitat within the Region I special status wildlife analysis area. Indirect impacts would occur to 227,030 acres, which represents 4.54 percent of gray wolf potential habitat within the Region I special status wildlife analysis area.

Impacts to the gray wolf under Alternative I-B would be limited primarily to habitat loss and fragmentation. Further indirect impacts to the gray wolf may include a reduction or change in distribution of large mammal populations.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur along Alternative I-B in Region I are presented in **Table 3.8-26**. The types of impacts under Alternative I-B to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative I-B (e.g., sagebrush shrubland, grassland, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of **SSWS-2** and **SSWS-3** under Alternative I-B would reduce impacts to pygmy rabbits and Wyoming pocket gophers by identifying suitable habitat and implementing appropriate mitigation measures, based on survey results. In addition, TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many BLM sensitive and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative I-B, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project.

<u>Alternative I-C</u>

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region I include two federally listed and two federal candidate species, 63 BLM sensitive and state-protected species. Species-specific impact discussions are presented below. No suitable habitat for the Canada lynx occurs along Alternative I-C; therefore, impacts are not expected to occur to this species. The whooping crane, interior least tern, and piping plover do not occur in Region I; however, they are discussed in terms of potential depletions in the Platte River basin. Section 3.7.6.3 presents a description of existing disturbance along Alternative I-C.

Greater Sage-grouse (Candidate)

As presented in **Table 3.8-20**, a total of 59 occupied/active leks occur within 4 miles of Alternative I-C (i.e., 38 occupied leks in Wyoming and 21 active leks in Colorado). In addition, Alternative I-C crosses a variety of greater sage-grouse habitats in Wyoming and Colorado (**Figure 3.8-1**).

The types of impacts to greater sage-grouse from under Alternative I-C generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and amount of habitat disturbed (**Table 3.8-20**). Potential impacts to sage-grouse under Alternative I-C will be greater in comparison to Alternative I-A due to the increased number of leks located within 4 miles of the Project reference line and the total number of individual greater sage-grouse observed attending these leks. Although data regarding greater sage-grouse lek attendance in Colorado has not been received in time for inclusion in this draft, a summary of Wyoming lek attendance data shows that average lek attendance across Alternative I-C is similar to that of Alternative I-A (**Table 3.8-22**). The inclusion of Colorado sage-grouse lek attendance data will be required to provide a full comparison of potential impacts to sage-grouse populations across Region I alternatives.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat, which may help reduce potential raptor and corvid predation on greater sage-grouse. Nonetheless, given the amount of greater sage-grouse habitat crossed by the proposed Project under Alternative I-C (**Table 3.8-21**), operation would result in potential mortality of individuals and avoidance of sagebrush habitats within the transmission line corridor by local greater sage-grouse populations.

Whooping Crane (Endangered), Interior Least Tern (Endangered), Piping Plover (Threatened)

The types of impacts to the whooping crane, interior least tern, and piping plover under Alternative I-C would be the same as described for Alternative I-A.

TWE has indicated that all water requirements for the Project will be met using existing water rights. Therefore, construction of Alternative I-A is anticipated to result in no new depletions within the Platte River basin, including the upper portion of the North Platte River and the downstream section of the Platte River Basin in Nebraska. Confirmation of this determination will be ultimately made by the Wyoming State Engineers Office (SEO). Therefore, downstream impacts to habitat for these three federally listed species would not occur and TWE would not be required to conduct section 7 consultations with the USFWS or make a mitigation payment to the PRRIP.

Western Yellow-billed Cuckoo (Candidate)

The types of impacts to the western yellow-billed cuckoo under Alternative I-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-C would result in the construction and operation disturbance of 41 acres and 5 acres, respectively, of potentially suitable riparian and wetland habitat. These areas represent 0.09 percent and 0.01 percent, respectively, of the available suitable habitat within the Region I western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. Additionally, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative I-C would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXNE)

The types of impacts to the black-footed ferret under Alternative I-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-C would result in the construction and operation disturbance of 79 acres and 22 acres, respectively, of white-tailed prairie dog colonies. These areas represent 0.03 percent and <0.01 percent, respectively, of the white-tailed prairie dog colonies within the Region I black-footed ferret analysis area.

Between 2001 and 2006, 217 black-footed ferrets were released within the WCMA along Alternative I-C in Moffat and Rio Blanco counties, Colorado (BLM 2008). This area encompasses approximately 52,000 acres at the lower reach of the Wolf Creek watershed and was chosen as a reintroduction site due to its sizeable white-tailed prairie dog population. In 2006, approximately 19,000 acres of active white-tailed prairie dog colonies were distributed throughout the WCMA. Survival rates of introduced black-footed ferrets within the WCMA have been observed to be lower than other reintroduction sites (BLM 2008) and in 2008, an outbreak of the plague was detected. Results of spotlight surveys in 2010 were limited to the detection of one male black-footed ferret and no documented successful reproductive pairs within the WCMA. As a result of limited survival success and the occurrence of the 2008 plague outbreak, it generally is agreed that black-footed ferrets no longer inhabit the WCMA (BLM 2012).

Preconstruction clearance surveys for black-footed ferrets may be required within white-tailed prairie dog colonies or complexes exceeding 200 acres in size that are located within 0.5 mile of Alternative I-C. While habitat modifications may still occur, these surveys would be conducted to minimize direct impacts to black-footed ferrets.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The types of impacts to the gray wolf under Alternative I-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-C would result in the construction and operation disturbance of 5,575 acres and 531 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.11 percent and 0.01 percent, respectively, of potential habitat within the Region I special status wildlife analysis area. Indirect impacts would occur to 208,800 acres, which represents 4.18 percent of gray wolf potential habitat within the Region I special status wildlife analysis area. Impacts to the gray wolf under Alternative I-C would be limited primarily to habitat loss and fragmentation.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur in Region I are presented in **Table 3.8-26**. The types of impacts under Alternative I-C to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative I-C (e.g., sagebrush shrubland, grassland, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of **SSWS-2** and **SSWS-3** under Alternative I-C would reduce impacts to pygmy rabbits and Wyoming pocket gophers by identifying suitable habitat and implementing appropriate mitigation measures based on survey results. In addition, TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many BLM sensitive and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative I-C, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

Alternative I-D (Agency Preferred)

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region I include two federally listed and two candidate species, 63 BLM sensitive and state-protected species. No suitable habitat for the Canada lynx occurs along Alternative I-D; therefore, impacts are not expected to occur to this species. The whooping crane, interior least tern, and piping plover do not occur in Region I; however, they are discussed in terms of potential depletions in the Platte River basin. Species-specific impact discussions are presented below. Section 3.7.6.3 presents a description of existing disturbance along Alternative I-D.

Greater sage-grouse

As presented in **Table 3.8-20**, a total of 47 occupied/active leks occur within 4 miles of Alternative I-D (i.e., 35 occupied leks in Wyoming and 12 active leks in Colorado). In addition, Alternative I-D crosses a variety of greater sage-grouse habitats in Wyoming and Colorado (**Figure 3.8-1**).

The types of impacts to the greater sage-grouse under Alternative I-D generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and amount of habitat disturbed (**Table 3.8-20**). Potential impacts to greater sage-grouse from construction and operation of Alternative I-D may be higher in comparison to Alternative I-A, due to the greater number of leks located within 4 miles of the Project reference line. A summary of Wyoming and Colorado lek attendance data shows that average lek attendance across Alternative I-D is greater than that of Alternative I-A (**Table 3.8-22**). The inclusion of Colorado greater sage-grouse lek attendance data will be required to provide a full comparison of potential impacts to greater sage-grouse populations across Region I alternatives.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat, which may help reduce potential raptor and corvid predation on greater sage-grouse. Nonetheless, given the amount of greater sage-grouse potential habitat crossed by the proposed Project under Alternative I-D (**Table 3.8-21**), operation would result in potential mortality of individuals and avoidance of sagebrush habitats within the 2-mile transmission line corridor by local greater sage-grouse populations.

Whooping Crane (Endangered), Interior Least Tern (Endangered), Piping Plover (Threatened)

The types of impacts to the whooping crane, interior least tern, and piping plover under Alternative I-D would be the same as described for Alternative I-A.

TWE has indicated that all water requirements for the Project will be met using existing water rights. Therefore, construction of Alternative I-A is anticipated to result in no new depletions within the Platte River basin, including the upper portion of the North Platte River and the downstream section of the Platte River Basin in Nebraska. Confirmation of this determination will be ultimately made by the Wyoming State Engineers Office (SEO). Therefore, downstream impacts to habitat for these three federally listed species would not occur and TWE would not be required to conduct section 7 consultations with the USFWS or make a mitigation payment to the PRRIP.

Western Yellow-billed Cuckoo (Candidate)

The types of impacts to the western yellow-billed cuckoo under Alternative I-D generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-D would result in the construction and operation disturbance of 39 acres and 3 acres, respectively, of potentially suitable riparian and wetland habitat. These areas represent 0.08 percent and <0.01 percent, respectively, of the available suitable habitat within the Region I western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. Additionally, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative I-D would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXNE)

The types of impacts to the black-footed ferret under Alternative I-D generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-D would result in the construction and operation of 180 acres and 46 acres, respectively, of white-tailed prairie dog colonies. These areas represent 0.07 percent and 0.02 percent, respectively, of the available white-tailed prairie dog colonies within the Region I black-footed ferret analysis area.

Between 2001 and 2006, 217 black-footed ferrets were released within the WCMA along Alternative I-D in Moffat and Rio Blanco counties, Colorado (BLM 2008). This area encompasses approximately 52,000 acres at the lower reach of the Wolf Creek watershed and was chosen as a reintroduction site due to its sizeable white-tailed prairie dog population. In 2006, approximately 19,000 acres of active white-tailed prairie dog colonies were distributed throughout the WCMA. Survival rates of introduced black-footed ferrets within the WCMA have been observed to be lower than other reintroduction sites (BLM 2008) and in 2008, an outbreak of the plague was detected. Results of spotlight surveys in 2010 were limited to the detection of one male black-footed ferret and no documented successful reproductive pairs within the WCMA. As a result of limited survival success and the occurrence of the 2008 plague outbreak, it generally is agreed that black-footed ferrets no longer inhabit the WCMA (BLM 2012).

Preconstruction clearance surveys for black-footed ferrets may be required within white-tailed prairie dog colonies or complexes exceeding 200 acres in size that are located within 0.5 mile of Alternative I-D. While habitat modifications may still occur, results of these surveys would be used to avoid and minimize direct impacts to black-footed ferrets.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The types of impacts to the gray wolf under Alternative I-D generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-25**). Alternative I-D would result in the construction and operation disturbance of 5,597 acres and 511 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.11 percent and 0.01 percent, respectively, of potential habitat within the Region I special status wildlife analysis area. Indirect impacts would occur to 245,592 acres, which represents 4.91 percent of gray wolf potential habitat within the Region I special status wildlife analysis area. Impacts to the gray wolf under Alternative I-D would be limited primarily to habitat loss and fragmentation.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur in Region I are presented in **Table 3.8-26**. The types of impacts under Alternative I-D to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative I-D (e.g., sagebrush shrubland, grassland, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of **SSWS-2** and **SSWS-3** under Alternative I-D would reduce impacts to pygmy rabbits and Wyoming pocket gophers by identifying suitable habitat and implementing appropriate mitigation measures based on survey results. In addition, TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many BLM sensitive and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative I-D, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

TWE has developed three potential options to avoid or minimize the crossing of the Tuttle Easement and the National Park Service Deerlodge Road along Alternative I-D. These are referred to as Tuttle Easement micro-siting options 1, 2, and 3. CPW holds a conservation easement over portions of the Tuttle Ranch, located east of the town of Elk Springs in Moffat County, Colorado. The Tuttle Ranch supports an important white-tailed prairie dog colony, which is suitable habitat for the black-footed ferret. It is intended that future black-footed ferret reintroductions will occur within this conservation easement.

In terms of potential impacts to suitable black-footed ferret habitat and active white-tailed prairie dog colonies, micro-siting options 2 and 3 would result in the less potential impacts in comparison to Alternative I-D as both options avoid crossing these resources and the conservation easement altogether (**Table 3.8-27**). Although micro-siting option 1 would cross the conservation easement and suitable habitat for black-footed ferret reintroduction, this option would be constructed adjacent to an existing 345-kV transmission line, therefore impacts to special status wildlife species from habitat fragmentation would be reduced in comparison to Alternative I-D. The differences in potential impact acreages to greater sage-grouse habitat and active leks from the three micro-siting options are negligible as all three options would impact a similar number of acres of greater sage-grouse habitat and are located similar distances from the nearest active lek.

Table 3.8-27 Summary of Region I Micro-siting Options Impact Parameters for Federally Listed and Candidate Species

Parameter	Tuttle Easement Micro-siting Option 1			Tuttle Easement Micro-siting Option 2			Tuttle Easement Micro-siting Option 3			Comparison – Tuttle Easement Micro-siting Options		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Black-footed ferret potential habitat (acres)	65	19	12,647	65	19	12,647	65	19	12,647	80	23	12,647
Percentage of existing habitat within the Region I black-footed ferret analysis area	0.03	0.01	4.94	0.03	0.01	4.94	0.03	0.01	4.94	0.03	0.01	4.94
Greater Sage-grouse potential habitat (acres)	688	178	88,909	688	178	88,909	688	177	88,909	685	176	88,909
Percentage of existing habitat within the Region I greater sage-grouse analysis area	0.02	<0.01	2.93	0.02	<0.01	2.93	0.02	<0.01	2.93	0.02	<0.01	2.93
Western yellow-billed cuckoo potential habitat (acres)	<1	<1	15	<1	<1	15	<1	<1	15	<1	<1	15

Table 3.8-27 Summary of Region I Micro-siting Options Impact Parameters for Federally Listed and Candidate Species

Parameter	Tuttle Easement Micro-siting Option 1			Tuttle Easement Micro-siting Option 2			Tuttle Easement Micro-siting Option 3			Comparison – Tuttle Easement Micro-siting Options		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Percentage of existing habitat within the Region I western yellow-billed cuckoo analysis area	<0.01	<0.01	0.03	<0.01	<0.01	0.03	<0.01	<0.01	0.03	<0.01	<0.01	0.03
Gray wolf potential habitat (acres)	1,727	174	86,923	1,712	173	86,923	1,727	174	86,923	1,723	173	86,923
Percentage of existing habitat within the Region I special status wildlife analysis area	0.03	<0.01	1.74	0.03	<0.01	1.74	0.03	<0.01	1.74	0.03	<0.01	1.74

Alternative Connectors in Region I

Both the Mexican Flats and Baggs alternative connectors would include minimal increases of total disturbance to special status wildlife species habitat, if they were to be utilized. Impacts associated with these connectors would be very similar to the other alternatives in Region I and would include minor disturbance to special status wildlife species habitat. **Table 3.8-28** summarizes impacts associated with the alternative connectors in Region I.

Table 3.8-28 Summary of Region I Alternative Connector Impact Parameters for Special Status Wildlife Species[1]

Alternative Connector	Impact Parameters
Mexican Flats Alternative Connector	• Approximately 10 miles in length.[2] • Not within Wyoming greater sage-grouse core areas. • Five greater sage-grouse leks within 4 miles of the reference line. • Within two black-footed ferret non block-cleared areas (Dad and Desolation Flats). • Eleven special status raptor species nests and 3 raptor nests of unknown species are within 1 mile of the reference line.
Baggs Alternative Connector	• Approximately 22 miles in length. • Not within Wyoming greater sage-grouse core areas. • Five greater sage-grouse leks within 4 miles of the reference line. • Not within black-footed ferret non block-cleared areas. • Eleven special status raptor species nests and 31 nests of unknown species are within 1 mile of the reference line.
Fivemile Point North Alternative Connector	• Approximately 3 miles in length. • Not within Wyoming greater sage-grouse core areas. • Three greater sage-grouse leks within 4 miles of the reference line. • Not within black-footed ferret non block-cleared areas. • Twelve special status raptor species nests and 6 nests of unknown species are within 1 mile of the reference line.
Fivemile Point South Alternative Connector	• Approximately 2 miles in length. • Not within Wyoming greater sage-grouse core areas. • One greater sage-grouse lek within 4 miles of the reference line. • Not within black-footed ferret non block-cleared areas. • Two special status raptor species nests and 1 nest of unknown species are within 1 mile of the reference line.

[1] Nests of raptor species, which are not classified as special status are tabulated in Section 3.7, Wildlife. Nests of unknown raptor species are tabulated in both Sections 3.7 and 3.8 because they may have been utilized by either special status raptors or non-special status raptors.

[2] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Alternative Ground Electrode Systems in Region I

The northern ground electrode system would be necessary within 100 miles of the Northern Terminal as discussed in Section 2.5.1, Alternative Transmission Line Routes and Ancillary Facilities by Region. Although the location for this system has not been determined, conceptual locations and connections to the alternative routes have been provided by the proponent. The special status wildlife species impacts associated with constructing and operating this system are the same as discussed for Alternative I-A.

Table 3.8-29 summarizes impacts associated with the seven combinations of alternative route and location possibilities for the northern ground electrode system.

Table 3.8-29 Summary of Region I Alternative Ground Electrode System Location Impact Parameters for Special Status Wildlife Species

Alternative Ground Electrode System Locations	Habitat Disturbance (acres)		Analysis
	Construction	Operation	
Separation Flat – All Alt. Routes	128	39	Due to the programmatic nature of the seven potential ground electrode systems, the extent of impacts to special status wildlife species is not known at this time. However, due to the potential locations occurring in southern Wyoming, impacts are expected to be the same as discussed in Section 3.8.6.1, Impacts to Special Status Wildlife Species from Terminal Construction and Operation, and Section 3.8.6.2, Impacts to Special Status Wildlife Species Common to All Alternative Routes and Associated Components. To reduce impacts to special status wildlife species, species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFWS, and applicable state wildlife agencies.
Shell Creek (Alt. I-A, I-D)	223	89	
Shell Creek (Alt I-B)	216	77	
Little Snake East (Alts I-A, I-B, I-D)	108	29	
Little Snake West (Alt. I-A)	121	37	
Little Snake West (Alt. I-B, I-D)	93	21	
Cottonwood Creek (Alt. I-C)	89	19	
Eight Mile Basin	83	17	
Separation Creek	136	47	

Table 3.8-30 summarizes the potential impacts to sagebrush habitats associated with the seven combinations of alternative route and location possibilities in Region I.

Table 3.8-30 Summary of Region I Alternative Ground Electrode System Location Impact Parameters for Greater Sage-grouse

Alternative Ground Electrode System Locations	Sagebrush Habitat Disturbance (acres)	
	Construction	Operation
Separation Flat (All Alt. Routes)	108	33
Shell Creek (Alt. I-A, I-D)	124	49
Shell Creek (Alt. I-B)	119	43
Little Snake East (Alt. I-A, I-B, and I-D)	106	29
Little Snake West (Alt. I-A)	104	31
Little Snake West (Alt. I-B and I-D)	79	18
Cottonwood Creek (Alt. I-C)	78	17
Eight Mile Basin	61	12
Separation Creek	129	45

Table 3.8-31 presents special status raptor nests known to occur within 1 mile of the reference line, site, and siting area at alternative ground electrode system locations.

Table 3.8-31 Special Status Raptor Nests Within 1 Mile of the Reference Line, Site, and Siting Area at Alternative Ground Electrode System Locations[1]

Alternative Ground Electrode System Locations[2]	Special Status Raptor Nests[3]
Separation Flat (All Alternatives)	One burrowing owl, 33 ferruginous hawk, 6 golden eagle, 3 prairie falcon, and 3 unknown raptor species nests
Shell Creek (Alternatives I-A, I-B, and I-D)	One burrowing owl, 28 ferruginous hawk, 18 golden eagle, 2 prairie falcon, and one unknown raptor species nests
Little Snake East (Alternatives I-A, I-B, and I-D)	One bald eagle, 10 ferruginous hawk, 1 golden eagle, and 5 unknown raptor species nests
Little Snake West (Alternatives I-A, I-B, and I-D)	Two burrowing owl, 5 ferruginous hawk, 14 golden eagle, 2 prairie falcon, and 27 unknown raptor species
Eight Mile Basin (All Alternatives)	Three ferruginous hawk, 2 golden eagle, and 1 prairie falcon nests
Separation Creek (All Alternatives)	Seventy-five ferruginous hawk, 17 golden eagle, 10 prairie falcon, and 3 unknown raptor species nests

[1] Raptor nests are a total of those within 1 mile of the reference line, site, and siting area. Some duplication exists due to the unknown exact locations of electrode sites and associated features.

[2] Ground electrode systems are described in detail in Section 2.5.1, Alternative Transmission Line Routes and Ancillary Facilities by Region.

[3] Nests of raptor species, which are not classified as special status, are tabulated in Section 3.7, Wildlife. Nests of unknown raptor species are tabulated in both Sections 3.7 and 3.8 because they may have been utilized by either special status raptors or non-special status raptors.

Region I Conclusion

A comparison of impact parameters for Region I alternatives indicates that potential construction and operation impacts to special status wildlife species would be varied across all alternatives as shown in **Table 3.8-25**. Alternative I-C would result in the greatest direct and indirect impacts to greater sage-grouse potential habitat in comparison to the other Region I alternatives (**Table 3.8-25**). Alternative I-B would result in the greatest direct and indirect impacts to western yellow-billed cuckoo potential habitat in comparison to the other Region I alternatives (**Table 3.8-25**). Alternative I-B would result in the greatest direct and indirect impacts to black-footed ferret potential habitat in comparison to the other Region I alternatives (**Table 3.8-25**). Alternative I-D would result in the greatest direct and indirect impacts to gray wolf potential habitat in comparison to the other Region I alternatives (**Table 3.8-25**). The greatest level of impacts to special status wildlife species among all Region I alternatives associated with Alternative I-C is due to greater impacts to greater sage-grouse leks and potential habitat. However, Project effects on special status wildlife species and their potential habitat would be avoided or considered to be low magnitude and short-term in duration after applying BMPs, design features, and additional mitigation.

3.8.6.5 Region II

Tables 3.8-32, **3.8-33, 3.8-34**, **3.8-35**, and **3.8-36** provide a tabulation of impacts associated with the alternative routes in Region II. Key impact parameters that relate to the impact discussion in Section 3.8.6.2, Impacts to Special Status Species Common to All Alternative Routes and Associated Components, and specific differences by alternative are discussed below. **Table 3.8-37** presents impacts to USFS sensitive species habitat on NFS lands that are crossed by route alternatives, or other Project components in Region II.

Table 3.8-32 Summary of Region II Alternative Route Impact Parameters for Greater Sage-grouse

Parameter	Alternative II-A	Alternative II-B	Alternative II-C	Alternative II-D	Alternative II-E	Alternative II-F
Colorado						
Number of occupied leks within 0.5 mile of reference lines	0	0	0	0	0	0
Number of occupied leks within 1 mile of reference lines	0	0	0	0	0	0
Number of occupied leks within 2 miles of reference lines	0	0	0	0	0	0
Number of occupied leks within 3 miles of reference lines	0	0	0	0	0	0
Number of occupied leks within 4 miles of reference lines	0	0	0	0	0	0
Number of occupied leks within 11 miles of reference lines	2	0	0	2	2	2
Utah						
Number of occupied leks within 0.5 mile of reference lines	2	0	0	0	0	0
Number of occupied leks within 1 mile of reference lines	3	0	0	3	1	3
Number of occupied leks within 2 miles of reference lines	4	0	0	7	7	10
Number of occupied leks within 3 miles of reference lines	7	0	0	10	9	13
Number of occupied leks within 4 miles of reference lines	7	0	0	10	10	15
Average distance of leks to reference line (Miles)	1.32	-	-	1.99	1.73	1.84
Number of occupied leks within 11 miles of reference lines	15	2	3	25	28	25
Length of transmission line in miles (habitat fragmentation and collision potential)[2]	257	345	364	262	266	267

Habitat Disturbance	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Colorado PPH (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percentage of existing habitat within the Region II greater sage-grouse analysis area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colorado PGH (acres)	247	62	24,545	178	45	14,389	178	45	14,389	248	62	24,622	248	62	24,622	248	62	24,622
Percentage of existing habitat within the Region II greater sage-grouse analysis area	0.15	0.04	14.81	0.11	0.03	8.68	0.11	0.03	8.68	0.15	0.04	14.86	0.15	0.04	14.86	0.15	0.04	14.86

Table 3.8-32 Summary of Region II Alternative Route Impact Parameters for Greater Sage-grouse

Parameter	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F		
Utah nesting/brood-rearing habitat (acres)	856	241	83,719	170	59	10,541	0	0	0	633	174	52,573	830	210	73,699	375	107	25,785
Percentage of existing habitat within the Region II greater sage-grouse analysis area	0.06	0.02	6.03	0.01	<0.01	0.76	-	-	-	0.05	0.01	3.79	0.06	0.02	5.31	0.03	<0.01	1.86
Utah wintering habitat (acres)	676	191	64,643	139	48	8,707	0	0	0	597	161	50,936	856	216	70,837	397	108	27,984
Percentage of existing habitat within the Region II greater sage-grouse analysis area	0.07	0.02	6.52	0.02	<0.01	0.88	-	-	-	0.06	0.02	5.13	0.09	0.02	7.14	0.04	0.01	2.82
Utah occupied habitat[1]	885	253	87,487	264	95	16,489	16	4	1,089	907	262	72,919	991	256	88,248	413	117	30,215
Percentage of existing habitat within the Region II greater sage-grouse analysis area	0.05	0.02	5.12	0.02	<0.01	0.97	<0.01	<0.01	0.06	0.05	0.02	4.27	0.06	0.01	5.17	0.02	<0.01	1.77

[1] Occupied habitat includes brood-rearing habitat and wintering habitat.

[2] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Table 3.8-33 Summary of Region II Greater Sage-grouse Attendance of Leks within 4 miles

Parameter[1]	Alternative II-A	Alternative II-B	Alternative II-C	Alternative II-D	Alternative II-E	Alternative II-F
Colorado						
Number of active leks	0	0	0	0	0	0
Peak[2] male attendance combined 2003 – 2012	0	0	0	0	0	0
Minimum[3] male attendance combined 2003 – 2012	0	0	0	0	0	0
3-year average lek attendance[1]	0	0	0	0	0	0
Average attendance across all leks[4]	0	0	0	0	0	0
Total attendance 2003 - 2012	0	0	0	0	0	0
Number of leks with attendance 2008-2012	0	0	0	0	0	0
Survey effort[5,7]	100%	100%	100%	100%	100%	100%
Utah						
Number of active leks	7	0	0	10	10	15
Peak[2] male attendance combined 2003 – 2012	51	-	-	190	187	310
Minimum[3] male attendance combined 2003 – 2012	2	-	-	14	24	27
3-year average lek attendance[1]	4.86	-	-	6.33	8.07	7.69
Average attendance across all leks[4]	3.66	-	-	4.52	9.42	13.28
Total attendance 2003 - 2012	256	-	-	860	942	1328
Number of leks with no attendance 2008-2012[6]	4	-	-	1	3	1
Survey effort[5]	100%	100%	100%	100%	100%	100%

[1] Lek count numbers are male birds only, most recent data used.

[2] Sum of the 10 year peak annual counts from all leks within 4 miles combined (2002-2011).

[3] Sum of the 10 year minimum count from all leks within 4 miles combined (2002-2011).

[4] Total males observed/Number of surveys.

[5] Number of surveys/Number of potential surveys (10 years x 28 leks = 280 potential surveys).

[6] Although leks are classified as active or occupied, surveys have not observed male attendance over past 5 years.

[7] One historic lek occurs within 4 miles of the project reference line; annual surveys have not observed any breeding activity 2003-2012.

Table 3.8-34 Summary of Region II Alternate Route Impact Parameters (Visibility) for Greater Sage-grouse

Parameter	Alternative II-A	Alternative II-B	Alternative II-C	Alterative II-D	Alternative II-E	Alternative II-F
Colorado						
Number of visible occupied leks within 0.5 mile of reference lines[1]	0	0	0	0	0	0
Number of visible occupied leks within 1 mile of reference lines	0	0	0	0	0	0
Number of visible occupied leks within 2 miles of reference lines	0	0	0	0	0	0
Number of visible occupied leks within 3 miles of reference lines	0	0	0	0	0	0
Number of visible occupied leks within 4 miles of reference lines	0	0	0	0	0	0
Average distance of visible leks within 4 miles of reference lines	0	0	0	0	0	0
Utah						
Number of visible occupied leks within 0.5 mile of reference lines	2	0	0	0	0	0
Number of visible occupied leks within 1 mile of reference lines	3	0	0	0	3	0
Number of visible occupied leks within 2 miles of reference lines	4	0	0	5	6	1
Number of visible occupied leks within 3 miles of reference lines	7	0	0	9	9	3
Number of visible occupied leks within 4 miles of reference lines	8	0	0	12	11	5
Average distance of visible leks within 4 miles of reference lines	1.72	-	-	2.34	1.88	2.70
Length of transmission line in miles (habitat fragmentation and collision potential)[2]	257	345	364	262	266	267

[1] Occupied habitat includes brood-rearing habitat and wintering habitat.

[2] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Table 3.8-35 Summary of Region II Alternative Route Impact Parameters for Utah Prairie Dog

Parameter	Alternative II-A		Alternative II-B		Alternative II-C		Alternative II-D		Alternative II-E		Alternative II-F	
	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact
Utah prairie dog colonies in high intensity survey areas (acres)[1]	0	0	0	0	179	33	0	0	0	0	0	0
Utah prairie dog colonies in low intensity survey areas (acres)[1]	0	0	0	0	86	14	0	0	0	0	0	0

[1] Acreages of Utah prairie dog colonies will be updated with 2013 survey results.

Table 3.8-36 Special Status Raptor Nests and Winter Roosts Within 1 Mile of the Reference Line in Region II[1]

Species[2]	Alternative II-A	Alternative II-B	Alternative II-C	Alternative II-D	Alternative II-E	Alternative II-F	Castle Dale Alternative Connector	Price Alternative Connector	Lynndyl Alternative Connector	IPP East Alternative Connector	Cedar Knoll Micro-siting Option 1	Cedar Knoll Micro-siting Option 2	Comparable Portion of Alternative II-F	Emma Park Alternative Variation	Comparable Portion of Alternative II-F	Strawberry IRA Micro-siting Option 1	Strawberry IRA Micro-siting Option 2	Strawberry IRA Micro-siting Option 3	Strawberry IRA Comparable Portion of Alternative II-A	Highway 191 Alternative Connector	Cedar Knoll IRA Micro-siting Option 1	Cedar Knoll IRA Micro-siting Option 2	Cedar Knoll IRA comparable Portion of Alternative II-A
Northern goshawk	0	3	0	17	5	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern goshawk post-fledgling area	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ferruginous hawk	21	14	14	55	54	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Golden eagle	24	34	12	61	17	29	4	23	0	0	4	4	4	3	0	12	12	12	12	0	0	0	0
Peregrine falcon	0	2	0	3	0	3	2	3	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
Prairie falcon	4	1	1	5	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-eared owl	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-eared owl	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burrowing owl	0	3	3	21	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unknown raptor species[2]	80	95	91	87	77	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	129	154	124	250	156	200	6	30	0	0	5	5	5	3	0	12	12	12	12	0	0	0	0
Bald eagle winter roosts	6	0	0	2	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[1] Nests of raptor species, which are not classified as special status, are tabulated in Section 3.7, Wildlife. Nests of unknown raptor species are tabulated in both Sections 3.7 and 3.8 because they may have been utilized by either special status raptors or non-special status raptors.

[2] Nests of other special status raptor species such as bald eagle and Swainson's hawk are not included due to the lack of documented nest sites within 1 mile of the reference line.

Note: Bald eagle winter roosts are not considered in total.

Sources: BLM Vernal FO 2009, 2011; BLM Rawlins FO 2009, 2010; BLM Rock Springs FO 2009; BLM Cedar City FO 2010; BLM Price FO 2008; BLM Ely FO 2007; BLM Little Snake FO 2011; EPG 2012, Manti-La Sal National Forest 2012; Ashley National Forest 2010; Uintah National Forest 2011; CDOW, BLM, USFS cooperative dataset 2009; NDOW 2012; AECOM 2012.

Table 3.8-37 Summary of Region II Alternative Route Impacts to Vegetation Communities on USFS Lands

Vegetation Community/Habitat Type	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F			Lynndyl Alternative Connector			Total Acres of Vegetation Community/Habitat Type in Forest
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	
Ashley National Forest																						
1. Agricultural Land										0	0	0	0	0	0	**0**	**0**	**0**				2,691
2. Aspen Forest and Woodland										<1	<1	71	8	1	326	9	2	269				102,261
3. Barren/Sparsely Vegetated										0	0	0	0	0	0	0	0	0				136,429
4. Cliff and Canyon										4	1	330	12	4	2,241	4	1	330				39,266
5. Conifer Forest										<1	<1	2	39	6	2,206	20	5	566				543,194
6. Deciduous Forest										0	0	0	0	0	0	0	0	0				1,125
7. Desert Shrubland										0	0	0	0	0	0	0	0	0				0
8. Developed/Disturbed Land										1	<1	28	43	3	136	4	1	89				42,056
9. Dunes										0	0	0	0	0	0	0	0	0				23
10 Grassland										0	0	0	14	1	39	0	0	0				1,591
11. Greasewood Flat										0	0	0	0	0	0	0	0	0				1,891
12. Herbaceous Wetland										0	0	0	4	<1	70	0	0	0				28,424
13. Montane Grassland										1	<1	154	57	5	830	3	1	178				25,557
14. Montane Shrubland										<1	<1	24	3	<1	146	<1	<1	24				36,831
15. Open Water										0	0	0	0	0	0	0	0	0				21,383
16. Pinyon-juniper										4	2	698	85	15	6,204	4	2	698				104,031
17. Riparian										0	0	0	0	0	0	0	0	0				119
18. Sagebrush Shrubland										17	6	2,811	91	10	3,278	28	10	3,229				200,159
19. Saltbush Shrubland										<1	<1	26	1	<1	25	<1	<1	26				15,422
20. Tundra										0	0	0	0	0	0	0	0	0				17,639
21. Woody Riparian and Wetlands										0	0	0	<1	<1	1	<1	<1	<1				15,120
Fishlake National Forest																						
1. Agricultural Land	<1	<1	<1	0	0	0	<1	<1	38							0	0	0	0	0	0	623
2. Aspen Forest and Woodland	0	0	0	<1	<1	2	48	6	1,809							<1	<1	2	0	0	0	196,958
3. Barren/Sparsely Vegetated	0	0	0	0	0	0	6	1	246							0	0	0	0	0	0	11,977
4. Cliff and Canyon	0	0	0	<1	<1	33	6	2	731							<1	<1	33	<1	<1	3	38,891

Table 3.8-37 Summary of Region II Alternative Route Impacts to Vegetation Communities on USFS Lands

Vegetation Community/Habitat Type	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F			Lynndyl Alternative Connector			Total Acres of Vegetation Community/Habitat Type in Forest
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	
5. Conifer Forest	0	0	0	0	0	0	51	6	1,535							0	0	0	0	0	0	224,021
6. Deciduous Forest	0	0	0	0	0	0	0	0	0							0	0	0	0	0	0	1
7. Desert Shrubland	0	0	0	0	0	0	0	0	0							0	0	0	0	0	0	121
8. Developed/Disturbed Land	<1	<1	<1	1	<1	69	20	3	950							1	<1	69	<1	<1	4	28,664
9. Dunes	0	0	0	0	0	0	0	0	0							0	0	0	0	0	0	0
10. Grassland	<1	<1	<1	14	2	548	12	1	408							14	2	548	1	<1	163	7,453
11. Greasewood Flat	0	0	0	0	0	0	0	0	0							0	0	0	<1	<1	5	306
12. Herbaceous Wetland	0	0	0	0	0	0	<1	<1	1							0	0	0	0	0	0	4,530
13. Montane Grassland	0	0	0	4	1	445	<1	<1	52							4	1	445	2	<1	102	9,129
14. Montane Shrubland	<1	<1	<1	<1	<1	10	178	25	8,961							<1	<1	10	<1	<1	11	211,109
15. Open Water	0	0	0	0	0	0	<1	<1	10							0	0	0	0	0	0	4,334
16. Pinyon-juniper	<1	<1	<1	95	10	2,254	466	54	18,613							95	10	2,254	9	1	554	426,154
17. Riparian	0	0	0	0	0	0	0	0	0							0	0	0	0	0	0	0
18. Sagebrush Shrubland	<1	<1	<1	19	3	769	218	22	7,022							19	3	769	3	<1	228	270,972
19. Saltbush Shrubland	0	0	0	<1	<1	6	3	<1	45							<1	<1	6	<1	<1	42	2,738
20. Tundra	0	0	0	0	0	0	0	0	0							0	0	0	0	0	0	7,664
21. Woody Riparian and Wetlands	0	0	0	0	0	0	12	2	489							0	0	0	<1	<1	2	8,234
Manti-La Sal National Forest																						
1. Agricultural Land	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				1,466
2. Aspen Forest and Woodland	2	<1	95	199	40	6,855				138	24	4,642	2	1	230	2	1	230				234,483
3. Barren/Sparsely Vegetated				3	<1	62				0	0	0	0	0	0	0	0	0				16,519
4. Cliff and Canyon	<1	<1	4	3	1	138				1	<1	2	1	<1	6	1	<1	6				43,352
5. Conifer Forest	3	2	470	185	36	6,269				66	13	2,590	3	2	537	3	2	537				289,618
6. Deciduous Forest	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				0
7. Desert Shrubland	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				1
8. Developed/Disturbed Land	2	<1	63	16	3	540				15	3	535	2	1	98	2	1	98				4,505
9. Dunes	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				0

Table 3.8-37 Summary of Region II Alternative Route Impacts to Vegetation Communities on USFS Lands

Vegetation Community/Habitat Type	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F			Lynndyl Alternative Connector			Total Acres of Vegetation Community/Habitat Type in Forest
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	
10. Grassland	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				104
11. Greasewood Flat	0	0	0	<1	<1	1				0	0	0	0	0	0	0	0	0				80
12. Herbaceous Wetland	<1	<1	1	6	1	124				1	<1	55	<1	<1	2	<1	<1	2				2,789
13. Montane Grassland	0	0	0	35	7	1,104				2	1	170	0	0	0	0	0	0				26,225
14. Montane Shrubland	62	12	2,047	50	8	1,420				30	6	1,183	73	14	2,372	73	14	2,372				230,868
15. Open Water				<1	<1	19				<1	<1	13	0	0	0	0	0	0				2,282
16. Pinyon-juniper	48	9	1,575	57	9	1,387				4	<1	47	51	10	1,609	51	10	1,609				265,022
17. Riparian	0	0	0	0	0	0				0	0	0	0	0	0	0	0	0				0
18. Sagebrush Shrubland	4	1	82	138	26	4,361				76	11	1,909	4	1	89	4	1	89				192,203
19. Saltbush Shrubland	0	0	0	5	<1	18				0	0	0	0	0	0	0	0	0				2,814
20. Tundra	0	0	0	23	3	345				1	<1	2	0	0	0	0	0	0				18,793
21. Woody Riparian and Wetlands	1	<1	3	<1	<1	12				<1	<1	12	1	<1	3	1	<1	3				6,028
Uinta-Wasatch-Cache National Forest																						
1. Agricultural Land	<1	<1	13							<1	<1	1	<1	<1	1	<1	<1	1				290
2. Aspen Forest and Woodland	193	21	5,356							0	0	0	3	2	450	16	4	587				231,663
3. Barren/Sparsely Vegetated	0	0	0							0	0	0	2	1	104	2	1	104				11,182
4. Cliff and Canyon	3	1	402							<1	<1	1	3	<1	61	3	<1	65				25,335
5. Conifer Forest	63	10	3,460							0	0	0	4	1	245	13	3	358				114,549
6. Deciduous Forest	32	3	882							0	0	0	<1	<1	23	<1	<1	23				28,171
7. Desert Shrubland	0	0	0							0	0	0	0	0	0	0	0	0				0
8. Developed/Disturbed Land	18	2	550							<1	<1	3	18	2	276	18	2	279				497
9. Dunes	0	0	0							0	0	0	0	0	0	0	0	0				0
10. Grassland	<1	<1	73							0	0	0	<1	<1	30	<1	<1	30				3,211
11. Greasewood Flat	0	0	0							0	0	0	0	0	0	0	0	0				0
12. Herbaceous Wetland	3	<1	64							0	0	0	<1	<1	2	<1	<1	4				15,225
13. Montane Grassland	11	1	258							0	0	0	1	<1	37	1	<1	37				26,455
14. Montane Shrubland	70	12	3,170							<1	<1	17	40	10	1,915	64	13	2,158				168,362
15. Open Water	0	0	0							0	0	0	0	0	0	0	0	0				16,673
16. Pinyon-juniper	67	10	2,436							<1	<1	52	175	31	5,121	175	31	5,125				50,613

Table 3.8-37 Summary of Region II Alternative Route Impacts to Vegetation Communities on USFS Lands

Vegetation Community/Habitat Type	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F			Lynndyl Alternative Connector			Total Acres of Vegetation Community/Habitat Type in Forest
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	
17. Riparian	0	0	0							0	0	0	0	0	0	0	0	0				0
18. Sagebrush Shrubland	178	25	7,534							<1	<1	13	67	12	2,107	78	14	2,292				187,523
19. Saltbush Shrubland	0	0	0							0	0	0	<1	<1	26	<1	<1	26				71
20. Tundra	0	0	0							0	0	0	0	0	0	0	0	0				57
21. Woody Riparian and Wetlands	2	<1	87							<1	<1	3	<1	<1	13	<1	<1	16				15,377

Alternative II-A (Applicant Proposed)

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region II include five federally listed and two candidate species, 65 BLM sensitive species, USFS sensitive species, and state-protected species. Species-specific impact discussions are presented below. Suitable habitat for the Mexican spotted owl and Utah prairie dog does not occur along Alternative II-A, therefore impacts are not expected to occur to these species. Section 3.7.6.4 presents a description of existing disturbance along Alternative II-A.

Greater Sage-grouse (Candidate)

Greater sage-grouse in northeastern Utah along Alternative II-A are found primarily in Uintah, Duchesne, Wasatch, and Juab counties. These counties support several of the largest greater sage-grouse populations in Utah.

As presented in **Table 3.8-32**, a total of 7 active leks occur within 4 miles of Alternative II-A (i.e., 7 active leks in Utah). In addition, Alternative II-A crosses a variety of greater sage-grouse habitats in Colorado and Utah (**Figure 3.8-3**).

The types of impacts to greater sage-grouse under Alternative II-A generally would be the same as discussed for Alternative I-A, but would differ in the amount of habitat disturbed. Alternative II-A crosses fewer leks with lower observed attendance rates in comparison to Alternatives II-D and II-E (**Tables 3.8-32** and **3.8-33**).

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas for greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). In addition, TWE has taken into account greater sage-grouse habitat (e.g., lek locations, occupied habitat, etc.) during the design phase of the Project and routed the transmission line around sensitive habitat types, to the extent possible. **SSWS-5** would require TWE to construct anti-perching devices and mark guy wires or use alternative structures in high quality greater sage-grouse habitat. These features would help reduce disturbance to sensitive habitat types, reduce the potential for predation on greater sage-grouse by raptors and corvids, and reduce the collision potential from guy wires. Nonetheless, given the amount of important greater sage-grouse habitat crossed by the proposed Project under Alternative II-A in northeastern Utah (**Table 3.8-32**), potential mortality from operation of the proposed Project is likely to be higher in comparison to Alternatives II-B and II-C. Potential impacts to greater sage-grouse resulting from operation of Alternative II-A are likely to be lower in comparison to Alternatives II-D and II-E.

Western Yellow-billed Cuckoo (Candidate)

Along Alternative II-A, extensive riparian habitat occurs at the confluence of the Duchesne, White, and Green rivers on the Uinta and Ouray Reservation (Grand and Uintah counties, Utah) (Bosworth 2003; Parrish et al. 2002) and sustains the largest breeding population of western yellow-billed cuckoos in Utah. This area is approximately 2 miles south of Alternative II-A. Additional habitat and documented occurrences of western yellow-billed cuckoos along Alternative II-A occurs in Utah County, Utah.

The types of impacts to the western yellow-billed cuckoo under Alternative II-A generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-A would result in the construction and operation disturbance of 90 acres and 12 acres, respectively, of potentially suitable riparian and wetland habitat. These areas represent 0.08 percent and 0.01 percent, respectively, of the available potential habitat within the Region II western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting

western yellow-billed cuckoos under Alternative II-A would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXP/NE)

The USFWS has designated white-tailed prairie dog colonies in Rio Blanco County, Colorado and Duchesne and Uintah counties, Utah, as NEP areas for black-footed ferrets. Alternative II-A is adjacent to the northern boundary of the Coyote Basin Reintroduction Primary Management Zone (PMZ). The Coyote Basin population was reintroduced in eastern Utah and western Colorado (Wolf Creek) in 1999. These locations currently support a very small population of black-footed ferrets that primarily inhabit the core of the reintroduction areas (UDWR 2003).

The types of impacts to black-footed ferrets under Alternative II-A generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-A would result in the construction and operation disturbance of 217 acres and 53 acres, respectively, of potentially suitable white-tailed prairie dog habitat in Uintah County, Utah. These areas represent 0.04 percent and 0.01 percent, respectively, of white-tailed prairie dog colony habitat within the Region II black-footed ferret analysis area.

While impacts under Alternative II-A to white-tailed prairie dog colonies outside of the PMZ have a low potential to result in direct loss of ferrets due to the small scattered colonies, habitat disturbance would still occur. Black-footed ferrets are dependent upon white-tailed prairie dog colonies for their survival, and loss of white-tailed prairie dog habitat under Alternative II-A may indirectly impact black-footed ferrets that occur outside of the PMZ.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors and black-footed ferrets.

Canada Lynx (Threatened)

Along Alternative II-A, the Canada lynx has the potential to occur within higher elevation coniferous forests in central Utah, primarily in the Uinta/Wasatch/Cache National Forest. This species is extremely rare in Utah, although transient Canada lynx from Colorado have been documented in Utah in the past 10 years. Impacts to the Canada lynx under Alternative II-A would include the construction and operation disturbance of 120 acres and 20 acres, respectively, of potential foraging and denning habitat and the incremental increase of habitat fragmentation from vegetation removal. These areas represent 0.03 percent and <0.01 percent, respectively, of coniferous forest habitat within the Region II special status wildlife analysis area (**Table 3.8-38**). Impacts would be more pronounced within occupied habitat. Impacts to habitat would include the loss of potential cover and den locations consisting of primarily large evergreen trees and downed woody debris. Loss of available foraging habitat (e.g., early succession high tree density areas preferred by the snowshoe hare) would result in impacts to Canada lynx. Indirect

Table 3.8-38 Summary of Region II Alternative Route Impact Parameters for Federally Listed and Candidate Species

	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Black-footed ferret potential habitat (acres)	217	53	21,182	67	15	5,375	122	27	9,169	201	51	18,896	254	63	24,719	201	51	18,896
Percent of existing habitat within the Region II black-footed ferret analysis area	0.04	0.01	4.09	0.01	<0.01	1.04	0.02	<0.01	1.77	0.04	<0.01	3.65	0.05	0.01	4.78	0.04	<0.01	3.65
Greater sage-grouse potential habitat (acres)	2,664	747	260,404	750	248	50,126	195	49	15,478	2,385	659	201,050	2,924	744	257,407	1,432	388	108,606
Percentage of existing habitat within the Region II greater sage-grouse analysis area	0.12	0.03	11.29	0.03	0.01	2.17	<0.01	<0.01	0.67	0.10	0.03	8.71	0.13	0.03	11.16	0.06	0.02	4.71
Western yellow-billed cuckoo potential habitat (acres)	90	12	3,706	63	7	3,160	56	8	3,151	26	4	813	62	9	2,635	32	7	1,606
Percentage of existing habitat within the Region II western yellow-billed cuckoo analysis area	0.08	0.01	3.34	0.06	<0.01	2.85	0.05	<0.01	2.84	0.02	<0.01	0.73	0.06	<0.01	2.38	0.03	<0.01	1.45
Canada lynx potential habitat (acres)	120	20	5,730	287	54	10,541	63	9	3,543	243	43	9,291	158	26	6,735	418	91	12,572
Percentage of existing habitat within the Region II Canada lynx analysis area	0.03	<0.01	1.20	0.06	0.01	2.21	0.01	<0.01	0.74	0.05	<0.01	1.94	0.03	<0.01	1.41	0.09	0.02	2.63
Utah prairie dog potential habitat (acres)	0	0	0	0	0	0	179	33	18,730	0	0	0	0	0	0	0	0	0

Table 3.8-38 Summary of Region II Alternative Route Impact Parameters for Federally Listed and Candidate Species

	Alternative II-A			Alternative II-B			Alternative II-C			Alternative II-D			Alternative II-E			Alternative II-F		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Percentage of existing habitat within the Region II Utah prairie dog analysis area	0	0	0	0	0	0	0.03	<0.01	13.8	0	0	0	0	0	0	0	0	0
Gray wolf potential habitat (acres)	7,829	1,017	289,969	11,130	1,299	402,949	11,679	1,203	429,949	8,724	1,137	313,162	8,349	1,064	297,851	8,982	1,295	303,756
Percentage of existing habitat within the Region II special status wildlife analysis area	0.08	0.01	2.96	0.11	0.01	3.98	0.12	0.01	4.25	0.09	0.01	3.10	0.08	0.01	2.94	0.09	0.01	3.00

impacts would include increased noise and human activity associated with Project construction. Indirect impacts to Canada lynx would include increased noise and human presence associated with maintenance activities.

Canada lynx habitat along Alternative II-A is scarce and primarily occurs in the Uinta National Forest in higher elevation north and west facing slopes with dense forest canopies. Alternative II-A does not cross any LAUs in Utah. Therefore, impacts to Canada lynx under Alternative II-A would be limited primarily to habitat loss and fragmentation.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

Impacts to the gray wolf under Alternative II-A generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-A would result in the construction and operation disturbance of 7,829 acres and 1,017 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.08 percent and 0.01 percent, respectively, of potential habitat within the Region II special status wildlife analysis area. Indirect impacts would occur to 289,969 acres, which represents 2.96 percent of gray wolf potential habitat within the Region II special status wildlife analysis area. Impacts to the gray wolf under Alternative II-A would be limited primarily to habitat loss and fragmentation.

Table 3.8-38 summarizes habitat impacts to federally listed species potentially occurring in Region II.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur in Region II are presented in **Table 3.8-39**. The types of impacts under Alternative II-A to BLM sensitive, USFS sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative II-A (e.g., sagebrush shrubland, pinyon-juniper, and montane shrubland) are more likely to be impacted under Alternative II-A. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Table 3.8-37 presents habitat acreage impacts by vegetation community/habitat type on USFS lands. Using **Table 3.8-37** in combination with the information presented in **Table 3.8-39**, habitat impacts for each species can be determined. For other sensitive species (BLM and state-protected), please refer to the corresponding vegetation community impacts tables in the Section 3.5, Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type.

Implementation of TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative II-A, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact to BLM sensitive, USFS sensitive, and state-protected species given the extent of native habitats in the surrounding Project region.

Table 3.8-39 BLM Sensitive and State-protected Species Potentially Occurring in Region II

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals - Bats	
Big brown bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, coniferous forest, deciduous forest, desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Big free-tailed bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, cliff and canyon, coniferous forest, deciduous forest, desert shrubland, grassland, herbaceous wetland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Brazilian free-tailed bat	Aspen forest and woodland, coniferous forest, desert shrubland, herbaceous wetland, montane shrubland, open water, sagebrush shrubland, saltbush shrubland
California myotis	Aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, greasewood flat, herbaceous wetland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Fringed myotis	Agricultural land, desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Hoary bat	Agricultural land, aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, grassland, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Long-eared myotis	Agricultural land, aspen forest and woodland, cliff and canyon, coniferous forest, deciduous forest, desert shrubland, greasewood flat, herbaceous wetland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Long-legged myotis	Aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, herbaceous wetland, montane shrubland, open water, pinyon/juniper, saltbush shrubland, woody riparian and wetlands
Pallid bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, coniferous forest, deciduous forest, desert shrubland, grassland, greasewood flat, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Silver-haired bat	Agricultural land, aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, greasewood flat, herbaceous wetland, open water, pinyon/juniper, sagebrush shrubland, woody riparian and wetlands
Spotted bat	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, cliff and canyon, coniferous forest, deciduous forest, desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Townsend's (Western) big-eared bat	Aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, greasewood flat, herbaceous wetland, montane shrubland, open water, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Western pipistrelle	Aspen forest and woodland, cliff and canyon, coniferous forest, desert shrubland, herbaceous wetland, open water, pinyon/juniper, saltbush shrubland
Western red bat	Agricultural land, deciduous forest, desert shrubland, herbaceous wetland, open water, woody riparian and wetlands
Western small-footed myotis	Barren/sparsely vegetated, cliff and canyon, coniferous forest, desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, open water, pinyon/juniper, woody riparian and wetlands

Table 3.8-39 BLM Sensitive and State-protected Species Potentially Occurring in Region II

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Yuma myotis	Agricultural land, aspen forest and woodland, barren/sparsely vegetated, cliff and canyon, deciduous forest, desert shrubland, grassland, greasewood flat, herbaceous wetland, montane shrubland, open water, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Mammals - Other	
Dark kangaroo mouse	Desert shrubland, grassland, sagebrush shrubland, saltbush shrubland
Desert bighorn sheep	Cliff and canyon, desert shrubland, montane grassland
Fisher	Aspen forest and woodland, coniferous forest, deciduous forest
Kit fox	Agricultural land, barren/sparsely vegetated, desert shrubland, grassland, montane grassland, sagebrush shrubland, saltbush shrubland
Pygmy rabbit	Sagebrush shrubland
River otter	Open water, woody riparian and wetlands
Rocky Mountain bighorn sheep	Cliff and canyon, coniferous forest, montane grassland, montane shrubland, tundra
White-tailed prairie dog	Barren/sparsely vegetated, desert shrubland, grassland, greasewood flat, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Wolverine	Coniferous forest, tundra
Birds	
American white pelican	Open water
White-faced ibis	Agricultural land, herbaceous wetland, open water
Bald eagle	Open water, woody riparian and wetlands
Northern goshawk	Aspen forest and woodland, coniferous forest
Swainson's hawk	Agricultural land, barren/sparsely vegetated, desert shrubland, grassland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Ferruginous hawk	Cliff and canyon, desert shrubland, grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Golden eagle	Agricultural land, cliff and canyon, desert shrubland, grassland, pinyon/juniper, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland, tundra
Peregrine falcon	Aspen forest and woodland, cliff and canyon, coniferous forest, deciduous forest, desert shrubland, grassland, herbaceous wetland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Prairie falcon	Cliff and canyon, desert shrubland, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Columbian sharp-tailed grouse	Grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, sagebrush shrubland, woody riparian and wetlands
Mountain plover	Agricultural land, barren/sparsely vegetated, grassland, montane grassland
Long-billed curlew	Agricultural land, grassland, herbaceous wetland, open water, woody riparian and wetlands
Black tern	Open water, herbaceous wetland
Flammulated owl	Aspen forest and woodland, coniferous forest
Burrowing owl	Agricultural land, barren/sparsely vegetated, desert shrubland, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland

Table 3.8-39 BLM Sensitive and State-protected Species Potentially Occurring in Region II

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Long-eared owl	Agricultural land, aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, grassland, montane grassland, pinyon/juniper, saltbush shrubland, woody riparian and wetlands
Short-eared owl	Agricultural land, grassland, greasewood flat, herbaceous wetland, montane grassland, sagebrush shrubland
Boreal owl	Aspen forest and woodland, coniferous forest
Black swift	Cliff and canyon, herbaceous wetland, open water, woody riparian and wetlands
Lewis' woodpecker	Aspen forest and woodland, coniferous forest, deciduous forest, pinyon/juniper, woody riparian and wetlands
Red-naped sapsucker	Aspen forest and woodland, coniferous forest, deciduous forest, woody riparian and wetlands
American three-toed woodpecker	Coniferous forest
Loggerhead shrike	Agricultural land, grassland, greasewood flat, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Gray vireo	Desert shrubland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Piñon jay	Coniferous forest, montane shrubland, pinyon/juniper
Juniper titmouse	Pinyon/juniper
Sage thrasher	Sagebrush shrubland
Bendire's thrasher	Desert shrubland, pinyon/juniper
Yellow-breasted chat	Woody riparian and wetlands
Brewer's sparrow	Sagebrush shrubland
Vesper sparrow	Grassland, montane grassland, sagebrush shrubland
Sage sparrow	Sagebrush shrubland
Bobolink	Agricultural land, grassland, herbaceous wetland
Reptiles	
Corn snake	Agricultural land, grassland, greasewood flat, herbaceous wetland, woody riparian and wetlands
Long-nosed leopard lizard	Barren/sparsely vegetated, desert shrubland, greasewood flat, sagebrush shrubland, saltbush shrubland
Midget faded rattlesnake	Cliff and canyon, coniferous forest, desert shrubland, greasewood flat, pinyon/juniper, montane shrubland, sagebrush shrubland, saltbush shrubland
Smooth greensnake	Agricultural land, aspen forest and woodland, coniferous forest, deciduous forest, grassland, greasewood flat, herbaceous wetland, montane grassland, woody riparian and wetlands
Utah milk snake	Agricultural land, aspen forest and woodland, coniferous forest, deciduous forest, desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Terrestrial Invertebrates	
Eureka mountains	Barren/sparsely vegetated, cliff and canyon, desert shrubland, grassland, montane grassland, montane shrubland, pinyon/juniper, sagebrush shrubland, saltbush shrubland
Great Basin silverspot (Nokomis fritillary butterfly)	Agricultural land, herbaceous wetland, woody riparian and wetlands

Strawberry IRA Micro-siting Options

TWE has developed three potential options to avoid or minimize the crossing of national forest IRAs along Alternative II-A. These are referred to as Strawberry Park micro-siting options 1, 2, and 3. These three micro-siting options would result in similar direct impacts to special status wildlife species habitat in comparison to Alternative II-A as shown in **Table 3.8-40**. Micro-siting options 2 and 3 would reduce the amount of habitat fragmentation in comparison to Alternative II-A as they would be collocated adjacent to an existing 345kV transmission line for approximately 4 miles. Any other differences in impacts to special status wildlife habitat are anticipated to be negligible in comparison to Alternative II-A.

Alternative II-B

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region II include five federally listed and two federal candidate species, 65 BLM sensitive, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Suitable habitat for the Utah prairie dog does not occur along Alternative II-B; therefore, impacts are not expected to occur to this species. Section 3.7.6.4 presents a description of existing disturbance along Alternative II-B.

Greater Sage-grouse (Candidate)

Greater sage-grouse distribution along Alternative II-B in Colorado is limited to a small area in Moffat County near Massadona and immediately south of U.S. Highway 40. Under Alternative II-B in Utah, greater sage-grouse are only found in very small areas of suitable habitat in western Emery County, western Sanpete County, and Juab County.

As presented in **Table 3.8-32**, no active leks occur within 4 miles of Alternative II-B. However, Alternative II-B crosses a variety of greater sage-grouse habitats in Colorado and Utah (**Figure 3.8-3**).

The types of impacts to greater sage-grouse under Alternative II-B generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and amount of habitat disturbed (**Table 3.8-32**).

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat that may help reduce potential raptor and corvid predation on greater sage-grouse. Given the minor amount of greater sage-grouse habitat crossed by the proposed Project under Alternative II-B (**Table 3.8-32**), potential impacts from operation of the proposed Project would be limited primarily to habitat loss and fragmentation.

Mexican Spotted Owl (Threatened)

Eastern Uintah County, Utah, along the Colorado/Utah border is the primary area of potential Mexican spotted owl habitat along Alternative II-B. However, the USFWS recently downgraded the habitat quality within 0.5 mile of Alternative II-B to unsuitable.

Due to the lack of suitable habitat along Alternative II-B, no impacts to this species are expected to occur.

Western Yellow-billed Cuckoo

The primary areas of potential occurrence for the western yellow-billed cuckoo along Alternative II-B are in Rio Blanco and Mesa counties, Colorado, and Grand County, Utah (USFWS 2011e).

The types of impacts to western yellow-billed cuckoo under Alternative II-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-B would result in the construction and operation disturbance of 63 acres and 7 acres,

respectively, of potentially suitable riparian and wetland habitat. These areas represent 0.06 percent and <0.01 percent, respectively, of suitable habitat within the Region II western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative II-B would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXP/NE)

The USFWS has designated white-tailed prairie dog colonies in Rio Blanco County, Colorado, as NEP areas for black-footed ferrets. Alternative II-B is adjacent to the eastern boundary of the Coyote Basin Reintroduction PMZ. The Coyote Basin population was reintroduced in eastern Utah and western Colorado (Wolf Creek) in 1999. These locations currently support a very small population of black-footed ferrets that inhabit primarily the core of the reintroduction areas (UDWR 2003).

The types of impacts to black-footed ferrets under Alternative II-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-B would result in the construction and operation disturbance of 67 acres and 15 acres, respectively, of potentially suitable white-tailed prairie dog habitat in Rio Blanco County, Colorado. These areas represent 0.01 percent and <0.01 percent, respectively, of white-tailed prairie dog colony habitat within the Region II black-footed ferret analysis area.

While impacts under Alternative II-B to white-tailed prairie dog colonies outside of the PMZ have a low potential to result in direct loss of ferrets due to the small scattered colonies, habitat disturbance would still occur. Black-footed ferrets are dependent upon white-tailed prairie dog colonies for their survival, and loss of white-tailed prairie dog habitat under Alternative II-B may indirectly impact black-footed ferrets that occur outside of the PMZ.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Canada Lynx (Threatened)

Along Alternative II-B, the Canada lynx has the potential to occur within higher elevation coniferous forests in central Utah, primarily in the Manti-La Sal and Uinta National Forests. This species is extremely rare in Utah, although transient Canada lynx from Colorado have been documented in Utah in the past 10 years.

Table 3.8-40 Summary of Region II Micro-siting Options Impact Parameters for Federally Listed and Candidate Species

Species	Strawberry IRA Micro-siting Option 1			Strawberry IRA Micro-siting Option 2			Strawberry IRA Micro-siting Option 3			Comparable – Strawberry IRA Micro-siting Options			Cedar Knoll IRA Micro-siting Option 1			Cedar Knoll Micro-siting Option 2			Comparable – Cedar Knoll Micro-siting Options		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Black-footed ferret potential habitat (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percentage of existing habitat within the Region II black-footed ferret analysis area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greater Sage-grouse potential habitat (acres)	1,112	356	109,018	1,112	356	109,018	1,111	356	109,018	1,107	355	109,018	10	7	1,533	10	7	1,533	10	7	1,533
Percentage of existing habitat within the Region II greater sage-grouse analysis area	0.05	0.02	4.73	0.05	0.02	4.73	0.05	0.02	4.73	0.05	0.02	4.73	<0.01	<0.01	0.07	<0.01	<0.01	0.07	<0.01	<0.01	0.07
Western yellow-billed cuckoo potential habitat (acres)	51	6	1,734	51	6	1,734	51	6	1,734	49	6	1,734	9	3	612	7	3	612	11	3	612
Percentage of existing habitat within the Region II western yellow-billed cuckoo analysis area	0.05	<0.01	1.56	0.05	<0.01	1.56	0.05	<0.01	1.56	0.04	<0.01	1.56	<0.01	<0.01	0.55	<0.01	<0.01	0.55	<0.01	<0.01	0.55
Canada lynx potential habitat (acres)	91	13	4,609	94	14	4,609	95	14	4,609	96	14	4,609	23	6	1,106	23	6	1,106	25	6	1,106
Percentage of existing habitat within the Region II Canada lynx analysis area	0.02	<0.01	<0.01	0.02	<0.01	<0.01	0.02	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table 3.8-40 Summary of Region II Micro-siting Options Impact Parameters for Federally Listed and Candidate Species

Species	Strawberry IRA Micro-siting Option 1			Strawberry IRA Micro-siting Option 2			Strawberry IRA Micro-siting Option 3			Comparable – Strawberry IRA Micro-siting Options			Cedar Knoll IRA Micro-siting Option 1			Cedar Knoll Micro-siting Option 2			Comparable – Cedar Knoll Micro-siting Options		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Utah prairie dog potential habitat (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percentage of existing habitat within the Region II Utah prairie dog analysis area	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray wolf potential habitat (acres)	2,251	298	95,284	2,250	298	95,284	2,249	298	95,284	2,254	299	95,284	1,042	212	36,705	1,042	212	36,705	1,034	211	36,705
Percentage of existing habitat within the Region II special status wildlife analysis area	0.02	<0.01	0.94	0.02	<0.01	0.94	0.02	<0.01	0.94	0.02	<0.01	0.94	0.01	<0.01	0.36	0.01	<0.01	0.36	0.01	<0.01	0.36

The types of impacts to the Canada lynx under Alternative II-B generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-B would result in the construction and operation disturbance of 287 acres and 54 acres, respectively, of potentially suitable habitat. These areas represent 0.06 percent and 0.01 percent, respectively, of the available Canada lynx habitat within the Region II special status wildlife analysis area.

Canada lynx habitat along Alternative II-B is scarce and primarily occurs in the Manti-La Sal and Uinta national forests. Habitat is limited to the higher elevation north and west facing slopes with dense forest canopies. Alternative II-B does not cross any LAUs in Utah. Therefore, impacts to Canada lynx under Alternative II-B would be limited primarily to habitat loss and fragmentation.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

Impacts to the gray wolf under Alternative II-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-B would result in the construction and operation disturbance of 11,130 acres and 1,299 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.11 percent and 0.01 percent, respectively, of potential habitat within the Region II special status wildlife analysis area. Indirect impacts would occur to 402,949 acres, which represents 3.98 percent of gray wolf potential habitat within the Region II special status wildlife analysis area. Impacts to the gray wolf under Alternative II-B would be limited primarily to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur in Region II are presented in **Table 3.8-39**. The types of impacts under Alternative II-B to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative II-B (e.g., sagebrush shrubland, pinyon-juniper, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative II-B, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region. Impacts would primarily be the result of habitat loss and fragmentation.

<u>Alternative II-C</u>

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region II include five federally listed and two federal candidate species, 65 BLM sensitive, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Section 3.7.6.4 presents a description of existing disturbance along Alternative II-C.

Greater Sage-grouse (Candidate)

As presented in **Table 3.8-32**, no active leks occur within 4 miles of Alternative II-C. However, Alternative II-C crosses a variety of greater sage-grouse habitats in Colorado and Utah (**Figure 3.8-3**).

The types of impacts to greater sage-grouse under Alternative II-C generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and the amount of habitat disturbed (**Table 3.8-32**).

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). In addition, TWE has taken into account greater sage-grouse habitat (e.g., lek locations, core areas, etc.) during the design phase of the Project and routed the transmission line around sensitive habitat types, to the extent possible. **SSWS-5** would require TWE to construct anti-perching devices and mark guy wires or use alternative structures in high quality greater sage-grouse habitat. These features would help reduce disturbance to sensitive habitat types, reduce the potential for predation on greater sage-grouse by raptors and corvids, and reduce the collision potential from guy wires. However, given the minor amount of greater sage-grouse habitat crossed by the proposed Project under Alternative II-C (**Table 3.8-32**), potential impacts would primarily be the result of habitat loss and fragmentation.

Mexican Spotted Owl (Threatened)

Eastern Uintah County, Utah, along the Colorado/Utah border is the primary area of potential Mexican spotted owl habitat along Alternative II-C. However, the USFWS has recently downgraded the habitat quality within 0.5 mile of Alternative II-C to unsuitable.

Due to the lack of suitable habitat along Alternative II-C, no impacts to this species are expected to occur.

Western Yellow-billed Cuckoo (Candidate)

The primary areas of potential occurrence for western yellow-billed cuckoo along Alternative II-C are in Rio Blanco and Mesa counties, Colorado, and Grand County, Utah (USFWS 2011e).

The types of impacts to the western yellow-billed cuckoo under Alternative II-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-C would result in the construction and operation disturbance of 56 acres and 8 acres, respectively, of potentially suitable riparian and wetland habitats. These areas represent 0.05 percent and <0.01 percent, respectively, of suitable habitat within the Region II western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative II-C would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project.

Black-footed Ferret (Endangered; EXNE)

The USFWS has designated white-tailed prairie dog colonies in Rio Blanco County, Colorado, as NEP areas for black-footed ferrets. Alternative II-C is located approximately 10 miles from the eastern boundary of the Coyote Basin Reintroduction Primary Management Zone (PMZ). The Coyote Basin population was reintroduced in eastern Utah and western Colorado (Wolf Creek) in 1999. These locations currently support a very small population of black-footed ferrets that inhabit primarily the core of the reintroduction areas (UDWR 2003).

The types of impacts to black-footed ferrets under Alternative II-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-C would result in the construction and operation disturbance of 122 acres and 27 acres, respectively, of potentially suitable white-tailed prairie dog colony habitat in Rio Blanco County, Colorado.

These areas represent 0.02 percent and <0.01 percent, respectively, of white-tailed prairie dog colony habitat within the Region II black-footed ferret analysis area.

While impacts under Alternative II-C to white-tailed prairie dog colonies outside of the PMZ have a low potential to result in direct loss of ferrets due to the small scattered colonies, habitat disturbance would occur. Black-footed ferrets are dependent upon white-tailed prairie dog colonies for their survival, and loss of white-tailed prairie dog habitat under Alternative II-C may indirectly impact black-footed ferrets that occur outside of the PMZ.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Canada Lynx (Threatened)

Along Alternative II-C, the Canada lynx has the potential to occur within higher elevation coniferous forests in central Utah, primarily in the Fishlake National Forest. This species is extremely rare in Utah, although transient Canada lynx from Colorado have been documented in Utah in the past 10 years.

The types of impacts to the Canada lynx under Alternative II-C generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-C would result in the construction and operation disturbance of 63 acres and 9 acres, respectively, of potentially suitable habitat. These areas represent 0.01 percent and <0.01 percent, respectively, of suitable habitat within the Region II special status wildlife analysis area.

Canada lynx habitat along Alternative II-C is scarce and primarily occurs in the Fishlake National Forest. Habitat is limited to the higher elevation north and west facing slopes with dense forest canopies. Alternative II-C does not cross any LAUs in Utah. Therefore, impacts to Canada lynx as a result of construction and operation under Alternative II-B would be limited primarily to habitat loss and fragmentation.

Utah Prairie Dog (Threatened)

Along Alternative II-C, the Utah prairie dog occurs in northern Sevier County, Utah. Alternative II-C also crosses a USFWS designated Utah Prairie Dog Recovery Unit.

The types of impacts to the Utah prairie dog may result in direct mortalities of individuals as a result of crushing from construction activities; vehicles and equipment; and from increased predation by raptors. Alternative II-C would result in the disturbance of potentially suitable habitat (**Table 3.8-38**). Alternative II-C would result in the construction and operation disturbance of 179 acres and 33 acres, respectively, of potentially suitable habitat. These areas represent 0.03 percent and <0.01 percent, respectively, of suitable habitat within the Region II Utah prairie dog analysis area. Additional impacts may result from increased habitat fragmentation, noxious weed invasion, and human activity and noise. Impacts to the Utah prairie dog may result from increased human activity and noise from maintenance.

***SSWS-7**: To reduce impacts to Utah prairie dogs, TWE would be required to conduct a preliminary habitat assessment along portions of the proposed Project that is within historic Utah prairie dog habitat. Based on the results of the habitat survey, additional surveys may be required by the USFWS to determine whether occupied habitat occurs within the disturbance footprint of the proposed Project. If occupied habitat is found, appropriate mitigation measures such as reroutes, reducing the width of the ROW, and constructing alternative structures types (e.g. H-frame tubular) with anti-perching devices on transmission line segments within occupied habitat, would be implemented in coordination with the BLM, Western, UDWR, and USFWS.*

Effectiveness: **SSWS-7** would reduce impacts to Utah prairie dogs by potentially reducing habitat disturbance within occupied habitat (e.g., reroutes) and by limiting raptor predation on Utah prairie dogs (i.e., anti-perching devices within occupied habitat).

It is not anticipated that construction activities would permanently alter Utah prairie dog colonies that would be crossed by the Project, and installation of the transmission line would not restrict the colonization of the 250-foot-wide transmission line ROW by Utah prairie dogs. In fact, habitat disturbance may encourage future colonization temporarily, based on the availability of soft, permeable soils that would occur along the ROW subsequent to the Project construction. Additionally, **SSWS-7** would identify suitable habitat and appropriate mitigation measures would be implemented in occupied habitat in coordination with the BLM, Western, UDWR, and USFWS. Impacts would primarily be the result of habitat loss and fragmentation.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The types of impacts to the gray wolf under Alternative II-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-C would result in the construction and operation disturbance of 11,679 acres and 1,203 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.12 percent and 0.01 percent, respectively, of potential habitat within the Region I special status wildlife analysis area. Indirect impacts would occur to 429,949 acres, which represents 4.25 percent of gray wolf potential habitat within the Region II special status wildlife analysis area. Impacts to the gray wolf under Alternative II-C would be limited primarily to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur along Alternative II-C in Region II are presented in **Table 3.8-39**. The types of impacts under Alternative II-C to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative II-C (e.g., sagebrush shrubland, pinyon-juniper, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative II-C, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region. Impacts would primarily result from habitat loss and fragmentation.

Alternative II-D

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region II include five federally listed and two federal candidate species, 65 BLM sensitive, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Section 3.7.6.4 presents a description of existing disturbance along Alternative II-D.

Greater Sage-grouse (Candidate)

As presented in **Table 3.8-32**, 10 active leks occur in Utah within 4 miles of Alternative II-D. Alternative II-D crosses a variety of greater sage-grouse habitats in Colorado and Utah (**Figure 3.8-3**).

The types of impacts to greater sage-grouse under Alternative II-D generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and the amount of habitat disturbed (**Table 3.8-32**). In comparison to Alternative II- A, impacts to sage-grouse under Alternative II-D are likely to be higher because this alternative crosses three more leks within 4 miles that have demonstrated increased attendance rates between 2003 and 2012 (**Table 3.8-33**).

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). In addition, TWE has taken into account greater sage-grouse habitat (e.g., lek locations, core areas, etc.) during the design phase of the Project and routed the transmission line around sensitive habitat types, to the extent possible. **SSWS-5** would require TWE to construct anti-perching devices and mark guy wires or to use alternative structures in high quality greater sage-grouse habitat. These features would help reduce disturbance to sensitive habitat types, reduce the potential for predation on greater sage-grouse by raptors and corvids, and reduce the collision potential from guy wires. However, given the minor amount of greater sage-grouse habitat crossed by the proposed Project under Alternative II-D (**Table 3.8-32**), impacts would primarily be the result of habitat loss and fragmentation.

Mexican Spotted Owl (Threatened)

Southern Duchesne County, Utah, along the southern border of the Ashley National Forest, is the primary area of potential Mexican spotted owl habitat along Alternative II-D. The types of impacts to the Mexican spotted owl under Alternative II-D generally would be the same as described for raptors and other migratory birds under Alternative II-A, but would differ in the amount of habitat disturbed. Under Alternative II-D, impacts to the Mexican spotted owl may occur as a result of the construction and operation disturbance of 8 acres and 2 acres, respectively, of potentially suitable coniferous forest habitat. These areas represent 0.02 percent and 0.01 percent, respectively, of suitable habitat within the Region II Mexican spotted owl analysis area.

Implementation of TWE's design features for meeting or exceeding the raptor safe design standards described in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) (TWE-30) would reduce operation-related impacts to Mexican spotted owls. Remaining impacts to Mexican spotted owls would be limited to temporary disturbance of potential foraging habitat. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of foraging habitat in the surrounding Project region.

Western Yellow-billed Cuckoo (Candidate)

The primary areas of potential western yellow-billed cuckoo occurrence along Alternative II-D are in Rio Blanco and Mesa counties, Colorado, and Grand County, Utah (USFWS 2011e).

The types of impacts to western yellow-billed cuckoo under Alternative II-D generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Under Alternative II-D, impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 26 acres and 4 acres, respectively, of potentially suitable woody riparian and

wetland habitats. These areas represent 0.02 percent and <0.01 percent, respectively, of suitable habitat within the Region II western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative II-D would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXNE)

The USFWS has designated white-tailed prairie dog colonies in Rio Blanco County, Colorado, as NEP areas for black-footed ferrets. Alternative II-D is located approximately 6 miles from the northern boundary of the Coyote Basin Reintroduction Primary Management Zone (PMZ). The Coyote Basin population was reintroduced in eastern Utah and western Colorado (Wolf Creek) in 1999. These locations currently support a very small population of black-footed ferrets that inhabit primarily the core of the reintroduction areas (UDWR 2003).

The types of impacts to black-footed ferrets under Alternative II-D generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-D would result in the construction and operation disturbance of 201 acres and 51 acres, respectively, of potentially suitable white-tailed prairie dog colony habitat in Rio Blanco County, Colorado. These areas represent 0.04 percent and <0.01 percent, respectively, of white-tailed prairie dog colony habitat within the Region II black-footed ferret analysis area.

While impacts under Alternative II-D to white-tailed prairie dog colonies outside of the PMZ have a low potential to result in direct loss of ferrets due to the small scattered colonies, habitat disturbance would still occur. Black-footed ferrets are dependent upon white-tailed prairie dog colonies for their survival, and loss of white-tailed prairie dog habitat under Alternative II-D may indirectly impact black-footed ferrets that occur outside of the PMZ.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Canada Lynx (Threatened)

Along Alternative II-D, the Canada lynx has the potential to occur within higher elevation coniferous forests in central Utah, primarily in the Manti-La Sal National Forest. This species is extremely rare in Utah, although transient Canada lynx from Colorado have been documented in Utah in the past 10 years.

The types of impacts to the Canada lynx under Alternative II-D generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-D would result in the construction and operation disturbance of 243 acres and 43 acres, respectively, of potentially

suitable habitat. These areas represent 0.05 percent and <0.01 percent, respectively, of suitable habitat within the Region II Canada lynx analysis area.

Canada lynx habitat along Alternative II-D is scarce and primarily occurs in the Manti-La Sal National Forest. Habitat is limited to the higher elevation north and west facing slopes with dense forest canopies. Alternative II-D does not cross any LAUs in Utah. Therefore, impacts to Canada lynx as a result of Alternative II-D are limited primarily to habitat loss and fragmentation.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The types of impacts to the gray wolf under Alternative II-D generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-D would result in the construction and operation disturbance of 8,724 acres and 1,137 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.09 percent and 0.01 percent, respectively, of potential habitat within the Region II special status wildlife analysis area. Indirect impacts would occur to 313,162 acres, which represents 3.10 percent of gray wolf potential habitat within the Region II special status wildlife analysis area. Impacts to the gray wolf under Alternative II-D would be limited primarily to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur along Alternative II-D are presented in **Table 3.8-39**. The type s of impacts under Alternative II-D to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative II-D (e.g., sagebrush shrubland, pinyon-juniper, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative II-D, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region. Impacts would primarily be the result of habitat loss and fragmentation.

<u>Alternative II-E</u>

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region II include five federally listed and two federal candidate species, 65 BLM sensitive, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Section 3.7.6.4 presents a description of existing disturbance along Alternative II-E.

Greater Sage-grouse (Candidate)

As presented in **Table 3.8-32**, 10 active leks occur in Utah within 4 miles of Alternative II-E. Alternative II-E crosses a variety of greater sage-grouse habitats in Colorado and Utah (**Figure 3.8-3**).

The types of impacts to greater sage-grouse under Alternative II-E generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and the amount of habitat disturbed (**Table 3.8-32**). In comparison to Alternative II-A, impacts to sage-grouse are likely to be higher

because Alternative II-E crosses 3 more leks within 4 miles that have demonstrated increased attendance rates between 2003 and 2012 (**Table 3.8-33**).

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). In addition, TWE has taken into account greater sage-grouse habitat (e.g., lek locations, core areas, etc.) during the design phase of the Project and routed the transmission line around sensitive habitat types, to the extent possible. **SSWS-5** would require TWE to construct anti-perching devices and mark guy wires or to use alternative structures in high quality greater sage-grouse habitat. These features would help reduce disturbance to sensitive habitat types, reduce the potential for predation on greater sage-grouse by raptors and corvids, and reduce the collision potential from guy wires. However, given the minor amount of greater sage-grouse habitat crossed by the proposed Project under Alternative II-E (**Table 3.8-32**), impacts primarily would be the result of habitat loss and fragmentation.

Mexican Spotted Owl (Threatened)

No suitable habitat for this species is located within the 2-mile project corridor of Alternative II-E. The nearest suitable habitat for is located approximately 7 miles to the southwest at the confluence of Dry and Argyle Canyons, 25 miles northeast of Price, Utah. The types of impacts to the Mexican spotted owl under Alternative II-E generally would be the same as described for raptors and other migratory birds under Alternative II-A, but would differ in the amount of habitat disturbed (Section 3.7.6.3).

Due to the lack of suitable habitat along Alternative II-E, impacts to this species are expected to be negligible. Implementation of TWE's design features for meeting or exceeding the raptor safe design standards described in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) (TWE-30) would reduce operation-related impacts to Mexican spotted owls. Remaining impacts to Mexican spotted owls would be limited to temporary disturbance of potential foraging habitat.

Western Yellow-billed Cuckoo (Candidate)

The primary areas of potential western yellow-billed cuckoo occurrence along Alternative II-E are in Rio Blanco County, Colorado (USFWS 2011e).

The types of impacts to the western yellow-billed cuckoo under Alternative II-E generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Under Alternative II-E, impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 62 acres and 9 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.06 percent and <0.01 percent, respectively, of suitable habitat within the Region II western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative II-E would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXNE)

The USFWS has designated white-tailed prairie dog colonies in Rio Blanco County, Colorado, as NEP areas for black-footed ferrets. Alternative II-E is located approximately 6 miles from the northern boundary of the Coyote Basin Reintroduction Primary Management Zone (PMZ).

The types of impacts to black-footed ferrets under Alternative II-E generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed. Alternative II-E would result in the construction and operation disturbance of 254 acres and 63 acres, respectively, of potentially suitable white-tailed prairie dog colony habitat in Rio Blanco County, Colorado. These areas represent 0.05 percent and 0.01 percent, respectively, of white-tailed prairie dog colony habitat within the Region II black-footed ferret analysis area.

While impacts under Alternative II-E to white-tailed prairie dog colonies outside of the PMZ have a low potential to result in direct loss of ferrets due to the small scattered colonies, habitat disturbance would still occur. Black-footed ferrets are dependent upon white-tailed prairie dog colonies for their survival, and loss of white-tailed prairie dog habitat under Alternative II-E may indirectly impact black-footed ferrets that occur outside of the PMZ.

SSWS-9*: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Canada Lynx (Threatened)

Along Alternative II-E, the Canada lynx has the potential to occur within higher elevation coniferous forests in central Utah, primarily in the Unitah-Wasatch-Cache and Ashley national forests. This species is extremely rare in Utah, although transient Canada lynx from Colorado have been documented in Utah in the past 10 years.

The types of impacts to the Canada lynx under Alternative II-E generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-E would result in the construction and operation disturbance of 158 acres and 26 acres, respectively, of potentially suitable habitat. These areas represent 0.03 percent and <0.01 percent, respectively, of suitable habitat within the Region II Canada lynx analysis area.

Canada lynx habitat along Alternative II-E is scarce and occurs primarily in the Fishlake National Forest. Habitat is limited to the higher elevation north and west facing slopes with dense forest canopies. Alternative II-E does not cross any LAUs in Utah. Therefore, impacts to Canada lynx as a result of Alternative II-E are limited primarily to habitat loss and fragmentation.

Gray Wolf (Endangered in Utah and Colorado, EXP/NE in Wyoming)

The types of impacts to the gray wolf under Alternative II-E generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-E would result in the construction and operation disturbance of 8,349 acres and 1,064 acres, respectively, of potential gray wolf foraging and denning habitat. These areas represent 0.08 percent and 0.01 percent, respectively, of potential habitat within the Region II special status wildlife analysis area. Indirect impacts would occur to 297,851 acres, which represents 2.94 percent of gray wolf potential habitat within the Region II special status wildlife analysis area. Impacts to the gray wolf under Alternative II-E would be limited primarily to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur along Alternative II-E are presented in **Table 3.8-39**. The types of impacts under Alternative II-E to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative II-E (e.g., sagebrush shrubland, pinyon-juniper, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative II-E, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

Alternative II-F (Agency Preferred)

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region II include five federally listed and two federal candidate species, 65 BLM sensitive, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Section 3.7.6.4 presents a description of existing disturbance along Alternative II-F.

Greater Sage-grouse (Candidate)

As presented in **Table 3.8-32**, 15 active leks occur in Utah within 4 miles of Alternative II-F. Alternative II-F crosses a variety of greater sage-grouse habitats in Colorado and Utah (**Figure 3.8-3**).

The types of impacts to greater sage-grouse from Alternative II-F generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and amount of habitat disturbed (**Table 3.8-32**). In comparison to Alternative II-A, impacts to greater sage-grouse are likely to be higher because Alternative II-F crosses 8 more leks within 4 miles that have demonstrated increased attendance rates between 2003 and 2012 (**Table 3.8-33**).

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). In addition, TWE has taken into account greater sage-grouse habitat (e.g., lek locations, core areas, etc.) during the design phase of the Project and routed the transmission line around sensitive habitat types, to the extent possible. **SSWS-5** would require TWE to construct anti-perching devices and mark guy wires or to use alternative structures in high quality greater sage-grouse habitat. These features would help reduce disturbance to sensitive habitat types, reduce the potential for predation on greater sage-grouse by raptors and corvids, and reduce the collision potential from guy wires. However, given the minor amount of greater sage-grouse habitat crossed by the proposed Project under Alternative II-F (**Table 3.8-32**), potential mortality from operation of the proposed Project is expected to be limited primarily to habitat loss and fragmentation.

Mexican Spotted Owl (Threatened)

Southern Duchesne County, Utah, along the southern border of the Ashley National Forest, is the primary area of potential Mexican spotted owl habitat along Alternative II-F. The types of impacts to the Mexican spotted owl under Alternative II-F generally would be the same as described for raptors and other migratory birds under Alternative II-A, but would differ in the amount of habitat disturbed. Under

Alternative II-F, impacts to the Mexican spotted owl may occur as a result of the construction and operation disturbance of 8 acres and 2 acres, respectively, of potentially suitable coniferous forest habitat. These areas represent 0.021 percent and 0.005 percent, respectively, of suitable habitat within the Region II mexican spotted owl analysis area.

Implementation of TWE's design features for meeting or exceeding the raptor safe design standards described in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) (TWE-30) would reduce operation-related impacts to Mexican spotted owls. Remaining impacts to Mexican spotted owls would be limited to temporary disturbance of potential foraging habitat. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of foraging habitat in the surrounding Project region.

Western Yellow-billed Cuckoo (Candidate)

The primary area of potential western yellow-billed cuckoo occurrence along Alternative II-F is in Rio Blanco County, Colorado (USFWS 2011e).

The types of impacts to the western yellow-billed cuckoo from Alternative II-F generally would be the same as described for Alternative I-A (**Table 3.8-38**). Under Alternative II-F, impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation loss of 32 acres and 7 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.03 percent and <0.01 percent, respectively, of suitable habitat within the Region II western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts to the western yellow-billed cuckoo during the breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative II-F would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Black-footed Ferret (Endangered; EXNE)

The USFWS has designated white-tailed prairie dog colonies in Rio Blanco County, Colorado, as NEP areas for black-footed ferrets. Alternative II-F is located approximately 6 miles from the northern boundary of the Coyote Basin Reintroduction PMZ. The types of impacts to black-footed ferrets from Alternative II-F generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-F would result in the construction and operation disturbance of 201 acres and 51 acres, respectively, of potentially suitable white-tailed prairie dog colony habitat in Rio Blanco County, Colorado. These areas represent 0.04 percent and <0.01 percent, respectively, of white-tailed prairie dog colony habitat within the Region II black-footed ferret analysis area.

While impacts under Alternative II-F to white-tailed prairie dog colonies outside of the PMZ have a low potential to result in direct loss of ferrets due to the small scattered colonies, habitat disturbance would still occur. Black-footed ferrets are dependent upon white-tailed prairie dog colonies for their survival, and loss of white-tailed prairie dog habitat under Alternative II-F may indirectly impact black-footed ferrets that occur outside of the PMZ.

***SSWS-9**: To reduce impacts to black-footed ferret from operation of the proposed Project, design features specific to black-footed ferret would be implemented.*

- *To limit raptor predation on black-footed ferret, TWE would be required to construct anti-perching devices and alternative structure types on segments of the proposed Project near high quality black-footed ferret habitat (e.g., within areas of active white-tailed prairie dog colonies) in consultation with the BLM, Western, and applicable state wildlife agencies.*

Effectiveness: **SSWS-9** would help minimize the potential for increased predation on black-footed ferret by limiting raptor perching locations. While transmission lines fitted with anti-perching devices do not necessarily eliminate perching entirely (Lammers and Collopy 2007), they are designed to discourage use of the transmission line as a hunting perch which may in turn decrease the potential for predation by raptors on black-footed ferrets.

Canada Lynx (Threatened)

Along Alternative II-F, the Canada lynx has the potential to occur within higher elevation coniferous forests in central Utah, primarily in the Unitah-Wasatch-Cache and Ashley national forests. This species is extremely rare in Utah, although transient Canada lynx from Colorado have been documented in Utah in the past 10 years.

The types of impacts to the Canada lynx from Alternative II-F generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Alternative II-F would result in the construction and operation disturbance of 418 acres and 91 acres, respectively, of potentially suitable habitat. These areas represent 0.09 percent and 0.02 percent, respectively, of suitable habitat within the Region II Canada lynx analysis area.

Canada lynx habitat under Alternative II-F is scarce and occurs primarily in the Fishlake National Forest. Habitat is limited to the higher elevation north and west facing slopes with dense forest canopies. Alternative II-F does not cross any LAUs in Utah. Therefore, impacts to Canada lynx as a result of construction and operation under Alternative II-F are limited primarily to habitat loss and fragmentation.

Gray Wolf

The types of impacts to the gray wolf under Alternative II-F generally would be the same as described for Alternative II-A, but would differ in the amount of habitat disturbed (**Table 3.8-38**). Impacts to gray wolves under Alternative II-F would occur as the result of the construction and operation disturbance of 8,982 acres and 1,295 acres, respectively, of potential denning and foraging habitat. These areas represent 0.09 percent and 0.01 percent, respectively, of potential habitat within the Region II special status wildlife analysis area. Indirect impacts would occur to 303,756 acres, which represents 3.00 percent of gray wolf potential habitat within the Region II special status wildlife analysis area. Impacts to the gray wolf as a result of Alternative II-F are limited primarily to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur along Alternative II-F are presented in **Table 3.8-39**. The types of impacts under Alternative II-F to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative II-F (e.g., sagebrush shrubland, pinyon-juniper, and saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32, **WLF-1**, and **SSWS-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative II-F, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

Cedar Knoll IRA Micro-siting Options

TWE has developed two potential options to avoid or minimize the crossing of national forest IRAs along Alternatives II-E and II-F. These are referred to as Cedar Knoll micro-siting options 1 and 2. Both of these micro-siting options would result in similar acreages of direct impacts to special status species wildlife habitat in comparison to Alternatives II-E and II-F. However, both of these micro-siting options would be collocated adjacent to an existing 345-kV transmission line while Alternatives II-E and II-F would not be collocated with existing transmission in this area. This aspect of the micro-siting options would result in reduced habitat fragmentation in comparison to Alternatives II-E and II-F. All other differences in impacts to wildlife habitat are anticipated to be negligible in comparison to Alternatives II-E and II-F.

Alternative Variation in Region II

Emma Park Alternative Variation

Several routes have been developed in the Emma Park area north of Price, Utah, to avoid greater sage-grouse potential habitat. One route is aligned east-west and is analyzed as the Emma Park Alternative Variation. This variation and the comparable portion of Alternative II-F do not cross the Fishlake or Manti-La Sal national forests. **Table 3.8-41** summarizes Region II alternative variation impact parameters for special status wildlife species. The Emma Park Alternative Variation would result in direct impacts to approximately 149 acres of construction impacts and 55 acres of operation impacts to greater sage-grouse occupied habitat as shown in **Table 3.8-41**. Comparable segments of Alternative II-F would avoid impacts to greater sage-grouse habitat. The Emma Park Alternative variation would be located within 4 miles of 7 active greater sage-grouse leks while comparable segments of Alternative II-F would be located greater than 4 miles from any active leks.

Table 3.8-41 Summary of Region II Alternative Variation Impact Parameters for Federally Listed and Candidate Species

Species	Emma Park Alternative Variation			Comparable – Emma Park Alternative Variation		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Black-footed ferret potential habitat (acres)	0	0	0	0	0	0
Percentage of existing habitat within the Region II black-footed ferret analysis area	0	0	0	0	0	0
Greater Sage-grouse potential habitat (acres)	149	55	8,975	0	0	0
Percentage of existing habitat within the Region II greater sage-grouse analysis area	<0.01	<0.01	0.39	0	0	0
Western yellow-billed cuckoo potential habitat (acres)	<1	<1	5	<1	<1	5
Percentage of existing habitat within the Region II western yellow-billed cuckoo analysis area	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Canada lynx potential habitat (acres)	63	15	2,992	358	79	9,788
Percentage of existing habitat within the Region II Canada lynx analysis area	0.01	<0.01	<0.01	0.07	0.02	0.02
Utah prairie dog potential habitat (acres)	0	0	0	0	0	0
Percentage of existing habitat within the Region II Utah prairie dog analysis area	0	0	0	0	0	0
Gray wolf potential habitat (acres)	1,242	214	35,514	1,182	234	27,323
Percentage of existing habitat within the Region II special status wildlife analysis area	0.01	<0.01	0.35	0.01	<0.01	0.27

Alternative Connectors in Region II

The Lynndyl, IPP East, and Castle Dale alternative connectors would increase the total special status wildlife species habitat disturbance, if they were to be utilized. These connectors do not cross greater sage-grouse habitat. The Price Alternative Connector does cross occupied greater sage-grouse habitat and would increase the total special status wildlife species habitat disturbance, if utilized. **Table 3.8-42** summarizes impacts associated with the alternative connectors in Region II.

Table 3.8-42 Summary of Region II Alternative Connector Impact Parameters for Special Status Wildlife Species

Alternative Connector	Analysis
Highway 191 Alternative Connector	• Approximately 5 miles in length.[1] • No special status raptor nests are within 1 mile of the reference line.
Lynndyl Alternative Connector (Alternatives II-B and II-C)	• Approximately 24 miles in length.[1] • No special status raptor nests are within 1 mile of the reference line.
IPP East Alternative Connector (Alternatives II-A and II-B)	• Approximately 3 miles in length.[1] • No special status raptor nests are within 1 mile of the reference line.
Castle Dale Alternative Connector	• Approximately 11 miles in length.[1] • Six special status raptor nests are within 1 mile of the reference line.
Price Alternative Connector	• Approximately 18 miles in length.[1] • Twenty-nine special status raptor nests are within 1 mile of the reference line.

[1] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Region II Conclusion

A comparison of impact parameters for Region II alternatives indicates that potential construction and operation impacts to special status wildlife species would be varied across all alternatives as shown in **Table 3.8-38**. Alternative II-E would result in the greatest direct and indirect impacts to greater sage-grouse potential habitat in comparison to the other Region II alternatives (**Table 3.8-38**). Alternative II-A would result in the greatest direct and indirect impacts to Western yellow-billed cuckoo potential habitat in comparison to the other Region II alternatives (**Table 3.8-38**). Alternative II-C would result in the greatest direct and indirect impacts to Utah prairie dog and gray wolf potential habitat in comparison to the other Region II alternatives (**Table 3.8-38**). Alternative II-E would result in the greatest direct and indirect impacts to black-footed ferret potential habitat in comparison to the other Region II alternatives (**Table 3.8-38**). Alternative II-F would result in the greatest direct and indirect impacts to Canada lynx potential habitat in comparison to the other Region II alternatives (**Table 3.8-38**). The greatest level of impacts to special status wildlife species among all Region II alternatives associated with Alternative II-E is due to significantly greater impacts to greater sage-grouse and black-footed ferret potential habitat. However, project effects on special status wildlife species and their potential habitat would be avoided or considered to be low magnitude and short-term after applying BMPs, design features, and additional mitigation.

3.8.6.6 Region III

Tables 3.8-43, **3.8-44**, **3.8-45**, **3.8-46**, and **3.8-47** provide a tabulation of impacts associated with the alternative routes in Region III. Key impact parameters that relate to the impact discussion in Section 3.8.6.2, Impacts to Special Status Species Common to All Alternative Routes and Associated Components, and specific differences by alternative are discussed below. The Dixie National Forest is crossed by the Project in Region III. **Table 3.8-48** presents impacts to USFS sensitive species habitat on

Dixie National Forest lands, which are crossed by alternative routes and other project components in Region III.

Desert Tortoise (Threatened)

Potential impacts to the desert tortoise would result from incremental increases in habitat fragmentation caused by vegetation removal and other surface-disturbing activities associated with transmission line construction. Other direct impacts could occur as a result of mortality caused by construction equipment and support vehicles crushing individuals and destroying burrows. Long-term increases in vehicle traffic and human activity associated with operations also could have adverse effects on the desert tortoise.

The number of occupied greater sage-grouse leks visible from the reference lines and the average distance of occupied leks visible from the reference lines in Region III are presented in **Table 3.8-45**. There are no occupied leks visible from within 4 miles of the reference lines associated with either Alternative III-B or III-C. Alternative III-A would impact 1 occupied lek visible from the reference line. No impacts to greater sage-grouse leks are expected to occur under Alternatives III-B and III-C. Although Alternative III-A would impact 1 occupied lek, implementation of **SSWS-5** would limit raptor and corvid predation and impacts to greater sage-grouse visible from the reference line. Thus, impacts associated with this occupied lek are expected to be low magnitude. A summary of assumptions regarding the lek visibility analysis is located in Section 3.8.6.3 under the Region I discussion of impacts to greater sage-grouse.

These impacts would be more pronounced within occupied habitat and USFWS critical habitat. In most instances, suitable habitat adjacent to disturbed areas would continue to be available for use by this species. However, displacement would increase competition and could result in some local reductions in desert tortoise populations if adjacent habitats are at carrying capacity.

SSWS-4*: To avoid and minimize impacts to the desert tortoise and its habitat, TWE would conduct field surveys in identified desert tortoise habitat following approved USFWS protocols. TWE would coordinate with the BLM, Western, Boulder City, Clark County, Nevada, Bureau of Reclamation, and USFWS to implement appropriate mitigation measures during construction, including but not limited to, fencing, preconstruction surveys, and relocating desert tortoises.*

Effectiveness: The implementation of **SSWS-4** would avoid and minimize impacts to the desert tortoise in Region III by first identifying suitable and occupied habitat and then implementing appropriate mitigation measures in coordination with the BLM, Western, and USFWS.

Several factors would combine to help minimize impacts to the desert tortoise resulting from the construction of Region III alternatives routes. First, through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise habitat would be identified and avoided where possible. Second, by implementing **SSWS-4**, direct impacts to desert tortoises would be reduced because appropriate mitigation measures approved by the USFWS would be implemented. Therefore, impacts to the desert tortoise resulting from the Region III alternative routes would be limited primarily to habitat loss and fragmentation.

Table 3.8-43 Summary of Region III Alternative Route Impact Parameters for Desert Tortoise

Parameter	Alternative III-A			Alternative III-B			Alternative III-C		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
USFWS critical habitat (acres)	502	162	42,946	328	87	27,525	587	151	63,104
USFWS potential habitat (acres)	993	299	85,863	1,081	279	98,374	985	242	100,923
USGS habitat model ranking 0.6 and higher (acres)	1,173	358	101,342	1,035	266	93,547	965	236	97,575

Table 3.8-44 Summary of Region III Alternative Route Impact Parameters for Greater Sage-grouse

Parameter	Alternative III-A			Alternative III-B			Alternative III-C		
Number of active leks within 4 miles of reference lines in Utah	1			0			0		
Length of transmission line in miles (habitat fragmentation and collision potential)	276			285			308		
Habitat Disturbance	**Construction Impact**	**Operation Impact**	**Indirect Impact**	**Construction Impact**	**Operation Impact**	**Indirect Impact**	**Construction Impact**	**Operation Impact**	**Indirect Impact**
Utah occupied habitat (acres)[1]	115	24	16,756	0	0	0	0	0	0
Utah brood-rearing areas (acres)	115	24	16,749	0	0	0	0	0	0
Utah wintering habitat (acres)	115	24	16,721	0	0	0	0	0	0

[1] Occupied habitat includes brood-rearing habitat and wintering habitat.

Table 3.8-45 Summary of Region III Alternate Route Impact Parameters (Visibility) for Greater Sage-grouse

Parameter	Alternative III-A	Alternative III-B	Alternative III-C
Utah			
Number of visible occupied leks within 0.5 miles of reference lines[1]	0	0	0
Number of visible occupied leks within 1 mile of reference lines	0	0	0
Number of visible occupied leks within 2 miles of reference lines	0	0	0
Number of visible occupied leks within 3 miles of reference lines	0	0	0
Number of visible occupied leks within 4 miles of reference lines	1	0	0
Average distance of visible leks within 4 miles of reference lines	3.44	-	-
Length of transmission line in miles (habitat fragmentation and collision potential)[2]	276	285	308

[1] Occupied habitat includes brood-rearing habitat and wintering habitat.

[2] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Table 3.8-46 Summary of Region III Alternative Route Impact Parameters for Utah Prairie Dog

Parameter	Alternative III-A		Alternative III-B		Alternative III-C	
	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact
Utah prairie dog colonies in high intensity survey areas (acres)[1]	54	21	57	24	65	29
Utah prairie dog colonies in low intensity survey areas (acres)[1]	23	10	29	12	36	15

[1] Acreages of Utah prairie dog colonies will be updated with 2013 survey results.

Table 3.8-47 Special Status Raptor Nests and Winter Roosts Within 1 Mile of the Reference Line in Region III[1]

Species	Alternative III-A	Alternative III-B	Alternative III-C	Ox Valley East Alternative Variation	Ox Valley West Alternative Variation	Ox Valley Alternative Variation Comparable Portion of Alternative III-A	Pinto Alternative Variation	Pinto Alternative Variation Comparable Portion of Alternative III-A	Avon Alternative Connector	Moapa Alternative Connector
Burrowing owl	7	6	6	0	0	0	0	0	0	0
Ferruginous hawk	30	13	13	0	0	0	1	3	0	0
Golden eagle	16	16	18	0	0	0	2	0	0	0
Prairie falcon	7	5	6	0	0	0	0	1	0	0
Long-eared owl	1	0	0	0	0	0	0	0	0	0
Unknown raptor species	147	79	82	1	1	11	3	50	0	0
Totals	208	119	125	1	1	11	6	54	0	0

[1] Nests of raptor species, which are not classified as special status, are tabulated in Section 3.7, Wildlife. Nests of unknown raptor species are tabulated in both Sections 3.7 and 3.8 because they may have been utilized by either special status raptors or non-special status raptors.

[2] Nests of other special status raptor species such as bald eagle and Swainson's hawk are not included due to the lack of documented nest sites within 1 mile of the reference line.

Sources: BLM Vernal FO 2009, 2011; BLM Rawlins FO 2009, 2010; BLM Rock Springs FO 2009; BLM Cedar City FO 2010; BLM Price FO 2008; BLM Ely FO 2007; BLM Little Snake FO 2011; EPG 2012, Manti-La Sal National Forest 2012; Ashley National Forest 2010; Uintah National Forest 2011; CDOW, BLM, USFS cooperative dataset 2009; NDOW 2012; AECOM 2012.

Table 3.8-48 Summary of Region III Alternative Route Impacts to Vegetation Communities on USFS-Administered Lands

Vegetation Community/ Habitat Type	Alternative III-A			Ox Valley East			Ox Valley East Comparison			Ox Valley West			Ox Valley West Comparison			Pinto Variation			Pinto Variation Comparison			Total Acres of Vegetation Community/ Habitat Type in Forest
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	
Dixie National Forest																						
1. Agricultural Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<1	<1	5	0	0	0	629
2. Aspen Forest and Woodland	<1	<1	11	5	1	90	<1	<1	85	5	1	78	<1	<1	11	<1	<1	17	<1	<1	11	196,825
3. Barren/ Sparsely Vegetated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26,266
4. Cliff and Canyon	<1	<1	62	6	<1	36	<1	<1	30	6	<1	30	<1	<1	62	<1	<1	15	<1	<1	62	93,023
5. Conifer Forest	<1	<1	1	<1	<1	4	0	0	4	<1	<1	4	0	0	0	<1	<1	8	<1	<1	1	537,641
6. Deciduous Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7. Desert Shrubland	33	4	1,031	1	<1	4	2	1	7	1	<1	5	2	1	154	<1	<1	1	<1	<1	29	5,265
8. Developed/ Disturbed Land	10	1	225	6	1	0	9	1	142	5	1	78	9	1	185	14	1	231	8	1	191	26,479
9. Dunes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10. Grassland	3	<1	50	2	1	149	2	<1	153	2	1	146	2	<1	25	4	<1	122	2	<1	28	2,010
11. Greasewood Flat	<1	<1	6	0	0	0	<1	<1	0	0	0	0	<1	<1	6	0	0	0	<1	<1	6	19
12. Herbaceous Wetland	<1	<1	3	0	0	0	<1	<1	0	0	0	0	<1	<1	3	<1	<1	2	<1	<1	<1	4,438
13. Montane Grassland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,854
14. Montane Shrubland	22	7	1,827	72	15	2,609	18	7	2,551	69	15	2,500	18	7	1,737	8	1	518	18	7	1,731	106,207
15. Open Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,445
16. Pinyon-juniper	293	53	13,966	285	45	8,402	233	42	8,153	277	43	5,054	233	42	8,822	490	56	19,225	245	45	11,410	521,470
17. Riparian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18. Sagebrush Shrubland	251	33	6,419	194	30	5,107	210	29	4,840	196	31	3,790	210	29	5,373	215	20	5,009	235	31	5,666	315,223

Table 3.8-48 Summary of Region III Alternative Route Impacts to Vegetation Communities on USFS-Administered Lands

Vegetation Community/ Habitat Type	Alternative III-A			Ox Valley East			Ox Valley East Comparison			Ox Valley West			Ox Valley West Comparison			Pinto Variation			Pinto Variation Comparison			Total Acres of Vegetation Community/ Habitat Type in Forest
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	
19. Saltbush Shrubland	<1	<1	8	0	0	0	<1	<1	0	0	0	0	<1	<1	8	<1	<1	11	<1	<1	8	497
20. Tundra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16,504
21. Woody Riparian and Wetlands	5	1	213	8	3	547	5	1	540	8	3	526	5	1	197	1	<1	143	5	1	197	15,660

Alternative III-A (Applicant Proposed)

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region III include 5 federally listed and 2 federal candidate species, 76 BLM sensitive, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Suitable habitat for the Mexican spotted owl does not occur along Alternative III-A, therefore impacts are not expected to occur to this species. Section 3.7.6.4 presents a description of existing disturbance along Alternative III-A.

Desert Tortoise (Threatened)

The desert tortoise occurs along Alternative III-A in southern Washington County, Utah and Clark and Lincoln counties, Nevada. This species occurs exclusively within the Mojave Desert shrub community.

Potential impacts to the desert tortoise would include the disturbance of potentially suitable habitat and the incremental increase of habitat fragmentation from vegetation removal and other surface-disturbing activities (**Table 3.8-43**). Direct impacts to the desert tortoise may occur as a result of the construction and operation disturbance of 993 acres and 299 acres, respectively, of potentially suitable habitat. These areas represent 0.07 percent and 0.02 percent, respectively, of suitable habitat within the Region III desert tortoise analysis area. Additional loss of habitat, especially undisturbed occupied habitat and USFWS-designated critical habitat would result in an incremental reduction in the amount of available habitat in the Region III desert tortoise analysis area. Mortality as a result of crushing and burying also may result from construction activities. In most instances, suitable habitat adjacent to disturbed areas would continue to be available for use by this species. However, displacement would increase competition and could result in some local reductions in desert tortoise populations if adjacent habitats are at carrying capacity. Potential impacts also could include burrow abandonment or loss of eggs or young.

Operation-related impacts to desert tortoises under Alternative III-A would include increased human presence and noise during maintenance activities, which may result in displacement. Increased vehicle traffic within occupied desert tortoise habitat may lead to mortalities as a result of crushing. Direct mortality could result from construction personnel or members of the public handling tortoises. Desert tortoises expel their water reserve as a defense mechanism and can die if they aren't able to access water and rehydrate quickly. Also, there is potential for increased public access along Project roads to contribute to the problem of members of the public bringing desert tortoises home for pets.

Several factors would combine to help minimize impacts to the desert tortoise as a result of the construction of Alternative III-A. First, through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise habitat would be identified and avoided where possible. Second, by implementing **SSWS-4**, direct impacts to the desert tortoise would be reduced as appropriate mitigation measures approved by the USFWS would be implemented. Therefore, impacts under Alternative III-A would be limited primarily to habitat loss and fragmentation.

California Condor (Endangered; EXNE)

Condors regularly forage, roost, and may even nest in southern Utah (Gorell et al. 2005). Based on their ability to travel up to 200 miles in a day (UDNR 2011), this species may be found along Alternative III-A. The current range of this population is centered on the Colorado River Basin in northern Arizona and southern Utah. Although condors often winter in Arizona, many condors from the southwestern population forage over Utah. They can travel back and forth between the Grand Canyon and Zion National Park in a single day. Condors commonly occur in Utah between April and November, but peak numbers usually occur from June through August.

Because the species has such a large range, direct impacts from construction activities associated with Alternative III-A to foraging habitat would include the construction and operation disturbance of 4,810 acres and 525 acres, respectively. These areas represent 0.16 percent and 0.02 percent,

respectively, of the Region III California condor analysis area. Condors are cavity-nesting birds and most nest sites have been found in caves, on rock ledges, or in tree cavities. Direct impacts to condor nesting habitat from construction activities are unlikely because the species nests in rugged, remote locations.

Direct impacts from operation of Alternative III-A to the California condor include the potential for collision and electrocution associated with transmission lines (AZGFD 2011; 2004; Snyder and Rea 1998; Terres 1980; USFWS 1996). Since 1995 there have been a total of seven transmission line-related California condor deaths in California and Arizona (VWS 2007). The California condor is a very large avian scavenger, with a wingspan of 9.5 feet and a weight of up to 25 pounds. Using thermal updrafts, condors can soar and glide up to 50 miles per hour. Therefore, condors have low maneuverability, which contributes to the potential for transmission line collision and electrocution. The potential for electrocution mortality to California condors warrants special consideration regarding adequate spacing of transmission equipment (APLIC 2006). The wingspan of a condor could exceed typical separation distances of electrical conductors and other and other energized equipment. California condors normally produce only a single egg every other year (AZGFD 2008). Because they have a low reproductive rate, populations can be impacted by even sporadic mortality (USFWS 1996).

Implementation of TWE's design features for meeting or exceeding the raptor safe design standards described in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) (TWE-30) would reduce operation-related impacts to the California condor. Remaining impacts to the California condor would be limited to temporary disturbance of potential foraging habitat. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Greater Sage-grouse (Candidate)

Greater sage-grouse along Alternative III-A in southwestern Utah are found in portions of Beaver and Iron counties. These counties support the largest greater sage-grouse populations in southwestern Utah.

As presented in **Table 3.8-44**, 1 active lek occurs within 4 miles of Alternative III-A. Alternative III-A also crosses a variety of greater sage-grouse habitats in Utah (**Figure 3.8-5**).

The types of impacts to greater sage-grouse from construction and operation of Alternative III-A generally would be the same as described for Alternative I-A, but would differ in the number of leks crossed and amount of habitat disturbed (**Table 3.8-44**). Impacts under Alternative III-A would include the construction and operation disturbance of 346 acres and 73 acres, respectively. These areas represent 0.03 percent and <0.01 percent, respectively, of the Region III greater sage-grouse analysis area.

Implementation of **ECO-1**, **ECO-4**, and **TWE-32** would require TWE to identify sensitive areas to the greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat that may help reduce potential raptor and corvid predation on greater sage-grouse. Given the minor amount of greater sage-grouse habitat crossed by the proposed Project under Alternative III-A (**Table 3.8-44**), potential impacts from operation of the proposed Project would be primarily limited to habitat loss and fragmentation.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail may occur within suitable marsh habitat along the Muddy and Virgin rivers in southern Nevada along Alternative III-A.

Direct impacts to the Yuma clapper rail include habitat loss, modification, and fragmentation. Alternative III-A would result in the construction and operation disturbance of 22 acres and 3 acres, respectively, of potentially suitable wetland habitat. These areas represent 0.04 percent and

<0.01 percent, respectively, of suitable habitat within the Region III Yuma clapper rail analysis area (**Table 3.8-49**).

Improved access as a result of Project roads under Alternative III-A may result in increased human disturbance to the species. These impacts would be more pronounced if construction were to occur during the breeding season.

Operation of the proposed Project would incrementally increase the collision potential for Yuma clapper rails. Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associate Components, presents details regarding collision impacts to migratory birds.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 would reduce impacts during the Yuma clapper rail breeding season. Remaining impacts to Yuma clapper rails under Alternative III-A would be limited to a minor amount of temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Western Yellow-billed Cuckoo (Candidate)

This species may occur along Alternative III-A in several areas of southern Utah and Nevada. The western yellow-billed cuckoo is a confirmed breeder along the Muddy River in Clark County, Nevada (Floyd et al. 2007). Records also exist for the western yellow-billed cuckoo in the Beaver Dam Wash in Washington County, Utah (Bosworth 2003; Parrish et al. 2000).

The types of impacts to the western yellow-billed cuckoo under Alternative III-A generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Under Alternative III-A, direct impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 22 acres and 3 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.04 percent and <0.01 percent, respectively, of suitable habitat within the Region III western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative III-A would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher may occur within suitable riparian habitat along Alternative III-A in southwestern Utah and southern Nevada. In the Nevada portion of the region, essential habitat for the species is identified on the Pahranagat River, the Muddy River, and a portion of the Virgin River. Designated Critical Habitat does not occur along Alternative III-A.

Direct impacts to the southwestern willow flycatcher include habitat loss, modification, and fragmentation. Under Alternative III-A, direct impacts to the southwestern willow flycatcher may occur as a result of the construction and operation disturbance of 22 acres and 3 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.04 percent and <0.01 percent, respectively, of suitable habitat within the Region III southwestern willow flycatcher analysis area (**Table 3.8-49**).

Table 3.8-49 Summary of Region III Alternative Route Impact Parameters for Federally Listed and Candidate Species

Species	Alternative III-A			Alternative III-B			Alternative III- C		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Desert tortoise potential habitat (acres)	993	299	85,863	1,081	279	98,374	985	242	100,923
Percentage of existing habitat within the Region III desert tortoise analysis area	0.07	0.02	5.72	0.07	0.02	6.56	0.07	0.02	6.72
Greater sage-grouse potential habitat (acres)	346	73	50,225	0	0	0	0	0	0
Percentage of existing habitat within the Region III greater sage-grouse analysis area	0.03	<0.01	4.21	0	0	0	0	0	0
Utah prairie dog potential habitat (acres)	52	11	1901	37	8	694	37	8	694
Percentage of existing habitat within the Region III Utah prairie dog analysis area	0.04	<0.01	1.40	0.03	<0.01	0.51	0.03	<0.01	0.51
California condor potential habitat (acres)	4,810	525	179,459	4,308	401	160,820	4,624	426	188,549
Percentage of existing habitat within the Region III California condor analysis area	0.16	0.02	4.74	0.14	0.01	5.26	0.15	0.01	6.17
Yuma clapper rail potential habitat (acres)	22	3	3,706	81	6	3,160	19	2	3,151
Percentage of existing habitat within the Region III Yuma clapper rail analysis area	0.04	<0.01	3.34	0.15	0.01	2.85	0.04	<0.01	2.84
Western yellow-billed cuckoo potential habitat (acres)	22	3	3,706	81	6	3,160	19	2	3,151
Percentage of existing habitat within the Region III western yellow-billed cuckoo analysis area	0.04	<0.01	3.34	0.15	0.01	2.85	0.04	<0.01	2.84
Southwestern willow flycatcher potential habitat (acres)	22	3	3,706	81	6	3,160	19	2	3,151
Percentage of existing habitat within the Region III southwestern willow flycatcher analysis area	0.04	<0.01	3.34	0.15	0.01	2.85	0.04	<0.01	2.84

Southwestern willow flycatchers will nest in native riparian habitat where available, but also will nest in monocultures of salt cedar or Russian olive (USGS 2008). Improved access as a result of Project roads may further fragment suitable habitat and result in increased disturbance to the species. These impacts would be more pronounced if construction were to occur during the southwestern willow flycatcher breeding season (March 15 to October 15).

SSWS-8*: To prevent impacts to southwestern willow flycatchers during the breeding season, TWE would avoid construction within suitable habitat from March 15 to October 15, or, alternatively, conduct breeding southwestern willow flycatcher surveys and implement appropriate mitigation in coordination with the BLM, Western, USFWS, and applicable state wildlife agencies.*

Effectiveness: To minimize impacts to southwestern willow flycatchers during the breeding season (March 15 to October 15), TWE also has committed to implement seasonal timing restrictions in applicable areas (TWE-32). More specifically, **SSWS-8** would require TWE to avoid habitat removal, between March 15 and October 15 or, alternatively, conduct southwestern willow flycatcher surveys and implement appropriate mitigation in coordination with the BLM, Western, and state wildlife agencies.

Operation of the proposed Project would incrementally increase the collision potential for southwestern willow flycatchers. Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associated Components presents details regarding collision impacts to migratory birds.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. Additionally, implementation of **TWE-32** and **SSWS-8** would avoid impacts during the breeding season. Remaining impacts to nesting southwestern willow flycatchers under Alternative III-A would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Utah Prairie Dog (Threatened)

Along Alternative III-A, the Utah prairie dog is found in Beaver, Iron, and Washington counties, Utah. Alternative III-A also crosses a USFWS-designated Utah Prairie Dog Recovery Unit.

The types of impacts to Utah prairie dogs under Alternative III-A generally would be the same as described for Alternative II-C, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Under Alternative III-A, direct impacts to the Utah prairie dog may occur as a result of the disturbance of potentially suitable habitat (**Table 3.8-46**). Impacts to the Utah prairie dog may occur as a result of the construction and operation disturbance of 52 acres and 11 acres, respectively, of potentially suitable habitat. These areas represent 0.04 percent and <0.01 percent, respectively, of suitable habitat within the Region III Utah prairie dog analysis area.

SSWS-7*: To reduce impacts to Utah prairie dogs, TWE would be required to conduct a preliminary habitat assessment along portions of the proposed Project that is within historic Utah prairie dog habitat. Based on the results of the habitat survey, additional surveys may be required by the USFWS to determine whether occupied habitat occurs within the disturbance footprint of the proposed Project. If occupied habitat is found, appropriate mitigation measures such as reroutes, reducing the width of the ROW, and constructing alternative structures types (e.g. H-frame tubular) with anti-perching devices on transmission line segments within occupied habitat, would be implemented in coordination with the BLM, Western, UDWR, and USFWS.*

Effectiveness: **SSWS-7** would reduce impacts to Utah prairie dogs by potentially reducing habitat disturbance within occupied habitat (e.g., reroutes) and by limiting raptor predation on Utah prairie dogs (i.e., anti-perching devices within occupied habitat).

It is not anticipated that construction activities would permanently alter Utah prairie dog colonies that would be crossed by the Project, and installation of the transmission line would not restrict the colonization of the 250-foot-wide transmission line ROW by Utah prairie dogs. In fact, habitat disturbance may encourage future colonization temporarily, based on the availability of soft, permeable soils that would occur along the ROW subsequent to the Project construction. Additionally, **SSWS-7** would identify suitable habitat and appropriate mitigation measures would be implemented in occupied habitat in coordination with the BLM, Western, UDWR, and USFWS. Therefore, impacts to the Utah prairie dog under Alternative III-A primarily would be limited to habitat loss and fragmentation.

Table 3.8-49 presents a summary of impacts to federally listed species that potentially occur within Region III.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur in Region III are presented in **Table 3.8-50**. The types of impacts under Alternative III-A to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative III-A (e.g., desert shrub, grassland, and sagebrush shrubland) are more likely to be impacted under Alternative III-A. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies. **Table 3.8-48** presents habitat acreage impacts by vegetation community/habitat type on USFS lands. Using **Table 3.8-48** in combination with the information presented in **Table 3.8-50**, habitat impacts for each species can be determined. For other sensitive species (BLM and State), please refer to the corresponding vegetation community impacts tables in the Section 3.5, Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing trampling acreages and the facilities acreages to determine construction disturbance, and using the operations numbers alone to understand acres of operations disturbance for each vegetation community/habitat type. **Table 3.8-49** summarizes habitat impacts to federally listed species potentially occurring in Region III.

Implementation of TWE-32 and **WLF-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS-sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative III-A, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

<u>Alternative III-B (Agency Preferred)</u>

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region III include six federally listed and two federal candidate species, 76 BLM sensitive species, USFS sensitive, and state-protected species. Species-specific impact discussions are presented below. Suitable habitat for the Mexican spotted owl does not occur along Alternative III-B; therefore, impacts are not expected to occur to this species. Alternative III-B does not occur within the known range of the California condor, therefore impacts to this species are not expected to occur. Section 3.7.6.5 presents a description of existing disturbance along Alternative III-B.

Table 3.8-50 BLM Sensitive and State-protected Species Potentially Occurring in Region III

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals – Bats	
Allen's big-eared bat	Desert shrubland, greasewood flat, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Big brown bat	Desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Big free-tailed bat	Desert shrubland, grassland, herbaceous wetland, montane grassland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Brazilian free-tailed bat	Desert shrubland, herbaceous wetland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland
California leaf-nosed bat	Desert shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
California myotis	Desert shrubland, greasewood flat, herbaceous wetland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Cave myotis	Desert shrubland, montane grassland, riparian, woody riparian and wetlands
Fringed myotis	Desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Hoary bat	Desert shrubland, grassland, herbaceous wetland, montane grassland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Long-eared myotis	Desert shrubland, greasewood flat, herbaceous wetland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Long-legged myotis	Desert shrubland, herbaceous wetland, montane shrubland, riparian, saltbush shrubland, woody riparian and wetlands
Pallid bat	Desert shrubland, grassland, greasewood flat, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Silver-haired bat	Desert shrubland, greasewood flat, herbaceous wetland, riparian, sagebrush shrubland, woody riparian and wetlands
Spotted bat	Desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Townsend's (Western) big-eared bat	Desert shrubland, greasewood flat, herbaceous wetland, montane shrubland, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Western pipistrelle	Desert shrubland, herbaceous wetland, riparian, saltbush shrubland
Western red bat	Desert shrubland, herbaceous wetland, riparian, woody riparian and wetlands
Western small-footed myotis	Desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, riparian, woody riparian and wetlands
Yuma myotis	Desert shrubland, grassland, greasewood flat, herbaceous wetland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Mammals - Other	
Dark kangaroo mouse	Desert shrubland, grassland, sagebrush shrubland, saltbush shrubland
Desert bighorn sheep	Desert shrubland, montane grassland
Desert Valley kangaroo mouse	Desert shrubland, sagebrush shrubland, saltbush shrubland
Kit fox	Desert shrubland, grassland, montane grassland, sagebrush shrubland, saltbush shrubland
Pygmy rabbit	Sagebrush shrubland
Rocky Mountain bighorn sheep	Montane grassland, montane shrubland

Table 3.8-50 BLM Sensitive and State-protected Species Potentially Occurring in Region III

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Birds	
Least bittern	Herbaceous wetland
White-faced ibis	Herbaceous wetland
Bald eagle	Woody riparian and wetlands
Swainson's hawk	Desert shrubland, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Ferruginous hawk	Desert shrubland, grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Golden eagle	Desert shrubland, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Peregrine falcon	Desert shrubland, grassland, herbaceous wetland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Prairie falcon	Desert shrubland, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Long-billed curlew	Grassland, herbaceous wetland, woody riparian and wetlands
Burrowing owl	Desert shrubland, grassland, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Long-eared owl	Desert shrubland, grassland, montane grassland, riparian, saltbush shrubland, woody riparian and wetlands
Short-eared owl	Grassland, greasewood flat, herbaceous wetland, montane grassland, sagebrush shrubland
Lewis' woodpecker	Woody riparian and wetlands
Red-naped sapsucker	Woody riparian and wetlands
Loggerhead shrike	Grassland, greasewood flat, montane grassland, montane shrubland, sagebrush shrubland, saltbush shrubland
Gray vireo	Desert shrubland, montane shrubland, sagebrush shrubland, saltbush shrubland
Piñon jay	Montane shrubland
Sage thrasher	Sagebrush shrubland
Bendire's thrasher	Desert shrubland
Crissal thrasher	Desert shrubland, sagebrush shrubland, saltbush shrubland,woody riparian and wetlands
Le Conte's thrasher	Desert shrubland, woody riparian and wetlands
Phainopepla	Desert shrubland, woody riparian and wetlands
Lucy's warbler	Woody riparian and wetlands
Yellow-breasted chat	Riparian, woody riparian and wetlands
Brewer's sparrow	Sagebrush shrubland
Vesper sparrow	Grassland, montane grassland, sagebrush shrubland
Sage sparrow	Sagebrush shrubland
Bobolink	Grassland, herbaceous wetland
Reptiles	
Banded Gila monster	Desert shrubland, grassland
Chuckwalla	Desert shrubland
Corn snake	Grassland, greasewood flat, herbaceous wetland, riparian, woody riparian and wetlands
Desert iguana	Desert shrubland, sagebrush shrubland, saltbush shrubland
Desert night lizard	Desert shrubland
Long-nosed leopard lizard	Desert shrubland, greasewood flat, sagebrush shrubland, saltbush shrubland
Mojave rattlesnake	Desert shrubland
Sidewinder	Desert shrubland
Speckled rattlesnake	Desert shrubland, sagebrush shrubland, saltbush shrubland

Table 3.8-50 BLM Sensitive and State-protected Species Potentially Occurring in Region III

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Western banded gecko	Desert shrubland, sagebrush shrubland, saltbush shrubland
Western red-tailed skink	Riparian, woody riparian and wetlands
Western threadsnake (blindsnake)	Desert shrubland, grassland, greasewood flat, herbaceous wetland, montane grassland, montane shrubland, riparian, sagebrush shrubland, saltbush shrubland, woody riparian and wetlands
Zebra-tailed lizard	Desert shrubland
Terrestrial Invertebrates	
Great Basin small blue (Small blue) butterfly	Desert shrubland, riparian, sagebrush shrubland, woody riparian and wetlands
Grey's silverspot (Grey's fritillary) butterfly	Grassland, montane grassland, montane shrubland
Honey Lake blue butterfly	Saltbush shrubland
MacNeill sooty wing skipper (MacNeill saltbush sootywing butterfly)	Herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Mojave gypsum bee	Desert shrubland, sagebrush shrubland
Mojave poppy bee	Desert shrubland, sagebrush shrubland
Mono basin skipper (Railroad Valley skipper) butterfly	Desert shrubland, grassland, montane grassland, sagebrush shrubland,
Northern Mojave blue (Mojave blue) butterfly	Desert shrubland, sagebrush shrubland
Rice's blue butterfly	Saltbush shrubland
White River wood nymph butterfly	Grassland, montane grassland, herbaceous wetland

Desert Tortoise (Threatened)

The desert tortoise is known to occur along Alternative III-B in Clark and Lincoln counties, Nevada. This species is found exclusively with the Mojave Desert shrub community.

The types of impacts to the desert tortoise under Alternative III-B generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-43**). Direct impacts to the desert tortoise may occur as a result of the construction and operation disturbance of 1,081 acres and 279 acres, respectively, of potentially suitable habitat. These areas represent 0.07 percent and 0.02 percent, respectively, of potentially suitable habitat within the Region III desert tortoise analysis area.

Several factors would combine to help minimize impacts to the desert tortoise as a result of the construction of Alternative III-B. First, through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise habitat would be identified and avoided where possible. Second, by implementing **SSWS-4**, direct impacts to desert tortoises would be reduced because appropriate mitigation measures approved by the USFWS would be implemented. Therefore, impacts under Alternative III-B would be limited primarily to habitat loss and fragmentation.

California Condor (Endangered; EXNE)

California condors regularly forage, roost, and may even nest in southern Utah (Gorell et al. 2005). Based on their ability to travel up to 200 miles in a day (UDNR 2011), this species may be found along Alternative III-B.

Because the species has such a large range, direct impacts from construction activities associated with Alternative III-B to foraging habitat would include the construction and operation disturbance of 4,308 acres and 401 acres, respectively. These areas represent 0.14 percent and 0.01 percent, respectively, of the Region III California condor analysis area (**Table 3.8-49**). California condors are cavity-nesting birds and most nest sites have been found in caves, on rock ledges, or in tree cavities. Impacts to California condor nesting habitat from construction activities are unlikely because the species nests in rugged, remote locations.

The types of impacts from the operation of Alternative III-B to the California condor generally would be the same as described under Alternative III-A, but would differ in the amount of habitat disturbed.

Implementation of TWE's design features for meeting or exceeding the raptor safe design standards described in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) (TWE-30) would reduce operation-related impacts to the California condor. Remaining impacts to the California condor would be limited to temporary disturbance of potential foraging habitat. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Greater Sage-grouse (Candidate)

Greater sage-grouse in southwestern Utah along Alternative III-B occur in portions of Beaver and Iron counties. These counties support the largest greater sage-grouse populations in southwestern Utah.

The types of impacts to the greater sage-grouse under Alternative III-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed. However, as presented in **Table 3.8-44**, no active leks or UDWR mapped greater sage-grouse habitat would be impacted by Alternative III-B.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to the greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat, which may help reduce potential raptor and corvid predation on greater sage-grouse. Given the lack of greater sage-grouse habitat crossed by the proposed Project under Alternative III-B (**Table 3.8-44**), potential mortality from operation of the proposed Project would be primarily limited to habitat loss and fragmentation.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail may occur within suitable marsh habitat along the Muddy and Virgin rivers in southern Nevada along Alternative III-B.

The types of impacts to the Yuma clapper rail under Alternative III-B generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Alternative III-B would result in the construction and operation disturbance of 81 acres and 6 acres, respectively, of potentially suitable habitat. These areas represent 0.15 percent and 0.01 percent, respectively, of suitable habitat within the Region III Yuma clapper rail analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 would reduce impacts during the Yuma clapper rail breeding season. Remaining impacts to the Yuma clapper rail under Alternative III-B would be limited to a minor amount of temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Western Yellow-billed Cuckoo (Candidate)

This species may occur along Alternative III-B in southern Nevada. The western yellow-billed cuckoo is a confirmed breeder along the Muddy River in Clark County, Nevada (Floyd et al. 2007).

The types of impacts to the western yellow-billed cuckoo under Alternative III-B generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Under Alternative III-B, direct impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 81 acres and 6 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.15 percent and 0.01 percent, respectively, of suitable habitat within the Region III western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative III-B would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher may occur within suitable riparian habitat along Alternative III-B in southern Nevada. Essential habitat for the species is identified on the Pahranagat River, the Muddy River, and a portion of the Virgin River. Designated Critical Habitat does not occur along Alternative III-B, but does occur approximately 10 miles southeast at the Virgin River, contiguous with the essential habitat section and upstream to the Arizona border. Other potential suitable habitat for the southwestern willow flycatcher near Alternative III-B includes portions of the Meadow Valley Wash, the Muddy River, and the Colorado River System (Hiatt and Boone 2003).

The types of impacts to the southwestern willow flycatcher under Alternative III-B generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Alternative III-B would result in the construction and operation disturbance of 81 acres and 6 acres, respectively, of potentially suitable habitat. These areas represent 0.15 percent and 0.01 percent, respectively, of potentially suitable habitat within the Region III southwestern willow flycatcher analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-8** would reduce impacts during the southwestern willow flycatcher breeding season (March 15 to October 15). Remaining impacts to nesting southwestern willow flycatchers under Alternative III-B would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Utah Prairie Dog (Threatened)

Along Alternative III-B, the Utah prairie dog is found in Beaver, Iron, and Washington counties, Utah. Alternative III-B also crosses a USFWS-designated Utah Prairie Dog Recovery Unit.

The types of impacts to Utah prairie dogs under Alternative III-B generally would be the same as described for Alternative II-C, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Alternative III-B would result in the construction and operation disturbance of 37 acres and 8 acres, respectively, of potentially suitable grassland habitat. These areas represent 0.03 percent and <0.01 percent, respectively, of potential habitat within the Region III Utah prairie dog analysis area.

***SSWS-7**: To reduce impacts to Utah prairie dogs, TWE would be required to conduct a preliminary habitat assessment along portions of the proposed Project that is within historic Utah prairie dog habitat. Based on the results of the habitat survey, additional surveys may be required by the USFWS to determine whether occupied habitat occurs within the disturbance footprint of the proposed Project. If occupied habitat is found, appropriate mitigation measures such as reroutes, reducing the width of the ROW, and constructing alternative structures types (e.g. H-frame tubular) with anti-perching devices on transmission line segments within occupied habitat, would be implemented in coordination with the BLM, Western, UDWR, and USFWS.*

Effectiveness: **SSWS-7** would reduce impacts to Utah prairie dogs by potentially reducing habitat disturbance within occupied habitat (e.g., reroutes) and by limiting raptor predation on Utah prairie dogs (i.e., anti-perching devices within occupied habitat).

It is not anticipated that construction activities would permanently alter Utah prairie dog colonies that would be crossed by the Project, and installation of the transmission line would not restrict the colonization of the 250-foot-wide transmission line ROW by Utah prairie dogs. In fact, habitat disturbance may encourage future colonization temporarily, based on the availability of soft, permeable soils that would occur along the ROW subsequent to Project construction. In addition, **SSWS-7** would identify potentially suitable habitat and appropriate mitigation measures would be implemented in occupied habitat in coordination with the BLM, Western, UDWR, and USFWS. Therefore, impacts to the Utah prairie dog under Alternative III-B would be primarily limited to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur under Alternative III-B are presented in **Table 3.8-50**. The types of impacts under Alternative III-B to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative III-B (e.g., desert shrub, sagebrush shrubland, saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32 and **WLF-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative III-B, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

Alternative III-C

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted under Alternative III-C include 6 federally listed and 2 federal candidate species, and 76 BLM sensitive, USFS sensitive species, and state-protected species. Species-specific impact discussions are presented below. Suitable habitat for the Mexican spotted owl does not occur along Alternative III-C; therefore, impacts are not expected to occur to this species. Alternative III-C does not occur within the known range of the California condor; therefore, impacts to this species are not expected to occur. Section 3.7.6.5 presents a description of existing conditions along Alternative III-C.

Desert Tortoise (Threatened)

The desert tortoise occurs along Alternative III-C in Clark and Lincoln counties, Nevada. This species is found exclusively within the Mojave Desert shrub community.

The types of impacts to the desert tortoise under Alternative III-C generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-43**). Impacts to the desert tortoise may occur as a result of the construction and operation disturbance of 985 acres and 242 acres, respectively, of potentially suitable habitat. These areas represent 0.07 percent and 0.02 percent, respectively, of potentially suitable habitat within the Region III desert tortoise analysis area.

Several factors would combine to help minimize desert tortoise impacts as a result of Alternative III-C. First, through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise potential habitat would be identified and avoided where possible. Second, by implementing **SSWS-4**, direct impacts to the desert tortoise would be reduced because appropriate mitigation measures approved by the USFWS would be implemented. Therefore, impacts under Alternative III-C would be limited primarily to habitat loss and fragmentation.

California Condor (Endangered; EXNE)

California condors regularly forage, roost, and may even nest in southern Utah (Gorell et al. 2005). Based on their ability to travel up to 200 miles in a day (UDNR 2011), this species may occur along Alternative III-C.

Because the species has such a large range, direct impacts under Alternative III-C to potential foraging habitat would include the construction and operation disturbance of 4,624 acres and 426 acres, respectively. These areas represent 0.15 percent and 0.01 percent, respectively, of the Region III California condor analysis area (**Table 3.8-49**). California condors are cavity-nesting birds and most nest sites have been found in caves, on rock ledges, or in tree cavities. Impacts to California condor nesting habitat from construction activities are unlikely because the species nests in rugged, remote locations.

The types of impacts from the operation of Alternative III-C to the California condor generally would be the same as described under Alternative III-A but would differ in the amount of habitat impacted.

Implementation of TWE's design features for meeting or exceeding the raptor safe design standards described in the "Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (APLIC 2006) (TWE-30) would reduce operation-related impacts to California condors. Remaining impacts to the California condor would be limited to temporary disturbance of potential foraging habitat. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Greater Sage-grouse (Candidate)

Greater sage-grouse along Alternative III-C in southwestern Utah occur in portions of Beaver and Iron counties. These counties support the largest greater sage-grouse populations in southwestern Utah.

The types of impacts to the greater sage-grouse under Alternative III-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). However, as presented in **Table 3.8-44**, no active leks or UDWR mapped greater sage-grouse habitat would be impacted by Alternative III-C.

Implementation of ECO-1, ECO-4, and TWE-32 would require TWE to identify sensitive areas to the greater sage-grouse (e.g., leks, nesting habitat, wintering habitat, etc.). These measures, along with **SSWS-5**, would require TWE to construct anti-perching devices in high quality habitat that may help reduce potential raptor and corvid predation on greater sage-grouse. Given the lack of greater

sage-grouse habitat crossed by the proposed Project under Alternative III-C (**Table 3.8-44**), potential impacts from operation of the proposed Project would be limited primarily to habitat loss and fragmentation.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail may occur within suitable marsh habitat along the Muddy and Virgin rivers in southern Nevada along Alternative III-C.

The types of impacts to the Yuma clapper rail under Alternative III-C generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Alternative III-C would result in the construction and operation disturbance of 19 acres and 2 acres, respectively, of potentially suitable habitat. These areas represent 0.04 percent and <0.01 percent, respectively, of potentially suitable habitat within the Region III Yuma clapper rail analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 would reduce impacts during the breeding season. Remaining impacts to Yuma clapper rails under Alternative III-C would be limited to a minor amount of temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Western Yellow-billed Cuckoo (Candidate)

This species may occur along Alternative III-C in southern Nevada. The western yellow-billed cuckoo is a confirmed breeder along the Muddy River in Clark County, Nevada (Floyd et al. 2007).

The types of impacts to the western yellow-billed cuckoo under Alternative III-C generally would be the same as described for Alternative I-A, but would differ in the amount of habitat disturbed. Under Alternative III-C, direct impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 19 acres and 2 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.04 percent and <0.01 percent, respectively, of potentially suitable habitat within the Region III western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative III-C would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher may occur within suitable riparian habitat along Alternative III-C in southern Nevada. Essential habitat for the species is identified on the Pahranagat River. Designated Critical Habitat does not occur along Alternative III-C, but does occur approximately 10 miles southeast at the Virgin River, contiguous with the essential habitat section and upstream to the Arizona border. Other potential habitat that has been recognized as suitable for the southwestern willow flycatcher near Alternative III-C includes portions of the Meadow Valley Wash, the Muddy River, and the Colorado River System (Hiatt and Boone 2003).

The types of impacts to the southwestern willow flycatcher under Alternative III-C generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Alternative III-C would result in the construction and operation disturbance of 19 acres and 2 acres, respectively, of potentially suitable habitat. These areas represent 0.04 percent and <0.01 percent,

respectively, of potentially suitable habitat within the Region III southwestern willow flycatcher analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-8** would reduce impacts during the southwestern willow flycatcher breeding season (March 15 to October 15). Remaining impacts to nesting southwestern willow flycatchers under Alternative III-C would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

Utah Prairie Dog (Threatened)

Along Alternative III-C, the Utah prairie dog is found in Beaver, Iron, and Washington counties, Utah. Alternative III-C also crosses a USFWS designated Utah Prairie Dog Recovery Unit.

The types of impacts to Utah prairie dogs under Alternative III-C generally would be the same as described for Alternative II-C, but would differ in the amount of habitat disturbed (**Table 3.8-49**). Alternative III-C would result in the construction and operation disturbance of 37 acres and 8 acres, respectively, of potentially suitable grassland habitat. These areas represent 0.03 percent and <0.01 percent, respectively, of potentially suitable habitat within the Region III Utah prairie dog analysis area.

It is not anticipated that construction activities would permanently alter Utah prairie dog colonies that would be crossed by the Project, and installation of the transmission line would not restrict the colonization of the 250-foot-wide transmission line by Utah prairie dogs. In fact, habitat disturbance may encourage future colonization temporarily, based on the availability of soft, permeable soils that would occur along the ROW subsequent to the Project construction. Additionally, **SSWS-7** would identify suitable habitat and appropriate mitigation measures would be implemented in occupied habitat in coordination with the BLM, Western, UDWR, and USFWS. Therefore, impacts to the Utah prairie dog under Alternative III-C would be primarily limited to habitat loss and fragmentation.

BLM Sensitive, USFS Sensitive, and State-Protected Species

BLM sensitive, USFS sensitive, and state-protected species that may occur along Alternative III-C are presented in **Table 3.8-50**. The types of impacts under Alternative III-C to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with the dominant habitat types along Alternative III-C (e.g., desert shrub, sagebrush shrubland, saltbush shrubland) are more likely to be impacted. Impacts to these habitat types are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFS, and applicable state wildlife agencies.

Implementation of TWE-32 and **WLF-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative III-C, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the extent of native habitats in the surrounding Project region.

Alternative Variations in Region III

The types of impacts to special status wildlife species under the three alternative variations in Region III generally would be the same as the comparable portions of Alternatives III-A, but would differ in the amount of habitat disturbed (**Table 3.8-51**). No greater sage-grouse or desert tortoise habitat would be impacted by the alternative variations in Region III. Similar to the comparable portions of Alternative III-A, after considering design features and mitigation measures, impacts to special status wildlife species from Project construction and operation would be limited primarily to habitat loss and fragmentation.

Alternative Connectors in Region III

The Moapa and Avon alternative connectors would include minimal increases of total habitat disturbance if they were to be utilized. **Table 3.8-52** summarizes impacts associated with the alternative connectors in Region III.

Table 3.8-53 provides a comparison of alternative electrode bed locations proposed near the Southern Terminal. Some locations might serve multiple alternative routes, while others could only be associated with a certain alternative route.

No special status raptor nests are identified at Region III ground electrode sites. Data for this region is incomplete.

Region III Conclusion

A comparison of impact parameters for Region III alternatives indicates that potential construction and operation impacts to special status wildlife species would be varied across all alternatives as shown in **Table 3.8-49**. Alternative III-A would result in the greatest direct and indirect impacts to greater sage-grouse potential habitat in comparison to the other Region III alternatives (**Table 3.8-44**). In addition, Alternatives III-B and III-C would result in no construction, operation, or indirect impacts to greater sage-grouse potential habitat, whereas Alternative III-A would result in 346 acres of construction impact, 73 acres of operation impact, and 50,225 acres of indirect impact to greater sage-grouse potential habitat. Alternative III-B would result in the greatest direct and indirect impacts to desert tortoise potential habitat in comparison to the other Region III alternatives (**Table 3.8-43**). Alternative III-B would result in the greatest direct and indirect impacts to Southwest willow flycatcher, Western yellow-billed cuckoo, and Yuma clapper rail potential habitat in comparison to the other Region III alternatives (**Table 3.8-49**). The greatest level of impacts to special status wildlife species among all Region III alternatives associated with Alternative III-A is due to greater impacts to greater sage-grouse habitat. However, project effects on special status wildlife species and their potential habitat would be avoided or considered to be low magnitude and short-term after applying BMPs, design features, and additional mitigation.

3.8.6.7 Region IV

Tables 3.8-54 and **3.8-55** provide a tabulation of impacts associated with the alternative routes in Region IV. Key impact parameters that relate to the impact discussion in Section 3.8.6.2, Impacts to Special Status Species Common to All Alternative Routes and Associated Components, and specific differences by alternative are discussed below.

Alternative IV-A (Applicant Proposed and Agency Preferred)

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region IV include three federally listed and one federal candidate species, and 65 BLM sensitive, USFS sensitive species, and state-protected species. Species-specific impacts are discussed below. Suitable habitat for the Yuma clapper rail does not occur along Alternative IV-A, therefore impacts are not expected to occur to this subspecies. Section 3.7.6.6 presents a description of existing disturbance along Alternative IV-A.

Table 3.8-56 summarizes habitat impacts to federally listed species potentially occurring in Region IV.

Table 3.8-51 Summary of Impacts to Special Status Species Under Region III Alternative Variations[1]

Impact Parameters	Ox Valley East Alternative Variation		Comparable Portion of Alternative Route III-A		Ox Valley West Alternative Variation		Comparable Portion of Alternative III-A		Pinto Alternative Variation		Comparable Portion of Alternative Route III-A	
	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact	Construction Impact	Operation Impact
Special status wildlife species habitat (acres)	276	100	252	95	268	100	252	95	449	111	381	125
Length of transmission line (miles)	16		15		17		15		29		24	
Number of potential special status raptor species nests within 1 mile of the reference line[2]	1 unknown raptor species[2]		11 unknown raptor species[2]		1 unknown raptor species[2]		11 unknown raptor species[2]		2 golden eagle, 1 ferruginous hawk, 3 unknown raptor species[2]		50 unknown raptor species[2], 3 ferruginous hawk, 1 prairie falcon	

[1] Raptor nest data received for Utah is incomplete for this portion of Region III.

[2] Nests of raptor species, which are not classified as special status, are tabulated in Section 3.7, Wildlife. Nests of unknown raptor species are tabulated in both Sections 3.7 and 3.8 because they may have been utilized by either special status raptors or non-special status raptors.

Sources: BLM Vernal FO 2009, 2011; BLM Rawlins FO 2009, 2010; BLM Rock Springs FO 2009; BLM Cedar City FO 2010; BLM Price FO 2008; BLM Ely FO 2007; BLM Little Snake FO 2011; EPG 2012, Manti-La Sal National Forest 2012; Ashley National Forest 2010; Uintah National Forest 2011; CDOW, BLM, USFS cooperative dataset 2009; NDOW 2012; AECOM 2012.

Table 3.8-52 Summary of Region III Alternative Connector Impact Parameters for Wildlife

Alternative Connector	Analysis
Moapa Alternative Connector	• Approximately 13 miles in length.[1] • Approximately 425 acres of construction and 34 acres of operation impacts to special status wildlife species habitat would occur. • No special status raptor nests are within 1 mile of the reference line. • No occupied greater sage-grouse habitat crossed by reference line
Avon Alternative Connector	• Approximately 8 miles in length.[1] • Approximately 104 acres of construction and 21 acres of operation impacts to special status wildlife species habitat would occur. • No special status raptor nests are within 1 mile of the reference line. • No occupied greater sage-grouse habitat crossed by reference line.

[1] Length refers to length of 600-kV transmission line and serves as a proxy metric for avian collision potential.

Table 3.8-53 Summary of Region III Alternative Ground Electrode System Location Impacts for Special Status Wildlife Species

Alternative Ground Electrode System Locations	Estimated Habitat Disturbance (acres)		Analysis
	Construction Impact	Operation Impact	
Mormon Mesa- Carp Elgin Rd (Alternative III-A)	92	20	Due to the programmatic nature of the seven potential ground electrode systems, the extent of special status wildlife species impacts is not known at this time. However, due to the potential locations occurring in southern Nevada, impacts are expected to be the same as discussed in Section 3.8.6.1, Impacts from Terminal Construction and Operation, and Section 3.8.6.2, Impacts Common to All Alternative Routes and Associated Components. To reduce impacts to special status wildlife species, species-specific mitigation measures and habitat surveys will be coordinated with the BLM, USFWS, and applicable state wildlife agencies.
Mormon Mesa-Carp Elgin Rd (Alternative III-B)	103	26	
Halfway Wash- Virgin River (Alternative III-A)	84	15	
Halfway Wash- Virgin River (Alternative B)	92	20	
Halfway Wash East (Alternative III-A)	103	26	
Halfway Wash East (Alternative III-B)	102	25	
Meadow Valley 2 (Alternative III-C)	164	65	
Delta Ground Electrode (Design Option 2 and 3)	129	39	

Table 3.8-54 Summary of Region IV Alternative Route Impact Parameters for Desert Tortoise

Parameter	Alternative IV-A			Alternative IV-B			Alternative IV-C		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
USFWS critical habitat (acres)	0	0	0	0	0	0	172	22	8,298
USFWS potential habitat (acres)	738	566	38,679	802	553	37,454	877	172	60,862
USGS habitat model ranking 0.6 and higher (acres)	704	535	35,670	564	383	27,456	632	118	50,192

Table 3.8-55 Special Status Raptor Species Nests within 1 Mile of the Reference Line in Region IV

Species	Alternative IV-A	Alternative IV-B	Alternative IV-C	Marketplace Alternative Variation	Sunrise Mountain Alternative Connector	Lake Las Vegas Alternative Connector	Three Kids Mine Alternative Connector	River Mountain Alternative Connector	Railroad Pass Alternative Connector
Peregrine falcon	0	1	1	0	0	0	0	1	0
Prairie falcon	1	0	0	0	0	0	0	0	0
Total	1	1	1	0	0	0	0	1	0

[1] Total nests for Region I is not equal to a sum of alternate routes and other project components. This is due to the fact that nests could be present within 1 mile of the reference line or facility along multiple routes.

Sources: BLM Vernal FO 2009, 2011; BLM Rawlins FO 2009, 2010; BLM Rock Springs FO 2009; BLM Cedar City FO 2010; BLM Price FO 2008; BLM Ely FO 2007; BLM Little Snake FO 2011; EPG 2012, Manti-La Sal National Forest 2012; Ashley National Forest 2010; Uintah National Forest 2011; CDOW, BLM, USFS cooperative dataset 2009; NDOW 2012; AECOM 2012.

Table 3.8-56 Summary of Region IV Alternative Route Impact Parameters for Federally Listed and Candidate Species

Species	Alternative IV-A			Alternative IV-B			Alternative IV- C		
	Construction Impact	**Operation Impact**	**Indirect Impact**	**Construction Impact**	**Operation Impact**	**Indirect Impact**	**Construction Impact**	**Operation Impact**	**Indirect Impact**
Desert tortoise potential habitat (acres)	566	148	38,679	553	171	37,454	645	172	60,862
Percentage of existing habitat within the Region IV desert tortoise analysis area	0.12	0.03	8.03	0.11	0.04	7.78	0.13	0.04	12.63
Yuma clapper rail potential habitat (acres)	1	<1	2	12	2	240	12	2	242
Percentage of existing habitat within the Region IV Yuma clapper rail analysis area	0.06	<0.01	0.14	1.06	0.18	21.93	1.06	0.18	22.07
Western yellow-billed cuckoo potential habitat (acres)	1	<1	2	12	2	240	12	2	242
Percentage of existing habitat within the Region IV western yellow-billed cuckoo analysis area	0.06	<0.01	0.14	1.06	0.18	21.93	1.06	0.18	22.07
Southwestern willow flycatcher potential habitat (acres)	1	<1	2	12	2	240	12	2	242
Percentage of existing habitat within the Region IV southwestern willow flycatcher analysis area	0.06	<0.01	0.14	1.06	0.18	21.93	1.06	0.18	22.07

Desert Tortoise (Threatened)

The desert tortoise occurs along the entire length of Alternative IV-A (**Figure 3.8-6**). This species is found exclusively with the Mojave Desert shrub community.

The types of impacts to the desert tortoise under Alternative IV-A generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-54**). Impacts to the desert tortoise may occur as a result of the construction and operation disturbance of 566 acres and 148 acres, respectively, of potentially suitable habitat. These areas represent 0.12 percent and 0.03 percent, respectively, of potentially suitable habitat within the Region IV desert tortoise analysis area.

Several factors would combine to help minimize impacts to the desert tortoise as a result of the construction of Alternative IV-A (**Table 3.8-56**). Through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise habitat would be identified and avoided where possible. By implementing **SSWS-4**, direct impacts to the desert tortoise would be reduced through implementation of appropriate mitigation measures approved by the USFWS. Therefore, impacts under Alternative IV-A would be limited primarily to habitat loss and fragmentation.

Western Yellow-billed Cuckoo (Candidate)

This species may occur along Alternative IV-A in southern Nevada in close proximity to perennial streams, wetlands, and lakes.

The types of impacts to the western yellow-billed cuckoo under Alternative IV-A generally would be the same as described for Alternative I-A. Under Alternative IV-A, direct impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 1 acre and <1 acre, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 0.06 percent and <0.01 percent, respectively, of potentially suitable habitat within the Region IV western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative IV-A would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher may occur within suitable riparian habitat along Alternative IV-A in southern Nevada. Potential suitable habitat for the southwestern willow flycatcher near Alternative IV-A includes portions of the Meadow Valley Wash, the Muddy River, and the Colorado River System (Hiatt and Boone 2003).

The types of impacts to the southwestern willow flycatcher under Alternative IV-A generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-56**). Alternative IV-A would result in the construction and operation disturbance of 1 acre and <1 acre, respectively, of potentially suitable habitat. These areas represent 0.06 percent and <0.01 percent, respectively, of potentially suitable habitat within the Region IV southwestern willow flycatcher analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-8** would reduce impacts during the southwestern willow flycatcher breeding season (March 15 to October 15). Remaining impacts to nesting southwestern willow flycatchers under Alternative IV-A would be limited to temporary habitat disturbance.

This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail may occur within suitable marsh habitat in southern Nevada along Alternative IV-A.

Direct impacts to the Yuma clapper rail include habitat loss, modification, and fragmentation (**Table 3.8-56**). Alternative IV-A would result in the construction and operation disturbance of 1 acre and <1 acre, respectively, of potentially suitable wetland habitat. These areas represent 0.06 percent and <0.01 percent, respectively, of suitable habitat within the Region IV Yuma clapper rail analysis area.

Improved access as a result of Project roads under Alternative IV-A may result in increased human disturbance to the species. These impacts would be more pronounced if construction were to occur during the breeding season.

Operation of the proposed Project would incrementally increase the collision potential for Yuma clapper rails. Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associate Components, presents details regarding collision impacts to migratory birds.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 would reduce impacts during the Yuma clapper rail breeding season. Remaining impacts to Yuma clapper rails under Alternative III-A would be limited to a minor amount of temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur along Alternative IV-A are presented in **Table 3.8-57**. The types of impacts under Alternative IV-A to BLM sensitive, USFS sensitive, and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with desert shrubland are more likely to be impacted. Impacts to this habitat type are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, Western, and NDOW.

Table 3.8-57 BLM Sensitive and State-protected Species Potentially Occurring in Region IV

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Mammals – Bats	
Allen's big-eared bat	Desert shrubland, riparian, saltbush shrubland, woody riparian and wetlands
Big brown bat	Barren/sparsely vegetated, desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Big free-tailed bat	Barren/sparsely vegetated, cliff and canyon, desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Brazilian free-tailed bat	Desert shrubland, herbaceous wetland, riparian, saltbush shrubland
California leaf-nosed bat	Desert shrubland, riparian, saltbush shrubland, woody riparian and wetlands
California myotis	Desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands

Table 3.8-57 BLM Sensitive and State-protected Species Potentially Occurring in Region IV

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Cave myotis	Desert shrubland, herbaceous wetland, riparian, woody riparian and wetlands
Fringed myotis	Desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Greater western mastiff bat	Barren/sparsely vegetated, cliff and canyon, desert shrubland, riparian
Hoary bat	Desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Long-eared myotis	Cliff and canyon, desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Long-legged myotis	Desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Pallid bat	Barren/sparsely vegetated, desert shrubland, grassland, saltbush shrubland, woody riparian and wetlands
Silver-haired bat	Desert shrubland, herbaceous wetland, riparian, woody riparian and wetlands
Spotted bat	Barren/sparsely vegetated, cliff and canyon, desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Townsend's (Western) big-eared bat	Desert shrubland, herbaceous wetland, saltbush shrubland, woody riparian and wetlands
Western pipistrelle	Cliff and canyon, desert shrubland, herbaceous wetland, riparian, saltbush shrubland
Western red bat	Desert shrubland, herbaceous wetland, riparian, woody riparian and wetlands
Western small-footed myotis	Barren/sparsely vegetated, cliff and canyon, desert shrubland, herbaceous wetland, riparian, woody riparian and wetlands
Yuma myotis	Barren/sparsely vegetated, desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Mammals – Other	
Dark kangaroo mouse	Desert shrubland
Desert bighorn sheep	Cliff and canyon, desert shrubland
Kit fox	Barren/sparsely vegetated, desert shrubland, saltbush shrubland
Pale kangaroo mouse	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Birds	
Least bittern	Herbaceous wetland
White-faced ibis	Herbaceous wetland
Bald eagle	Woody riparian and wetlands
Swainson's hawk	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Ferruginous hawk	Cliff and canyon, desert shrubland, saltbush shrubland
Golden eagle	Cliff and canyon, desert shrubland, saltbush shrubland
Peregrine falcon	Cliff and canyon, desert shrubland, herbaceous wetland, saltbush shrubland, woody riparian and wetlands
Prairie falcon	Cliff and canyon, desert shrubland, saltbush shrubland
Western snowy plover	Barren/ sparsely vegetated, herbaceous wetland
Burrowing owl	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Long-eared owl	Desert shrubland, riparian, saltbush shrubland, woody riparian and wetlands
Red-naped sapsucker	Woody riparian and wetlands
Loggerhead shrike	Saltbush shrubland
Gray vireo	Cliff and canyon, desert shrubland, saltbush shrubland
Bendire's thrasher	Desert shrubland
Crissal thrasher	Desert shrubland, saltbush shrubland, woody riparian and wetlands
LeConte's thrasher	Desert shrubland, woody riparian and wetlands

Table 3.8-57 BLM Sensitive and State-protected Species Potentially Occurring in Region IV

BLM Sensitive and State-protected Species Associated with Vegetation Communities	Vegetation Communities
Phainopepla	Desert shrubland, woody riparian and wetlands
Lucy's warbler	Woody riparian and wetlands
Yellow-breasted chat	Riparian, woody riparian and wetlands
Reptiles	
Banded Gila monster	Barren/ sparsely vegetated, desert shrubland
Chuckwalla	Barren/ sparsely vegetated, desert shrubland
Desert glossy snake	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Desert iguana	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Desert night lizard	Barren/ sparsely vegetated, cliff and canyon, desert shrubland
Long-nosed leopard lizard	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Mojave rattlesnake	Desert shrubland
Mojave shovel-nosed snake	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Sidewinder	Barren/ sparsely vegetated, desert shrubland
Speckled rattlesnake	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Western banded gecko	Barren/ sparsely vegetated, desert shrubland, saltbush shrubland
Western red-tailed skink	Riparian, woody riparian and wetlands
Western threadsnake (blindsnake)	Barren/ sparsely vegetated, desert shrubland, herbaceous wetland, riparian, saltbush shrubland, woody riparian and wetlands
Zebra-tailed lizard	Barren/ sparsely vegetated, desert shrubland
Terrestrial Invertebrates	
Great Basin small blue (Small blue) butterfly	Barren/ sparsely vegetated, desert shrubland, riparian, woody riparian and wetlands
Honey Lake blue butterfly	Barren/ sparsely vegetated, saltbush shrubland
Mojave gypsum bee	Barren/ sparsely vegetated, desert shrubland
Mojave poppy bee	Barren/ sparsely vegetated, desert shrubland
Mono Basin skipper (Railroad Valley skipper) butterfly	Desert shrubland
Northern Mojave blue (Mojave blue) butterfly	Barren/ sparsely vegetated, desert shrubland
Rice's blue butterfly	Barren/ sparsely vegetated, saltbush shrubland

Implementation of TWE-32 and **WLF-1** would reduce impacts during the breeding season for many special status BLM sensitive, USFS sensitive, and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative IV-A, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Alternative IV-B

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region IV include three federally listed and one federal candidate species, 65 BLM

sensitive species, USFS sensitive species, and state-protected species. Species-specific impacts are discussed below. Suitable habitat for the Yuma clapper rail does not occur along Alternative IV-B; therefore, impacts to this species are not expected to occur. Section 3.7.6.6 presents a description of existing disturbance along Alternative IV-B.

Desert Tortoise (Threatened)

The desert tortoise occurs along the entire length of Alternative IV-B (**Figure 3.8-6**). This species is found exclusively with the Mojave Desert shrub community.

The types of impacts to the desert tortoise under Alternative IV-B generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-54**). Impacts to the desert tortoise may occur as a result of the construction and operation disturbance of 553 acres and 171 acres, respectively, of potentially suitable habitat. These areas represent 0.11 percent and 0.04 percent, respectively, of potentially suitable habitat within the Region IV desert tortoise analysis area.

Several factors would combine to help minimize desert tortoise impacts as a result of the construction of Alternative IV-B. First, through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise habitat would be identified and avoided where possible. Second, by implementing **SSWS-4**, direct impacts to the desert tortoise would be reduced as appropriate mitigation measures approved by the USFWS would be implemented. Therefore, impacts under Alternative IV-B would be limited primarily to habitat loss and fragmentation.

Western Yellow-billed Cuckoo (Candidate)

This species may occur along Alternative IV-B in southern Nevada in close proximity to perennial streams, wetlands, and lakes.

The types of impacts to the western yellow-billed cuckoo under Alternative IV-B generally would be the same as described for Alternative I-A (**Table 3.8-56**). Under Alternative IV-B, direct impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 12 acres and 2 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 1.06 percent and 0.18 percent, respectively, of potentially suitable habitat within the Region IV western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoo under Alternative IV-B would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher may occur within suitable riparian habitat along Alternative IV-B in southern Nevada. Potential suitable habitat for the southwestern willow flycatcher near Alternative IV-B includes portions of the Meadow Valley Wash, the Muddy River, and the Colorado River System (Hiatt and Boone 2003).

The types of impacts to the southwestern willow flycatcher under Alternative IV-B generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-56**). Alternative IV-B would result in the construction and operation disturbance of 12 acres and 2 acres, respectively, of potentially suitable habitat. These areas represent 1.06 percent and 0.18 percent, respectively, of potentially suitable habitat within the Region IV southwestern willow flycatcher analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-8** would reduce impacts during the southwestern willow flycatcher breeding season (March 15 to October 15). Remaining impacts to nesting southwestern willow flycatchers under Alternative IV-B would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail may occur within suitable marsh habitat in southern Nevada along Alternative IV-B.

Direct impacts to the Yuma clapper rail include habitat loss, modification, and fragmentation (**Table 3.8-56**). Alternative IV-B would result in the construction and operation disturbance of 12 acres and 2 acres, respectively, of potentially suitable wetland habitat. These areas represent 1.06 percent and 0.18 percent, respectively, of suitable habitat within the Region IV Yuma clapper rail analysis area.

Improved access as a result of Project roads under Alternative IV-B may result in increased human disturbance to the species. These impacts would be more pronounced if construction were to occur during the breeding season.

Operation of the proposed Project would incrementally increase the collision potential for Yuma clapper rails. Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associate Components, presents details regarding collision impacts to migratory birds.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 would reduce impacts during the Yuma clapper rail breeding season. Remaining impacts to Yuma clapper rails under Alternative III-B would be limited to a minor amount of temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur along Alternative IV-B are presented in **Table 3.8-57**. The types of impacts under Alternative IV-B to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with desert shrubland are more likely to be impacted. Impacts to this habitat type are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, Western, and NDOW.

Implementation of TWE-32 and **WLF-1** would reduce impacts during the breeding season for many special status BLM sensitive and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative IV-B, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

<u>Alternative IV-C</u>

Based on species occurrence information and habitat associations, special status wildlife species that may be impacted in Region IV include three federally listed and one federal candidate species, 65 BLM sensitive species and state-protected species. Species-specific impacts are discussed below. Suitable habitat for the Yuma clapper rail does not occur along Alternative IV-C; therefore, impacts to this species

are not expected to occur. Section 3.7.6.6 presents a description of existing disturbance along Alternative IV-C.

Desert Tortoise (Threatened)

The desert tortoise is found along the entire length of Alternative IV-C (**Figure 3.8-6**). This species is found exclusively with the Mojave Desert shrubland community.

The types of impacts to the desert tortoise under Alternative IV-C generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-54**). Impacts to the desert tortoise may occur as a result of the construction and operation disturbance of 645 acres and 172 acres, respectively, of potentially suitable habitat. These areas represent 0.13 percent and 0.04 percent, respectively, of potentially suitable habitat within the Region IV desert tortoise analysis area.

Several factors would combine to help minimize impacts to the desert tortoise as a result of the construction of Alternative IV-C. First, through implementation of ECO-1, ECO-4, and TWE-29, desert tortoise habitat would be identified and avoided where possible. Second, by implementing **SSWS-4**, direct impacts to desert tortoises would be reduced as appropriate mitigation measures approved by the USFWS would be implemented. Therefore, impacts under Alternative IV-C would be limited primarily to habitat loss and fragmentation.

Western Yellow-billed Cuckoo (Candidate)

This species may occur along Alternative IV-C in southern Nevada in close proximity to perennial streams, wetlands, and lakes.

The types of impacts to the western yellow-billed cuckoo under Alternative IV-C generally would be the same as described for Alternative I-A (**Table 3.8-56**). Under Alternative IV-C, direct impacts to the western yellow-billed cuckoo may occur as a result of the construction and operation disturbance of 12 acres and 2 acres, respectively, of potentially suitable woody riparian and wetland habitats. These areas represent 1.06 percent and 0.18 percent, respectively, of potentially suitable habitat within the Region IV western yellow-billed cuckoo analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-6** would reduce impacts during the western yellow-billed cuckoo breeding season (March 15 to October 15). Remaining impacts to nesting western yellow-billed cuckoos under Alternative IV-C would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Southwestern Willow Flycatcher (Endangered)

The southwestern willow flycatcher may occur within suitable riparian habitat along Alternative IV-C in southern Nevada. Potential suitable habitat for the southwestern willow flycatcher near Alternative IV-C includes portions of the Meadow Valley Wash, the Muddy River, and the Colorado River System (Hiatt and Boone 2003).

The types of impacts to the southwestern willow flycatcher under Alternative IV-C generally would be the same as described for Alternative III-A, but would differ in the amount of habitat disturbed (**Table 3.8-56**). Alternative IV-C would result in the construction and operation disturbance of 12 acres and 2 acres, respectively, of potentially suitable habitat. These areas represent 1.06 percent and 0.18 percent, respectively, of potentially suitable habitat within the Region IV southwestern willow flycatcher analysis area.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 and **SSWS-8** would reduce impacts during the southwestern willow flycatcher breeding season (March 15 to October 15). Remaining impacts to nesting southwestern willow flycatchers under Alternative IV-C would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and the extent of native habitats in the surrounding Project region.

Yuma Clapper Rail (Endangered)

The Yuma clapper rail may occur within suitable marsh habitat in southern Nevada along Alternative IV-C.

Direct impacts to the Yuma clapper rail include habitat loss, modification, and fragmentation (**Table 3.8-56**). Alternative IV-C would result in the construction and operation disturbance of 12 acres and 2 acres, respectively, of potentially suitable wetland habitat. These areas represent 1.06 percent and 0.18 percent, respectively, of suitable habitat within the Region IV Yuma clapper rail analysis area.

Improved access as a result of Project roads under Alternative IV-C may result in increased human disturbance to the species. These impacts would be more pronounced if construction were to occur during the breeding season.

Operation of the proposed Project would incrementally increase the collision potential for Yuma clapper rails. Section 3.7.6.2, Impacts to Wildlife Common to All Alternative Routes and Associate Components, presents details regarding collision impacts to migratory birds.

TWE's design features and BMPs for minimizing impacts to wetland/riparian habitats are described in **Appendix C**. In addition, implementation of TWE-32 would reduce impacts during the Yuma clapper rail breeding season. Remaining impacts to Yuma clapper rails under Alternative III-C would be limited to a minor amount of temporary habitat disturbance. This disturbance is anticipated to have little impact given the linear nature of the Project and extent of native habitats in the surrounding Project region.

BLM Sensitive and State-Protected Species

BLM sensitive and state-protected species that may occur along Alternative IV-C are presented in **Table 3.8-57**. The types of impacts of construction and operation to BLM sensitive and state-protected species generally would be the same as discussed in Section 3.7.6.1, Impacts to Wildlife Common to All Alternative Routes and Associated Components. Species associated with desert shrubland are more likely to be impacted. Impacts to this habitat type are presented in Section 3.5.6, Impacts to Vegetation. Total habitat impacts can be calculated from the vegetation tables by adding the ROW clearing/trampling acreages and the facilities acreages to determine construction disturbance. The operations numbers alone reflect acres of operations disturbance for each vegetation community/habitat type. Additional species-specific mitigation measures and habitat surveys will be coordinated with the BLM, Western, and NDOW.

Implementation of TWE-32 and **WLF-1** would reduce impacts during the breeding season for many special status BLM sensitive and state-protected species. Species-specific mitigation measures and habitat surveys also would reduce impacts to these species. Under Alternative IV-C, remaining impacts to special status wildlife species, especially nesting raptor and other migratory bird species, would be limited to temporary habitat disturbance. This disturbance is anticipated to have little impact to BLM sensitive and state-protected species given the extent of native habitats in the surrounding Project region.

<u>Alternative Variations in Region IV</u>

The types of impacts to special status wildlife species under the Marketplace Alternative Variation in Region IV generally would be the same as the comparable portions of Alternatives IV-B, but would differ in the amount of habitat disturbed (**Table 3.8-58**). After considering design features and mitigation measures,

impacts to special status wildlife species from Project construction and operation would be similar to the comparable portions of Alternatives IV-B.

Table 3.8-58 Summary of Region IV Alternative Variation Impact Parameters for Special Status Wildlife Species

Impact Parameters	Marketplace Alternative Variation			Comparable Portion of Alternative IV-B		
	Construction Impact	Operation Impact	Indirect Impact	Construction Impact	Operation Impact	Indirect Impact
Desert tortoise critical habitat (acres)	0	0	0	0	0	0
Desert tortoise potential habitat (acres)	109	21	5,232	80	18	7,038
USGS habitat model ranking 0.6 and higher (acres)	107	20	4,958	78	18	6,362
Length of transmission line (miles)	8			7		
Number of special status raptor nests within 1 mile of the reference line	0			0		

Alternative Connectors in Region IV

The five alternative connectors would include minimal increases of total special status wildlife habitat disturbance if they were to be utilized. These alternative connectors would cross desert tortoise potential habitat. **Table 3.8-59** summarizes impacts associated with the alternative connectors in Region IV.

Table 3.8-59 Summary of Region IV Alternative Connector Impact Parameters for Wildlife

Alternative Connector	Analysis
Sunrise Mountain Alternative Connector	• Approximately 0 acres of construction and 0 acres of operation impacts to desert tortoise critical habitat would occur. • Approximately 38 acres of construction and 8 acres of operation impacts to desert tortoise potential habitat would occur. • Approximately 26 acres of construction and 6 acres of operation impacts to desert tortoise USGS habitat model ranking 0.6 and higher. • No special status raptor nests are within 1 mile of the reference line.
Lake Las Vegas Alternative Connector	• Approximately 0 acres of construction and 0 acres of operation impacts to desert tortoise critical habitat would occur. • Approximately 54 acres of construction and 19 acres of operation impacts to desert tortoise potential habitat would occur. • Approximately 52 acres of construction and 18 acres of operation impacts to desert tortoise USGS habitat model ranking 0.6 and higher. • No special status raptor nests are within 1 mile of the reference line.

Table 3.8-59 Summary of Region IV Alternative Connector Impact Parameters for Wildlife

Alternative Connector	Analysis
Three Kids Mine Alternative Connector	• Approximately 0 acres of construction and 0 acres of operation impacts to desert tortoise critical habitat would occur. • Approximately 93 acres of construction and 34 acres of operation impacts to desert tortoise potential habitat would occur. • Approximately 81 acres of construction and 30 acres of operation impacts to desert tortoise USGS habitat model ranking 0.6 and higher. • No special status raptor nests are within 1 mile of the reference line.
River Mountains Alternative Connector	• Approximately 0 acres of construction and 0 acres of operation impacts to desert tortoise critical habitat would occur. • Approximately 142 acres of construction and 57 acres of operation impacts to desert tortoise potential habitat would occur. • Approximately 104 acres of construction and 41 acres of operation impacts to desert tortoise USGS habitat model ranking 0.6 and higher. • One peregrine falcon nest is within 1 mile of the reference line.
Railroad Pass Alternative Connector (Alts IV-A & IV-B)	• Approximately 0 acres of construction and 0 acres of operation impacts to desert tortoise critical habitat would occur. • Approximately 58 acres of construction and 14 acres of operation impacts to desert tortoise potential habitat would occur. • Approximately 56 acres of construction and 13 acres of operation impacts to desert tortoise USGS habitat model ranking 0.6 and higher. • No special status raptor nests are within 1 mile of the reference line.

Region IV Conclusion

A comparison of impact parameters for Region IV alternatives indicates that potential construction and operation impacts to special status wildlife species would be varied across all alternatives as shown in **Table 3.8-56**. Alternative IV-C would result in the greatest direct and indirect impacts to desert tortoise potential habitat in comparison to the other Region IV alternatives (**Table 3.8-54**). Alternative IV-C also would result in the greatest direct and indirect impacts to Southwestern willow flycatcher, Western yellow-billed cuckoo, and Yuma clapper rail potential habitat in comparison to the other Region IV alternatives (**Table 3.8-56**). The greatest level of impacts to special status wildlife species among all Region IV alternatives associated with Alternative IV-C is due to greater impacts to desert tortoise habitat. However, project effects on special status wildlife species and their potential habitat would be avoided or considered to be low magnitude and short-term after applying BMPs, design features, and additional mitigation.

3.8.6.8 Impacts from the No Action Alternative

Under the No Action Alternative, the proposed Project would not be constructed or operated. The special status wildlife analysis area would exist under current authorizations and land uses (e.g., livestock grazing, agriculture, energy development, mining, etc.). Therefore, impacts to special status wildlife species associated with the development of the proposed Project would not occur.

3.8.6.9 Residual Impacts

Although it is anticipated that wildlife mitigation measures would be successfully implemented, some residual impacts to wildlife would occur. Wildlife injuries and mortalities are expected to occur as a result of

collisions with transmission towers and guy wires, collisions with transmission lines, and collisions with vehicles.

It is anticipated that reclamation efforts would be successful and thus no residual impacts to habitats would occur. Timeframes for successful reclamation can vary by habitat type and initial impact intensity. During extended periods of reclamation it is expected that habitat functionality may be reduced due to habitat fragmentation.

3.8.6.10 Irreversible and Irretrievable Commitment of Resources

Construction and operation of any of the proposed Project alternatives would result in the irretrievable commitment of both wildlife and wildlife habitats during the life of the project. Depending on the selection of alternatives, the amount of wildlife habitat irretrievably committed would range from 9,959 acres to 12,164 acres. However, as discussed **Appendix D**, it is anticipated that upon decommissioning of the Project reclamation measures should result in the return of impacted areas to native habitats. Some vegetation communities are expected to return to a native state within in a relatively short period of time (i.e., 5 years). Other more sensitive habitats such as sagebrush shrublands may require up to 50 years or longer to return to native conditions. Regardless of timeframes, it is possible that wildlife habitat disturbed during construction could return to pre-project conditions, thus avoiding any irreversible commitments of wildlife resources.

3.8.6.11 Relationship Between Local Short-term Uses and Long-term Productivity

Wildlife habitat would be diminished until reclaimed areas return to mature vegetation communities. As discussed above, these temporal losses can vary in the time required to return to pre-construction conditions. This range of temporal loss is expected to be between 5 and 50 years, depending upon the vegetation community. Construction and operation of any of the Project alternatives is anticipated to result in minor impacts to the short-term productivity of local migratory bird populations and sagebrush obligate wildlife species due to loss or degradation of habitat. These impacts are expected to be limited to mortality resulting from collisions with Project infrastructure and avoidance due to increased predation. Impacts from direct habitat loss are expected to be negligible because the total anticipated loss of wildlife habitat due to Project construction will be less than 1 percent of available habitats within the Project analysis area.