Wildlife Impact Assessment

Waterview North Development

El Paso County, Colorado

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Sign-off Sheet

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Acronym List

CPW	Colorado Parks and Wildlife
CPR	CPR Entitlements, LLC
ESA	Endangered Species Act
GPS	Global Positioning System
Project	Waterview North Development
DSE	Dakota Springs Engineering, LLC
T&E	threatened and endangered
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

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1.0 INTRODUCTION

The Waterview North Development Project (Project) consists of 116.53 acres with proposed land uses of approximately 625 single family residential lots, 18.6 acres of commercial development and 28.5 acres of Industrial Development.

Dakota Springs Engineering, LLC (DSE), as required by CPR Entitlements, LLC (CPR) per the Land Use Development Code of El Paso County, Colorado (El Paso County 2015), performed a wildlife impact assessment of the immediate Waterview North Development area (Project area) located southeast of Colorado Springs, Colorado (Section 9, Township 15 South , Range 65 West) (**Figure 1-1**). The wildlife impact assessment also included a 0.5-mile-radius buffer surrounding the Project area (i.e., wildlife study area) to capture wildlife species that have protection buffers or seasonal timing restrictions associated with them (e.g., raptors) (**Figure 1-2**). General wildlife (big game, small game, nongame, aquatic resources) and special status species (federally listed species, state-listed species, and species of concern) were included in the wildlife impact assessment.

This report presents the methodology, results, impact assessment, and conclusions and recommendations of the wildlife impact assessment.

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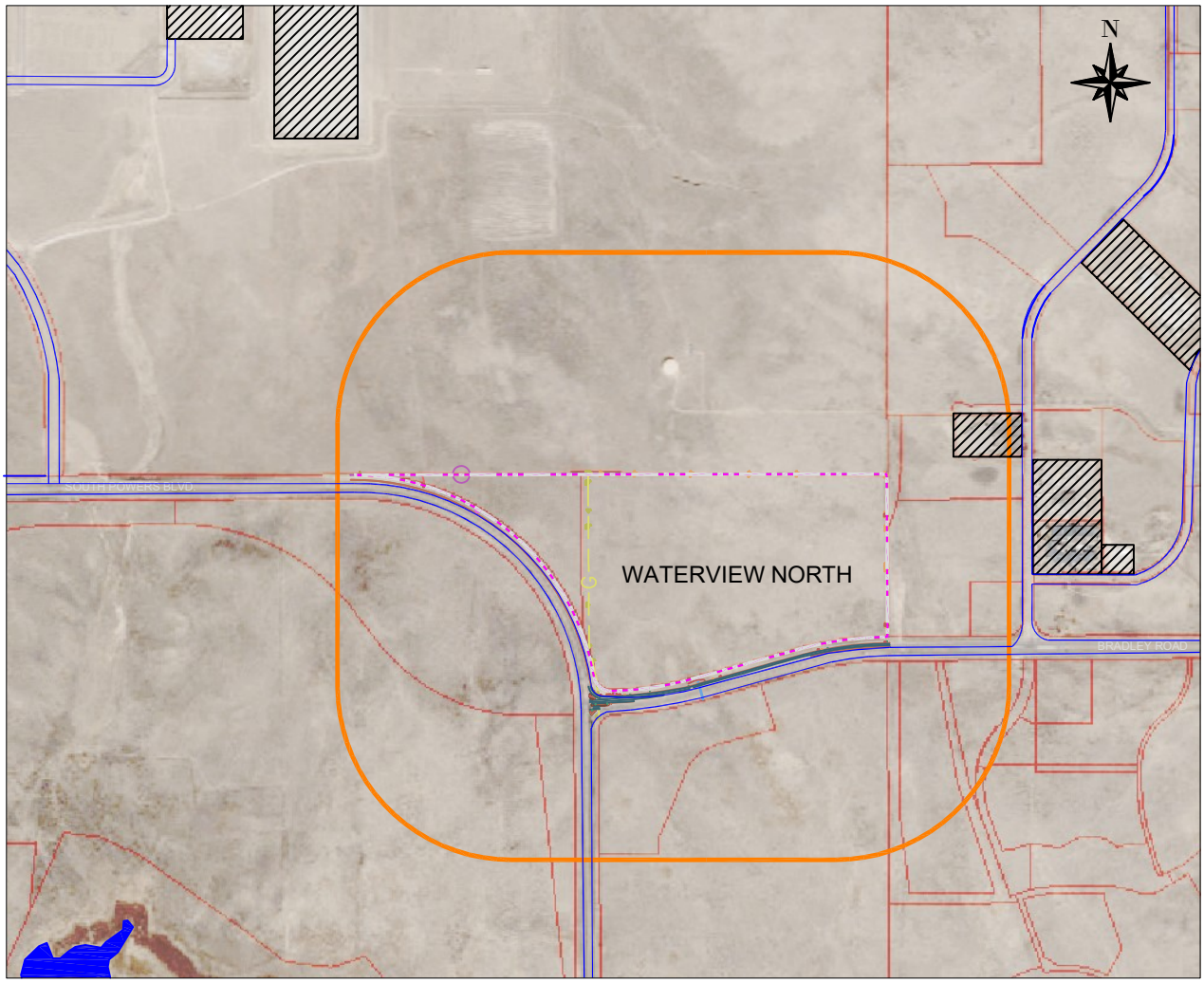
PROJECT WATERVIEW SKETCH PLAN AMENDMENT

SHEET TITLE VICINITY MAP

FIG. 1



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LEGEND

- Project Site Boundary
- Wildlife Study Area (.5-Mile-Radius buffer of Project Site)
- Barren Land
- Developed Land
- Property Boundaries
- ROADS
- RESERVOIR WATER

PROJECT WATERVIEW SKETCH PLAN AMENDMENT

SHEET TITLE LAND USE AND COVER

0 .25 .50

SCALE: (IN MILES)

FIG. 2

2.0 METHODS

2.1 DESKTOP HABITAT ASSESSMENT

The desktop habitat assessment utilized publicly available information sources such as aerial imagery; topographical maps; biological resource, soils, wetland, and land cover databases; published reports; search engines hosted by federal agencies or regulator-endorsed or accepted institutions and organizations; and applicable legislation and guidelines. This information was consolidated to describe the potential for occurrence of wildlife and special status species and their habitat in the wildlife study area.

For general wildlife, Colorado Parks and Wildlife (CPW) data (CPW 2017a) and Colorado-specific wildlife literature was reviewed. This data included, but was not limited to, big game ranges, raptor nests, black-tailed prairie dog (*Cynomys ludovicianus*) colonies, and Colorado breeding bird atlas and Christmas bird count data.

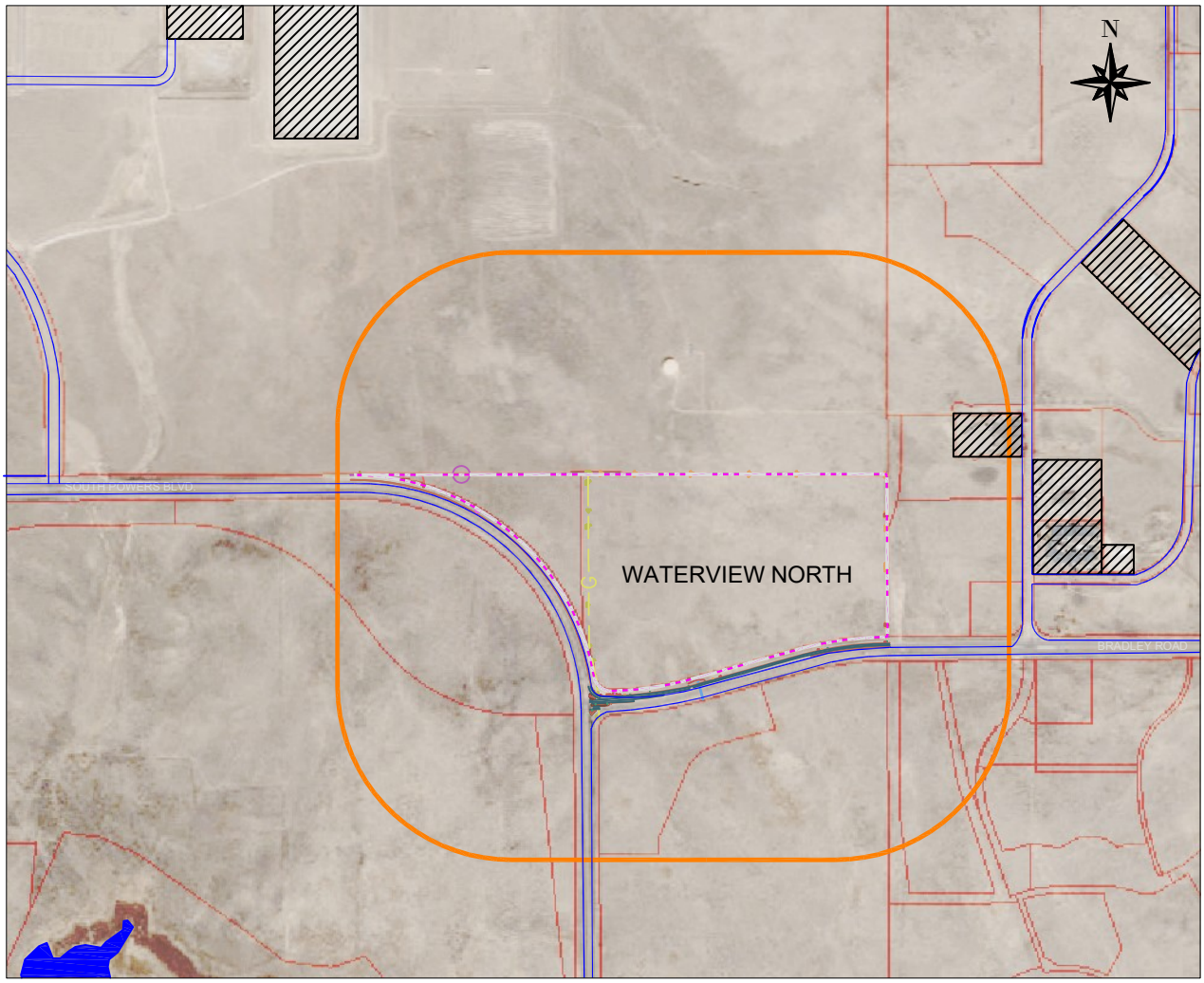
For the special status species habitat assessment, a list of federally threatened or endangered (T&E) species whose ranges include El Paso County, Colorado, was obtained from the United States (U.S.) Fish and Wildlife Service (USFWS) Endangered Species website (USFWS 2017a). In addition, DSE reviewed CPW data for site-specific information related to state-listed T&E species and species of concern (CPW 2017b).

For both general wildlife and special status species, the desktop assessment included the identification of grassland, stands of trees, water features, and other natural vegetation communities present within the wildlife study area (**Figure 2-1**).

2.2 FIELD SURVEY

A ground-based wildlife field survey was conducted by a DSE personnel on March 8, 2020. The field survey consisted of a pedestrian survey in the Project area (**Figure 2-1**). While portions of the wildlife study area were surveyed via use of binoculars and by driving on public roads, the entire wildlife study area was not surveyed due to lack of access. All wildlife observations were recorded, specifically active and inactive prairie dog colonies. Black-tailed prairie dog colonies were delineated by walking the perimeter of the colony. A colony was determined to be active if black-tailed prairie dogs were observed or fresh sign (e.g., scat, recent tracks, digging) was present.

No raptor nesting sites were observed in the project area or the study area.



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LEGEND

- Project Site Boundary
- Wildlife Study Area (.5-Mile-Radius buffer of Project Site)
- Barren Land
- Developed Land
- Property Boundaries
- ROADS
- RESERVOIR WATER

PROJECT WATERVIEW SKETCH PLAN AMENDMENT

SHEET TITLE LAND USE AND COVER

0 .25 .50

SCALE: (IN MILES)

FIG. 2

3.0 RESULTS

3.1 DESKTOP HABITAT ASSESSMENT

Wildlife habitat within and immediately adjacent to the wildlife study area is primarily grassland (**Figure 2-1**; **Appendix A, Photos 1** and **2**), although a portion of Big Johnson Reservoir is just southwest of the wildlife study area. In addition, the Colorado Springs Airport abuts the property to the north and patches of developed land are located along South Powers Boulevard and Bradley Road. One tree is present within the western boundary of the Project area within the Powers Boulevard r.o.w. No wetland or waterbodies are present within the Project area but several intermittent streams (with freshwater emergence wetlands according to National Wetland Inventory data) flow southeast out of the wildlife study (approximately 1 mile southeast) area towards Fontaine Boulevard (**Figure 2-1**).

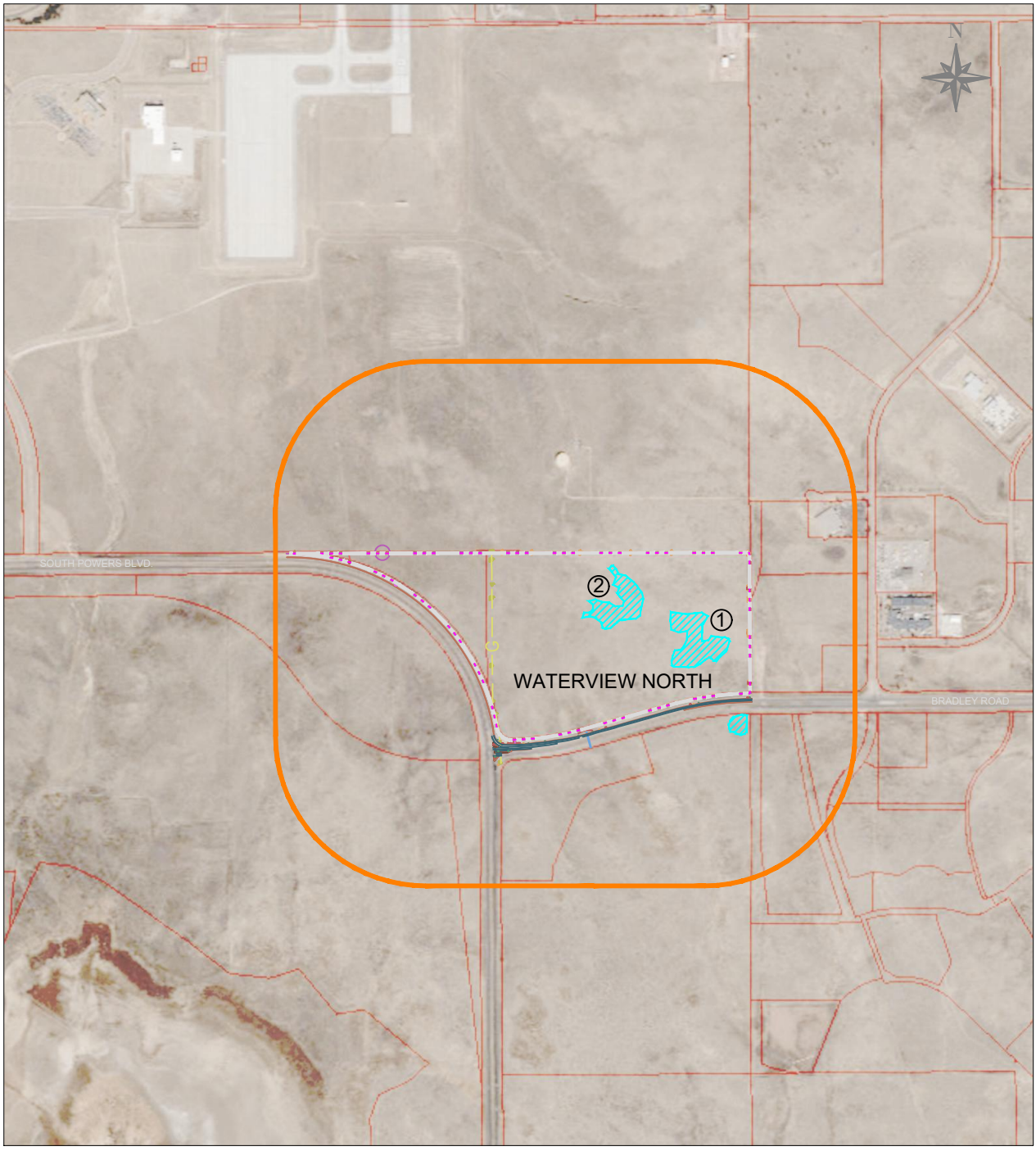
No crucial ranges for big game (e.g., mule deer [*Odocoileus hemionus*], white-tailed deer [*Odocoileus virginianus*], and pronghorn [*Antilocapra americana*]) occur within the wildlife study area. The wildlife study area is classified by CPW as overall range for mule deer, white-tailed deer (only eastern portion), pronghorn, black bear (*Ursus americanus*) (only southern portion), and swift fox (*Vulpes velox*) as well as winter range for the bald eagle *(Haliaeetus leucocephalus*). According to communication with CPW, there is an active bald eagle nest on the western side of Big Johnson Reservoir, approximately 1.0 mile southwest of the wildlife study area and approximately 1.5 mile southwest of the Project area (CPW 2017c).

3.2 FIELD SURVEY

While the field survey encompassed all wildlife species that may be present within the Project area, special attention was paid to black-tailed prairie dog colonies and raptor nesting and foraging habitat nests due to their suspected use of the Project area and implications towards potential Project mitigation.

3.2.1 Black-tailed Prairie Dog Colonies

A total of two active black-tailed prairie dog colonies were observed within or partly within the Project area. The locations of each colony are shown on **Figure 3-1. Table 3-1** details the status and size of each colony delineated during the field survey. Photos of the black-tailed prairie dog colonies are presented in **Appendix A, Photo 3**.



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PROJECT WATERVIEW SKETCH PLAN AMENDMENT

SHEET TITLE WILDLIFE FIELD SURVEY

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0 .25 .50

SCALE: (IN MILES)

LEGEND

- Black-Tailed Prarie Dog Colony
- Project Site Boundary
- Wildlife Study Area (.5-Mile-Radius buffer of Project Site)

FIG. 4

Table 3-1 Black-tailed Prairie Dog Colonies

Identification Number	Size (acres)	Status
1	2.1	Active
2	1.7	Active

3.3 RAPTOR NESTS

No Raptor nest were observed on site. There is only one tree in the study area and it is only about 20-feet tall. During the field survey, a short eared owl (*Asio flammeus*) was observed perched in the lone tree and again on a hill within the project area as they are known to do; no nests were observed in the Project area.

3.4 OTHER WILDLIFE

No other wildlife were observed within the Project area during the March 9, 2020, field survey.

While no Raptor Nests or Burrowing Owls were observed in the study area reference materials for protection of these animals are included in the Appendices.

4.0 IMPACT ASSESSMENT

4.1 GENERAL WILDLIFE

4.1.1 Big Game

4.1.1.1 Baseline Conditions

Big game species potentially occurring within the Project area include pronghorn, white-tailed deer, and mule deer (Armstrong et al. 2011). Pronghorn inhabit grasslands and shrublands with flat to rolling topography and browse on forbs and shrubs throughout the year. White-tailed deer and mule deer occur in virtually all habitat types along the Front Range and eastern plains of Colorado, but reach their greatest densities in cultivated cropland, river bottoms, and shrublands on rough, broken terrain, which provide abundant browse and cover (Armstrong et al. 2011).

4.1.1.2 Impacts

Impacts to big game species (e.g., mule deer, white-tailed deer, and pronghorn) include the permanent loss of approximately 116.53 acres of potential forage and cover (native vegetation and previously disturbed vegetation) and an increase in habitat fragmentation within the Project surface disturbance area. However, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space southwest of the Project area) would be available for big game species. Therefore, while habitat impacts to big game species are expected to occur, long-term impacts to big game populations in the Project region are not expected to occur.

4.1.2 Small Game

4.1.2.1 Baseline Conditions

Upland game birds known or likely to occur within the Project area include mourning doves (*Zenaida macroura*) and scaled quail (*Callipepla squamata*) (Kingery 1998). Mourning doves are common throughout the Project region, especially in areas with scattered trees and water. Scaled quail typically are found in grasslands and shrublands (Kingery 1998). Due to the lack of perennial water sources and cultivated cropland (i.e., corn or wheat), no waterfowl occur within the Project area. Small game mammals likely to occur within the Project area include desert cottontail and black-tailed jackrabbit (*Lepus californicus*). Both of these species are common in grassland and shrubland habitats along the Front Range and eastern plains of Colorado (Armstrong et al. 2011).

4.1.2.2 Impacts

Direct impacts to small game species (e.g., mourning dove, scaled quail, and desert cottontail) would include the incremental permanent reduction of approximately 116.53 acres of suitable habitat. Impacts also would include displacement from the disturbance areas and increased habitat fragmentation. In most instances, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas north and east of the Project area) would be available for use by these species. However, displacement would increase competition and could include some local reductions in wildlife populations if adjacent habitats are at carrying capacity. Potential impacts also could include nest and burrow abandonment or loss of eggs or young. However, while potential impacts to small game from Project development are expected to occur, these losses would only reduce productivity for that breeding season.

4.1.3 Nongame

4.1.3.1 Baseline

Nongame species potentially occurring within the Project area encompass a large diversity of animal taxa. Important nongame species primarily include a number of mammals, raptors, songbirds, amphibians, and reptiles.

Mammal species that potentially occur within the Project area include, but are not limited to, little brown myotis (*Myotis lucifugus*), western small-footed myotis (*Myotis subulatus*),fringed myotis (*Myotis thysanodes*), yuma myotis (*Myotis yumanensis*), hoary bat (*Lasiurus cinereus*), desert cottontail, black tailed jackrabbit, thirteen-lined ground squirrel (*Citellus tridecemlineatus*), plains pocket gopher (*Geomys bursarius*), coyote, red fox (*Vulpes fulva*), and badger (*Taxidea taxus*) (Armstrong et al. 2011).

Migratory Birds including Raptors

Raptor species that may occupy habitats within the Project area are those associated with grasslands and shrublands. These species include, but may not be limited to, bald eagle (*Haliaeetus leucocephalus),* golden eagle, red-tailed hawk*,* ferruginous hawk (*Buteo fregalis*), Swainson's hawk (*Buteo swainsoni*), American kestrel (*Falco sparverius),* Prairie falcon (*Falco mexicanus*), burrowing owl, great horned owl (*Bubo virginianus)*, long-eared owl (*Asio otus*), northern harrier, and the turkey vulture (*Carthartes aura*) (Kingery 1998).

Passerine species known or likely to occur within the Project area include the common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), western kingbird (*Tyrannus verticalis*), lark bunting (*Calamospiza melanocorys*), horned lark, western meadowlark (*Sturnella neglecta*), and various species of sparrows (Kingery 1998; Peterson 1990).

Amphibians and Reptiles

Amphibian and reptile species that may occur within the Project area are typical of the Front Range and eastern plains of Colorado (Hammerson 1999). These species include, but are not

limited to, woodhouse's toad (*Bufo woodhousii*), plains spadefoot toad (*Spea bombifrons*), collared lizard (*Crotaphytus collaris*), prairie/plateau lizard (*Sceloporus undulatus*), short-horned lizard (*Phrynosoma hernandesi*), and western rattlesnake (*Crotalus viridis*) (Hammerson 1999).

4.1.3.2 Impacts

Impacts to nongame species would be the same as those discussed above for small game species. Direct impacts to nongame species (e.g., small mammals, raptors, passerines, and reptiles) would include the incremental permanent reduction of approximately 195.6 acres of suitable habitat. Impacts also would include displacement from the disturbance areas and increased habitat fragmentation. In most instances, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas south and east of the Project area) would be available for use by these species. However, displacement would increase competition and could include some local reductions in wildlife populations if adjacent habitats are at carrying capacity. Potential impacts also could include nest and burrow abandonment or loss of eggs or young. However, while potential impacts to nongame species from Project development are expected to occur, these losses would only reduce productivity for that breeding season.

Migratory Birds including Raptors

A variety of resident and migratory passerine species (e.g., horned lark, lark bunting, western kingbird, common raven) and raptor species (e.g., eagles, hawks, falcons, owls) have been identified as potentially occurring within the Project area. Potential direct impacts to passerine and raptor species would include the temporary loss of approximately 116.53 acres of suitable breeding, roosting, and foraging habitat. However, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas north and east of the Project area) would be available for these species. Therefore, while habitat impacts to migratory birds including raptors are expected to occur, long-term impacts to populations in the Project area are not expected to occur.

Amphibians and Reptiles

Similar to the other nongame species discussed above, impacts to amphibians and reptiles as a result of the Project would include mortalities or displacement related to Project construction and habitat loss, alteration, and fragmentation. Construction activities may result in direct mortalities as a result of crushing of burrows from vehicles and equipment. In most instances, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas north and east of the Project area) would be available for use by these species. However, displacement would increase competition and could include some local reductions in wildlife populations if adjacent habitats are at carrying capacity. Potential impacts also could include burrow abandonment or loss of eggs or young. However, while potential impacts to nongame species from Project development are expected to occur, these losses would only reduce productivity for that breeding season.

4.1.4 Aquatic Resources

No perennial water sources occur within the Project area; therefore, no impacts to aquatic resources would occur as a result of the Project. A portion of Big Johnson Reservoir, which likely contains fish and other aquatic species, occurs within the wildlife study area but would not be directly impacted by the Project.

4.1.5 Federally-Listed Species

The USFWS county list for El Paso County, Colorado, indicates eight federally listed wildlife species and one federally proposed wildlife species whose habitat may occur within the county. Therefore, these species may be impacted by development activities associated with the Project. These species include:

- North American wolverine (*Gulo gulo luscus*) – Proposed Threatened
- Preble's meadow jumping mouse (*Zapus hudsonius preblei*) – Threatened
- Whooping crane (*Grus americana*) – Endangered
- Interior least tern (*Sterna antillarum)* – Endangered
- Piping plover (*Chardrius melodus)* – Threatened
- Mexican spotted owl (Strix occidentalis lucida) – Threatened
- Greenback cutthroat trout (Oncorhynchus clarki stomias) – Threatened
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Pawnee montane skipper (*Hesperia leonardus montana*) – Threatened

No USFWS-designated critical habitat occurs within the Project area.

4.1.5.1 North American Wolverine

The wolverine was listed as a federally proposed species (threatened) on October 18, 2016. This species occurs in remote wilderness areas that contain a high percentage of non-vegetative elements, such as rocks, talus slopes, avalanche chutes, caves, and rock crevices (U.S. Forest Service 2010). Very few occurrence records for this species exist for Colorado and the species is not known to currently occur in Colorado (Armstrong et al. 2011).

Due to the lack of known occurrences in Colorado and lack of suitable habitat within the Project area, impacts to this species would not occur as a result of the Project.

4.1.5.2 Preble's Meadow Jumping Mouse

The Preble's meadow jumping mouse is listed as a federal threatened species on May 13, 1998. This subspecies of jumping mouse occurs in habitats consisting of well-developed plains riparian vegetation with dense herbaceous vegetation that include of a variety of grasses, forbs, and

thick shrubs in close proximity to water. Suitable habitat can occur along stream channels, vegetated irrigation canals, ditches, and riparian and wetland areas (including native wet meadows) (Armstrong et al. 2011).

Suitable habitat for the Preble's meadow jumping mouse is not present within the Project area. Therefore, impacts to this species are unlikely to occur as a result of the Project.

4.1.5.3 Whooping Crane

The whooping crane was listed as endangered under the Endangered Species Preservation Act on March 11, 1967. Congress passed the Endangered Species Act (ESA) in 1973 and the species remained listed as endangered with critical habitat designated in 1978. The Project area is located outside of the known migration corridor for this species (USFWS 2009) and no suitable habitat (i.e., large wetlands adjacent to agricultural fields) is present within the Project area. Therefore, impacts would not occur as a result of the Project.

4.1.5.4 Interior Least Tern

The interior least tern was listed as endangered under the ESA by the USFWS on May 28, 1985. This species requires open expanses of sand or pebble beaches along river banks or reservoirs for nesting. In Colorado, the least tern is a local uncommon summer resident on southeastern plains rivers and reservoirs in the Arkansas River Valley, casual non-breeding summer visitor on the northeastern plains rivers and reservoirs, and a casual visitor to very rare spring and fall migrant on the northeastern plains rivers and reservoirs (Kingery 1998). Foraging habitat typically is located near these same river or reservoir habitats.

Suitable habitat for the interior least tern is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.5 Piping Plover

The Great Plains population of piping plovers was listed as threatened under the ESA by the USFWS on December 11, 1985. Similar to the interior least tern, this species requires open expanses of sand or pebble beaches along river banks or reservoirs for nesting. Foraging habitat typically is located in the immediate vicinity of nesting habitat. In Colorado, they are a very rare spring and fall migrant on eastern plains rivers and reservoirs (Kingery 1998).

Suitable habitat for the piping plover is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.6 Mexican Spotted Owl

The Mexican spotted owl was federally listed as threatened by the USFWS on April 15, 1993. Critical habitat for the species was designated August 31, 2004. In Colorado, breeding habitat of this species consists of deep sheer-walled, sandstone or rocky canyons from approximately 6,000

to 9,400 feet (Reynolds and Johnson 1996; Johnson 1997). These canyons contain either ponderosa pine and mixed-conifer forests or piñon-juniper forests with small, isolated patches of Douglas-fir (Reynolds and Johnson 1994; Johnson 1997). Although some birds may inhabit the same territory year-round, most owls migrate to lower elevations during the winter (October to March) (USFWS 1995). In Colorado, winter habitat for the species typically consists of low elevation, relatively open pinon-juniper forests (Kingery 1998; Johnson 1997).

Suitable habitat for the Mexican spotted owl is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.7 Greenback Cutthroat Trout

The greenback cutthroat trout was listed as endangered under the Endangered Species Preservation Act on March 11, 1967. Congress passed the ESA in 1973 and the species was reclassified as threatened in 1978. This species inhabits cold, clear, oxygenated streams of moderate gradient. Overhanging branches, undercut banks, and eddies behind rubble providing feeding and resting stations are required habitat (USFWS 2017b). This species is found in only a handful of headwater streams in the Arkansas River and South Platte River drainages (USWS 2017b).

Due to the lack of perennial water sources within the Project area, suitable habitat for the Greenback cutthroat trout is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.8 Pallid Sturgeon

The pallid sturgeon was listed as endangered under the ESA by the USFWS on September 6, 1990. This species inhabits large, braided, muddy rivers such as the Missouri and Mississippi river systems in the central U.S. It requires backwaters created by spring floods for spawning.

This species is not known to occur in Colorado; however, the USFWS has determined that water depletions within the South Platte River Basin in Colorado may impact this species and its downstream habitat. However, due to the Project not occurring within the South Platte River Basin, impacts to the pallid sturgeon would not occur.

4.1.5.9 Pawnee Montane Skipper

The Pawnee montane skipper was listed as federally threatened on September 25, 1987. This species occurs in dry, open, ponderosa pine woodlands on moderately steep slopes with soils derived from Pikes Peak granite. Blue grama grass, the larval food plant, and prairie gayfeather, the primary nectar plant, are two necessary components of the groundcover strata (USFWS 2017c). The subspecies occurs only in the South Platte Canyon River drainage system in Colorado, in portions of Jefferson, Douglas, Teller, and Park counties (USFWS 2017c).

Therefore, due to the Project not occurring within the South Platte River Basin and lack of suitable habitat within the Project area, impacts to the Pawnee montane skipper would not occur.

4.1.6 State-Listed Species and Species of Concern

The desktop habitat assessment and field survey results indicate the Project area consists of predominately grassland with some areas of developed land. Therefore, the following species from Colorado's Threatened and Endangered List (CPW 2017b) may occur within the wildlife study area:

- Bald Eagle – Species of Concern
- Burrowing Owl – State Threatened
- Ferruginous Hawk – Species of Concern
- Mountain Plover (*Charadrius montanus*) – Species of Concern
- Black-tailed Prairie Dog – Species of Concern
- Swift Fox (Vulpes velox) – Species of Concern

4.1.6.1 Bald Eagle

In Colorado, the bald eagle is classified as a species of concern by CPW and is protected under the Golden and Bald Eagle Protection Act. This species typically occurs near large bodies of water that support suitable roosting and foraging habitat. Nests are commonly built in mature cottonwoods or conifers along lakes or other large bodies of water (Johnsgard 1990; Kingery 1998). The Project area is within designated winter range for the bald eagle (CPW 2017a). According to communication with CPW, there is an active bald eagle nest near Big Johnson Reservoir, approximately 0.5 mile west of the wildlife study area and approximately 1 mile west of the Project area (CPW 2017c).

However, due to the distance of the active nest site from the Project area and the level of existing human activity in the immediate Project vicinity (relatively high traffic use on Powers Boulevard and Bradley Road), this species is likely habituated to human activity and impacts would be considered low.

4.1.6.2 Burrowing Owl

The burrowing owl is state-listed as threatened in Colorado. This species inhabits burrows in open, dry, treeless areas on plains, prairies, and desert floors. Level to gentle slopes, short vegetation, and high percentages of bare ground are key indicators of quality habitat. Burrowing owls usually select sites recently occupied by burrowing animals such as prairie dogs, ground squirrels, and badgers (Kingery 1998). During the field survey, no burrowing owl burrows were located in the project area.

Due to the presence of likely historic nesting burrows and the presence of suitable habitat (i.e., black-tailed prairie dog colonies) within the Project area, impacts to this species may occur as a result of the Project if ground disturbing activities take place during the species breeding season (April 1 to September 15).

4.1.6.3 Ferruginous Hawk

In Colorado, the ferruginous hawk is classified as a species of concern by CPW. This species occurs in open semi-arid habitats including basin-prairie shrubland, mountain-foothills, and badlands. Nest sites include short trees, ledges, and rock outcrops in sagebrush valleys and rolling grassland habitat (Johnsgard 1990; Kingery 1998).

No evidence of ferruginous hawks inhabiting the wildlife study area was found during the field survey. However, based on the presence of relatively large black-tailed prairie dog colonies within the Project area and immediate vicinity and three cottonwood trees along the western boundary of the Project area, it is likely that ferruginous hawks would use the Project area for foraging and possible nesting. Impacts to this species as a result of the Project may occur if ground disturbing activities take place during the breeding season (February 1 to July 15).

4.1.6.4 Mountain Plover

In Colorado, the mountain plover is classified as a species of concern by CPW. This species inhabits flat, short-grass prairie in areas recently burned, overgrazed by livestock, or occupied by prairie dog colonies (Kingery 1998).

Due to the time of year of the field survey, detection of individual mountain plovers was not possible as the species does not reside in Colorado during the winter months. In addition, much of the Project area is grassland that is too tall for mountain plovers, making the Project area unsuitable habitat for the species. Therefore, impacts to this species would not occur as a result of the Project.

4.1.6.5 Black-tailed Prairie Dog

In Colorado, the black-tailed prairie dog is classified as a species of concern by CPW. This species inhabits short-grass and mixed-grass prairies throughout the Great Plains and west-central U.S. Areas with sparse vegetation and suitable soils for burrowing are most commonly used by this species (Kingery 1998). A total of nine active and inactive black-tailed prairie dog colonies were observed within or partly within the Project area. Additionally, one colony was mapped outside of the Project area. **Table 3-1** details the status and size of each colony delineated during the field survey. The locations of each colony are shown on **Figure 3-1.** Overall, the density and size of the colonies is consistent with typical densities of black-tailed

prairie dogs. All inactive colonies did not show any current activity by black-tailed prairie dogs but may be used intermittently by surrounding active colonies due to their close proximity to one another. A representative photo of an active black-tailed prairie dog colony within the Project area is presented in **Appendix A, Photo 3**.

Therefore, due to the presence of this species within the Project area, impacts to this species are likely to occur as a result of the Project.

4.1.6.6 Swift Fox

In Colorado, the swift fox is classified as a species of concern by CPW. The swift fox inhabits short-grass and mid-grass prairie and may be associated with prairie dog colonies. Dens typically occur on small hills and ridges (Armstrong et al 2011).

This species or its sign (e.g., scat, dens) was not observed during the field survey. However, due to the presence of suitable habitat (i.e., black-tailed prairie dog colonies) within the Project area, impacts to this species may occur as a result of the Project if an active den was built between now and construction of the Project. Otherwise, impacts to the swift fox would be limited to habitat loss and loss of prey base (i.e., black-tailed prairie dogs).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the desktop habitat assessment and field survey of the Project area, DSE concludes the following:

- No crucial big game ranges were found within the Project area.
- No perennial wetlands, waterbodies, or floodplains and associated wildlife habitats were identified within the Project area.
- Suitable habitat for federally listed or federally proposed species does not occur within Project area. Therefore, no impacts are anticipated.
- Suitable habitat for one state-listed species (burrowing owl [threatened]) and several species of concern (bald eagle, ferruginous hawk, black-tailed prairie dog, and swift fox) is present within the Project area. However, impacts may be mitigated through the following measures:
    - Burrowing owl: A total of two active prairie dog colonies were located within the Project area, totaling 3.8 acres.
    - Bald eagle: Due to the distance (approximately 1 mile) of the Project area from the known active bald eagle nest on the west side of Big Johnson Reservoir and lack of nesting habitat within the Project area, no mitigation is recommended at this time.
    - Ferruginous hawk: The stick nest observed adjacent to the Project area's southern boundary (**Figure 3-1**) should be monitored to determine its activity status once the raptor breeding season has begun (February 1 to July 15). Should any nest for raptors become active, the standard nest buffers should be applied (**Appendix C**) in order to reduce impacts to raptor species.
    - Black-tailed prairie dog: DSE recommends avoiding disturbance to active black-tailed prairie dog towns where possible.
    - Swift fox: Prior to ground disturbing activities, a wildlife biologist should survey the Project area for active dens. If found, coordination with the local CPW office should occur to establish appropriate mitigation.
- In order to reduce impacts to migratory birds protected under the Migratory Bird Treaty Act, DSE recommends not disturbing migratory bird habitat (i.e., grassland) between

April 15 and July 31. Alternatively, if construction occurs during migratory bird breeding season, pre-construction surveys for active nests, including raptor nests, should be conducted in order to avoid disrupting migratory birds during the breeding season. A qualified wildlife biologist would survey the Project disturbance areas for nesting migratory birds within 5 days of any ground disturbing activity. To minimize impacts to migratory birds (including some game birds and raptors), active nests would be avoided during construction activities, in coordination with USFWS and CPW. If surveys or other available information indicate a potential for take of migratory birds, their eggs, or active nests, Cygnet Land would suspend activities and contact the USFWS and CPW for further coordination on the extent of the impact on migratory bird populations.

Therefore, results of the desktop habitat assessment and field survey indicate no significant wildlife issues related to this Project, particularly issues that would require consultation with USFWS, ESA permitting, or costly mitigation efforts from CPR Entitlements, LLC.

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APPENDIX A PHOTO LOG

Photo 1 – Center of the Project Area (Looking East)

Photo 2 – Center of the Project Area (Looking West)

Photo 3 – Active Black-tailed Prairie Dog Colony

APPENDIX B RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS

RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS

Western Burrowing Owls (*Athene cunicularia hypugaea*) are commonly found in prairie dog towns throughout Colorado. Burrowing owls require prairie dog or other suitable burrows (e.g. badger) for nesting and roosting. Burrowing owls are migratory, breeding throughout the western United States, southern Canada, and northern Mexico and wintering in the southern United States and throughout Mexico.

Federal and state laws prohibit the harming or killing of burrowing owls and the destruction of active nests. It is quite possible to inadvertently kill burrowing owls during prairie dog poisoning projects, removal of prairie dogs, destruction of burrows and prairie dogs using a concussive device, or during earth moving for construction. Because burrowing owls often hide in burrows when alarmed, it is not practical to haze the birds away from prairie dog towns prior to prairie dog poisoning/removal, burrow destruction, or construction activity. Because of this, the Colorado Division of Wildlife recommends surveying prairie dog towns for burrowing owl presence before potentially harmful activities are initiated.

The following guidelines are intended as advice on how to determine if burrowing owls are present in a prairie dog town, and what to do if burrowing owls are detected. These guidelines do not guarantee that burrowing owls will be detected if they are present. However, adherence to these guidelines will greatly increase the likelihood of detection.

Seasonal Timing

Burrowing owls typically arrive on breeding grounds in Colorado in late March or early April, with nesting beginning a few weeks later. Active nesting and fledging has been recorded and may be expected from late March through early August. Adults and young may remain at prairie dog towns until migrating to wintering grounds in late summer or early autumn.

Surveys should be conducted during times when burrowing owls may be present on prairie dog towns. Surveys should be conducted for any activities occurring between March 15th and October 31st. No burrowing owls are expected to be present between November 1st and March 14th.

Daily Timing

Burrowing owls are active throughout the day; however, peaks in activity in the morning and evening make these the best times for conducting surveys (Conway and Simon 2003). Surveys should be conducted in the early morning (1/2 hour before sunrise until 2 hours after sunrise) and early evening (2 hours before sunset until 1/2 hour after sunset).

Number and locations of survey points

Burrowing owls are most frequently located visually, thus, obtaining a clear view of the entire prairie dog town is necessary. For small prairie dog towns that can be adequately viewed in their entirety from a single location, only one survey point is necessary. The survey point should be selected to provide unobstructed views (with binoculars if necessary) of the entire prairie dog town

(burrow mounds and open areas between) and all nearby structures that may provide perches (e.g., fences, utility poles, etc.)

For prairie dog towns that cannot be entirely viewed from a single location because of terrain or size, enough survey points should be established to provide unobstructed views of the entire prairie dog town and nearby structures that may provide perches. Survey locations should be separated by approximately 800 meters (1/2 mile), or as necessary to provide adequate visual coverage of the entire prairie dog town.

Number of surveys to conduct

Detection of burrowing owls can be highly variable and multiple visits to each site should be conducted to maximize the likelihood of detecting owls if they are present. At least three surveys should be conducted at each survey point. Surveys should be separated by approximately one week.

Conducting the survey

- Weather Considerations Because poor weather conditions may impact the ability to detect burrowing owls, surveys should only be conducted on days with little or no wind and no precipitation.

- Passive surveys Most burrowing owls are detected visually. At each survey location, the observer should *visually* scan the area to detect any owls that are present. Some burrowing owls may be detected by their call, so observers should also *listen* for burrowing owls while conducting the survey.

  Burrowing owls are frequently detected soon after initiating a survey (Conway and Simon 2003). However, some burrowing owls may not be detected immediately because they are inconspicuous, are inside of burrows, or are not present on the site when the survey is initiated. We recommend that surveys be conducted for 10 minutes at each survey location.

- Call-broadcast surveys To increase the likelihood of detecting burrowing owls, if present, we recommend incorporating call-broadcast methods into burrowing owl surveys. Conway and Simon (2003) detected 22% more burrowing owls at point-count locations by broadcasting the primary male (*coo-coo*) and alarm (*quick-quick-quick*) calls during surveys. Although call-broadcast may increase the probability of detecting burrowing owls, most owls will still be detected visually.

  We recommend the following 10-minute timeline for incorporating call-broadcast methods (Conway and Simon 2003, C. Conway pers. commun.). The observer should scan the area for burrowing owls during the entire survey period.

  - 3 minutes of silence
  - 30 seconds call-broadcast of primary call (*coo-coo*)
  - 30 seconds silence
  - 30 seconds call-broadcast of primary call (*coo-coo*)
  - 30 seconds silence
  - 30 seconds call-broadcast of alarm call (*quick-quick-quick*)
  - 30 seconds silence
  - 4 minutes of silence

Calls can be broadcast from a “boom box”, a portable CD or cassette player, or an mp3 player attached to amplified speakers. Calls should be broadcast loudly but without distortion.

Recordings of this survey sequence (compact disc or mp3 sent via email) are available free of charge by contacting:

David Klute
Bird Conservation Coordinator
Colorado Division of Wildlife
6060 Broadway
Denver, CO 80216
Phone: 303-291-7320
Email: David.Klute@state.co.us

Identification

Adult burrowing owls are small, approximately 9-11 inches. They are brown with white spotting and white barring on the chest. They have long legs in comparison to other owls and are frequently seen perching on prairie dog mounds or other suitable perches (e.g., fence posts, utility poles) near prairie dog towns. Juvenile burrowing owls are similar to adults but smaller, with a white/buff colored chest that lacks barring.

General information about burrowing owls is available from the Colorado Division of Wildlife website:
http://wildlife.state.co.us/WildlifeSpecies/Profiles/Birds/BurrowingOwl.htm

Additional identification tips and information are available from the U.S. Geological Survey Patuxent Wildlife Research Center website:
http://www.mbr-pwrc.usgs.gov/id/framlst/i3780id.html

What To Do If Burrowing Owls Are Present

If burrowing owls are confirmed to be present in a prairie dog town, there are two options before proceeding with planned activities:

1. Wait to initiate activities until after November 1st or until it can be confirmed that the owls have left the prairie dog town.
2. Carefully monitor the activities of the owls, noting and marking which burrows they are using. This is not easy to accomplish and will require considerable time, as the owls may use several burrows in a prairie dog town. When all active burrowing owl burrows have been located and marked, activity can proceed in areas greater than 150 feet from the burrows with little danger to the owls. Activity closer than 150 feet may endanger the owls.

Reference

Conway, C. J. and J. C. Simon. 2003. Comparison of detection probability associated with Burrowing Owl survey methods. Journal of Wildlife Management 67:501-511.

revised 02/2008
See also:" Controlling Prairie Dogs: Suggestions For Minimizing Risk To Non-Target Wildlife Species" Colorado Division of Wildlife 03/2007

APPENDIX C RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS

Tolerance limits to disturbance vary among as well as within raptor species. As a general rule, Ferruginous Hawks and Golden Eagles respond to human activities at greater distances than do Ospreys and America Kestrels. Some individuals within a species also habituate and tolerate human activity at a proximity that would cause the majority of the group to abandon their nests. Other individuals become sensitized to repeated encroachment and react at greater distances. The tolerance of a particular pair may change when a mate is replaced with a less tolerant individual and this may cause the pair to react to activities that were previously ignored. Responses will also vary depending upon the reproductive stage. Although the level of stress is the same, the pair may be more secretive during egg laying and incubation and more demonstrative when the chicks hatch.

The term "disturbance" is ambiguous and experts disagree on what actually constitutes a disturbance. Reactions may be as subtle as elevated pulse rate or as obvious as vigorous defense or abandonment. Impacts of disturbance may not be immediately evident. A pair of raptors may respond to human intrusion by defending the nest, but well after the disturbance has passed, the male may remain in the vicinity for protection rather than forage to feed the nestlings. Golden eagles rarely defend their nests, but merely fly a half mile or more away and perch and watch. Chilling and overheating of eggs or chicks and starvation of nestlings can result from human activities that appeared not to have caused an immediate response.

A ‘holistic’ approach is recommended when protecting raptor habitats. While it is important for land managers to focus on protecting nest sites, equal attention should focus on defining important foraging areas that support the pair's nesting effort. Hunting habitats of many raptor species are extensive and may necessitate interagency cooperation to assure the continued nest occupancy. Unfortunately, basic knowledge of habitat use is lacking and may require documentation through telemetry investigations or intensive observation. Telemetry is expensive and may be disruptive so a more practical approach is to assume that current open space is important and should be protected.

Although there are exceptions, the buffer areas and seasonal restrictions suggested here reflect an informed opinion that if implemented, should assure that the majority of individuals within a species will continue to occupy the area. Additional factors, such as intervening terrain, vegetation screens, and the cumulative impacts of activities should be considered.

These guidelines were originally developed by CDOW raptor biologist Gerald R. Craig (retired) in December 2002. To provide additional clarity in guidance, incorporate new information, and update the conservation status of some species, the guidelines were revised in January 2008. Further revisions of this document may become necessary as additional information becomes available.

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS

BALD EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area; see 'Definitions' below) within 1/4 mile radius of active nests (see 'Definitions' below). Seasonal restriction to human encroachment (see 'Definitions' below) within 1/2-mile radius of active nests from October 15 through July 31. This closure is more extensive than the National Bald Eagle Management Guidelines (USFWS 2007) due to the generally open habitat used by Colorado's nesting bald eagles.

Winter Night Roost:

No human encroachment from November 15 through March 15 within 1/4-mile radius of an active winter night roost (see 'Definitions' below) if there is no direct line of sight between the roost and the encroachment activities. No human encroachment from November 15 through March 15 within 1/2 mile radius of an active winter night roost if there is a direct line of sight between the roost and the encroachment activities. If periodic visits (such as oil well maintenance work) are required within the buffer zone after development, activity should be restricted to the period between 1000 and 1400 hours from November 15 to March 15.

Hunting Perch:

Diurnal hunting perches (see 'Definitions' below) associated with important foraging areas should also be protected from human encroachment. Preferred perches may be at varying distances from human encroachment and buffer areas will vary. Consult the Colorado Division of Wildlife for recommendations for specific hunting perches.

GOLDEN EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/4 mile radius of active nests. Seasonal restriction to human encroachment within 1/2 mile radius of active nests from December 15 through July 15.

OSPREY

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/4 mile radius of active nests. Seasonal restriction to human encroachment within 1/4-mile radius of active nests from April 1 through August 31. Some osprey populations have habituated and are tolerant to human activity in the immediate vicinity of their nests.

FERRUGINOUS HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/2 mile radius of active nests. Seasonal restriction to human encroachment within 1/2-mile radius of active nests from February 1 through July 15. This species is especially prone to nest abandonment during incubation if disturbed.

RED-TAILED HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/3 mile radius of active nests. Seasonal restriction to human encroachment within 1/3 mile radius of active nests from February 15 through July 15. Some members of this species have adapted to urbanization and may

tolerate human habitation to within 200 yards of their nest. Development that encroaches on rural sites is likely to cause abandonment.

SWAINSON'S HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/4 mile radius of active nests. Seasonal restriction to human encroachment within 1/4-mile radius of active nests from April 1 through July 15. Some members of this species have adapted to urbanization and may tolerate human habitation to within 100 yards of their nest.

PEREGRINE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/2 mile radius of active nests. Seasonal restriction to human encroachment within 1/2 mile of the nest cliff(s) from March 15 to July 31. Due to propensity to relocate nest sites, sometimes up to 1/2 mile along cliff faces, it is more appropriate to designate 'Nesting Areas' that encompass the cliff system and a 1/2 mile buffer around the cliff complex.

PRAIRIE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/2 mile radius of active nests. Seasonal restriction to human encroachment within 1/2 mile radius of active nests from March 15 through July 15.

NORTHERN GOSHAWK

No surface occupancy (beyond that which historically occurred in the area) within 1/2 mile radius of active nests. Seasonal restriction to human encroachment within 1/2-mile radius of active nests from March 1 through September 15.

BURROWING OWL

Nest Site:

No human encroachment within 150 feet of the nest site from March 15 through October 31. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting Burrowing Owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied. More detailed recommendations are available in a document entitled “Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls” which is available from the Colorado Division of Wildlife

Recommended Buffer Zones and Seasonal Restrictions Around Raptor Use Sites

Species and Use	Buffer	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bald Eagle													
ACTIVE NEST - No Surface Occupancy	1/4 Mile												
ACTIVE NEST - No Human Encroachment	1/2 Mile												
ACTIVE WINTER NIGHT ROOST without a direct line of sight- No Human Encroachment	1/4 Mile												
ACTIVE WINTER NIGHT ROOST with a direct line of sight - No Human Encroachment	1/2 Mile												
HUNTING PERCH - No Human Encroachment	Contact CDOW												
Golden Eagle													
ACTIVE NEST - No Surface Occupancy	1/4 Mile												
ACTIVE NEST - No Human Encroachment	1/2 Mile												
Osprey													
ACTIVE NEST - No Surface Occupancy	1/4 Mile												
ACTIVE NEST - No Human Encroachment	1/4 Mile												
Ferruginous Hawk													
ACTIVE NEST - No Surface Occupancy	1/2 Mile												
ACTIVE NEST - No Human Encroachment	1/2 Mile												
Red-tailed Hawk													
ACTIVE NEST - No Surface Occupancy	1/3 Mile												
ACTIVE NEST - No Human Encroachment	1/3 Mile												
Swanson's Hawk													
ACTIVE NEST - No Surface Occupancy	1/4 Mile												
ACTIVE NEST - No Human Encroachment	1/4 Mile												
Peregrine Falcon													
ACTIVE NEST - No Surface Occupancy	1/2 Mile												
ACTIVE NEST - No Human Encroachment	1/2 Mile												
Prairie Falcon													
ACTIVE NEST - No Surface Occupancy	1/2 Mile												
ACTIVE NEST - No Human Encroachment	1/2 Mile												
Northern Goshawk													
ACTIVE NEST - No Surface Occupancy	1/2 Mile												
ACTIVE NEST - No Human Encroachment	1/2 Mile												
Burrowing Owl													
ACTIVE NEST - No Human Encroachment	150 feet												
		= time period for which seasonal restrictions are in place.											

DEFINITIONS

Active nest – Any nest that is frequented or occupied by a raptor during the breeding season, or which has been active in any of the five previous breeding seasons. Many raptors use alternate nests in various years. Thus, a nest may be active even if it is not occupied in a given year.

Active winter night roost – Areas where Bald Eagles gather and perch overnight, and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Human encroachment – Any activity that brings humans in the area. Examples include driving, facilities maintenance, boating, trail access (e.g., hiking, biking), etc.

Hunting perch – Any structure on which a raptor perches for the purpose of hunting for prey. Hunting perches provide a view of suitable foraging habitat. Trees are often used as hunting perches, but other structures may also be used (utility poles, buildings, etc.).

Surface occupancy – Any physical object that is intended to remain on the landscape permanently or for a significant amount of time. Examples include houses, oil and gas wells, tanks, wind turbines, roads, tracks, etc.

CONTACT

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Wildlife Impact Assessment

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March 15, 2017

Sign-off Sheet

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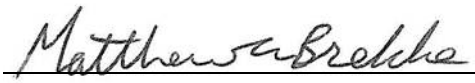
Prepared by 
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Matt Brekke, Senior Wildlife Biologist, Author

Reviewed by 
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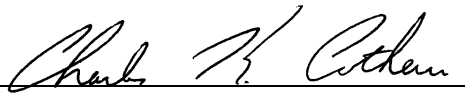
Charles Johnson, Principal, Independent Reviewer

Approved by 
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Charles Cothern, Senior Project Manager, Senior Review

Acronym List

CPW	Colorado Parks and Wildlife
Cygnet Land	Cygnet Land, LLC
ESA	Endangered Species Act
GPS	Global Positioning System
Project	Waterview East Development Project
Stantec	Stantec Consulting Services Inc.
T&E	threatened and endangered
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

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Appendices

1.0 INTRODUCTION

The Waterview East Development Project (Project) consists of 174.4 acres of approximately 785 single family residential lots and 21.2 acres of commercial development.

Stantec Consulting Services Inc. (Stantec), as required by Cygnet Land, LLC (Cygnet Land) per the Land Use Development Code of El Paso County, Colorado (El Paso County 2015), performed a wildlife impact assessment of the immediate Waterview East development area (Project area) located southeast of Colorado Springs, Colorado (Section 9, Township 15 South , Range 65 West) (**Figure 1-1**). The wildlife impact assessment also included a 0.5-mile-radius buffer surrounding the Project area (i.e., wildlife study area) to capture wildlife species that have protection buffers or seasonal timing restrictions associated with them (e.g., raptors) (**Figure 1-2**). General wildlife (big game, small game, nongame, aquatic resources) and special status species (federally listed species, state-listed species, and species of concern) were included in the wildlife impact assessment.

This report presents the methodology, results, impact assessment, and conclusions and recommendations of the wildlife impact assessment.

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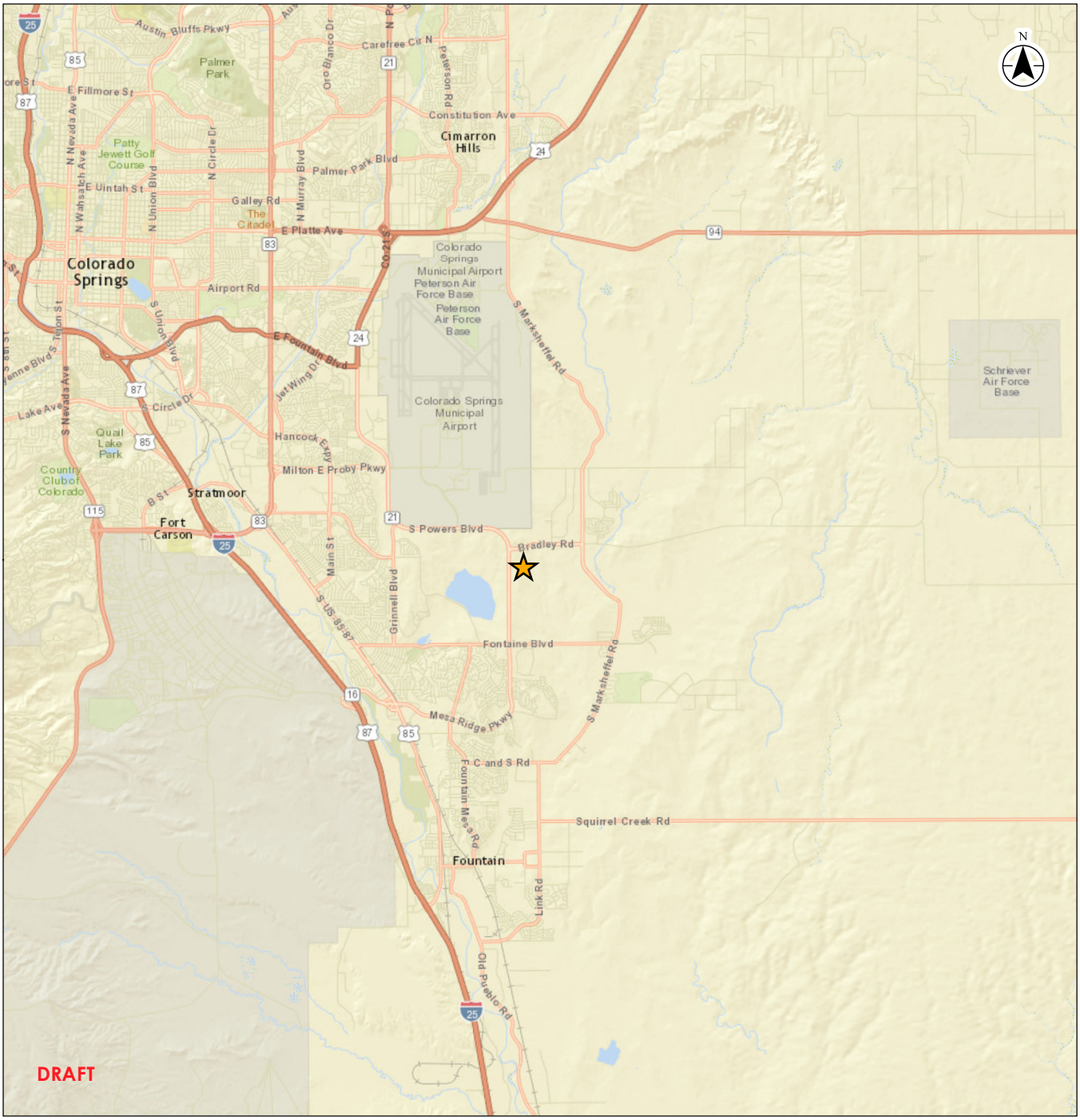

Legend

★ Project Site

0 2 4 Miles

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Stantec

Project Location	181710214 REVA
T15S, R65W, S09	Prepared by BST on 2017-01-11
T. of Fountain,	Technical Review by ABC on 2015-07-01
El Paso Co., CO	Independent Review by ABC on 2015-07-01

Client/Project

Cygnet Land, LLC/
Waterview East

Figure No.

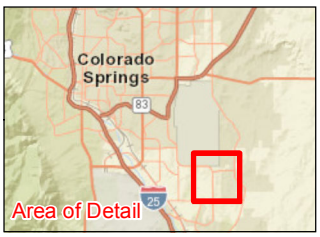
1-1

Title

Project Site Location

Notes

1. Coordinate System: NAD 1983 UTM Zone 13N



Legend

Project Site Boundary

Wildlife Study Area (0.5-mile-radius buffer of Project Site)

0 0.25 0.5 Miles

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Stantec

Notes
1. Coordinate System: NAD 1983 UTM Zone 13N

Project Location
T15S, R65W, S09
T. of Fountain,
El Paso Co., CO

181710214 REVA
Prepared by BST on 2017-01-11
Technical Review by ABC on 2015-07-01
Independent Review by ABC on 2015-07-01

Client/Project
Cygnet Land, LLC/
Waterview East

Figure No.
1-2

Title
Wildlife Study Area

2.0 METHODS

2.1 DESKTOP HABITAT ASSESSMENT

The desktop habitat assessment utilized publicly available information sources such as aerial imagery; topographical maps; biological resource, soils, wetland, and land cover databases; published reports; search engines hosted by federal agencies or regulator-endorsed or accepted institutions and organizations; and applicable legislation and guidelines. This information was consolidated to describe the potential for occurrence of wildlife and special status species and their habitat in the wildlife study area.

For general wildlife, Colorado Parks and Wildlife (CPW) data (CPW 2017a), in-house Stantec wildlife data, and Colorado-specific wildlife literature was reviewed. This data included, but was not limited to, big game ranges, raptor nests, black-tailed prairie dog (*Cynomys ludovicianus*) colonies, and Colorado breeding bird atlas and Christmas bird count data.

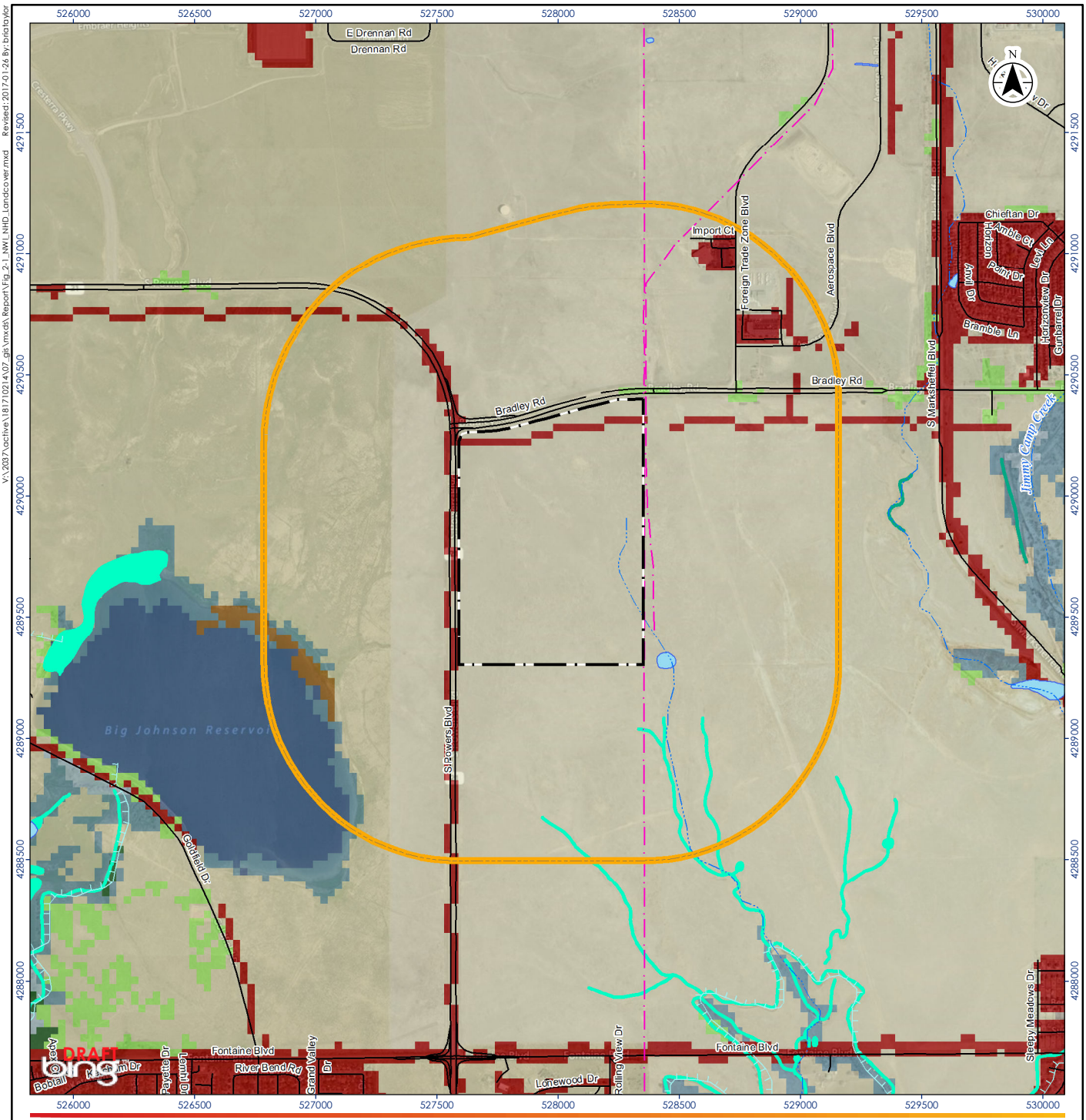
For the special status species habitat assessment, a list of federally threatened or endangered (T&E) species whose ranges include El Paso County, Colorado, was obtained from the United States (U.S.) Fish and Wildlife Service (USFWS) Endangered Species website (USFWS 2017a). In addition, Stantec reviewed CPW data for site-specific information related to state-listed T&E species and species of concern (CPW 2017b).

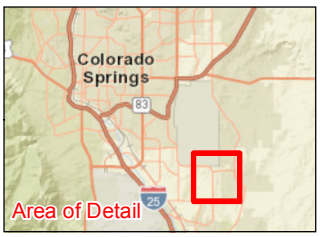
For both general wildlife and special status species, the desktop assessment included the identification of grassland, stands of trees, water features, and other natural vegetation communities present within the wildlife study area (**Figure 2-1**).

2.2 FIELD SURVEY

A ground-based wildlife field survey was conducted by a Stantec wildlife biologist on January 19, 2017. The field survey consisted of a pedestrian survey in the Project area (**Figure 2-1**). While portions of the wildlife study area were surveyed via use of binoculars and by driving on public roads, the entire wildlife study area was not surveyed due to lack of access. All wildlife observations were recorded, specifically active and inactive prairie dog colonies and raptor stick nests. Data was recorded using a handheld Garmin Global Positioning System (GPS) unit. Black-tailed prairie dog colonies were delineated by walking the perimeter of the colony. A colony was determined to be active if black-tailed prairie dogs were observed or fresh sign (e.g., scat, recent tracks, digging) was present.

For raptor nesting habitat as well as actual nests, the location of suitable habitat as well as nests observed were recorded using a Garmin GPS unit. The Stantec wildlife biologist also recorded location data for other raptor observations made during the field survey.





Notes
1. Coordinate System: NAD 1983 UTM Zone 13N

Legend

- Project Site Boundary
- Wildlife Study Area (0.5-mile-radius buffer of Project Site)
- Transmission Line
- Road

NHD
- Canal/Ditch
- Intermittent Stream

NWI
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

2011 National Land Cover Dataset
- Barren Land
- Cultivated Crops
- Developed
- Emergent Herbaceuous Wetlands
- Evergreen Forest
- Herbaceuous
- Open Water
- Shrub/Scrub
- Woody Wetlands

0 0.25 0.5 Miles

1:24,000 (at original document size of 8.5x11)

Stantec

Project Location
T15S, R65W, S09
T. of Fountain,
El Paso Co., CO

181710214 REVA
Prepared by BST on 2017-01-11
Technical Review by NL on 2017-01-26
Independent Review by MB on 2017-01-26

Client/Project
Cygnet Land, LLC/
Waterview East

Figure No.
2-1

Title
Land Use and Land Cover

3.0 RESULTS

3.1 DESKTOP HABITAT ASSESSMENT

Wildlife habitat within and immediately adjacent to the wildlife study area is primarily grassland (**Figure 2-1; Appendix A, Photos 1** and **2**), although a portion of Big Johnson Reservoir is within the far western portion of the wildlife study area. In addition, patches of developed land are located along South Powers Boulevard and Bradley Road. Three individual trees are present within the western boundary of the Project area. No wetland or waterbodies are present within the Project area but several intermittent streams (with freshwater emergence wetlands according to National Wetland Inventory data) flow southeast out of the wildlife study area towards Fontaine Boulevard (**Figure 2-1**).

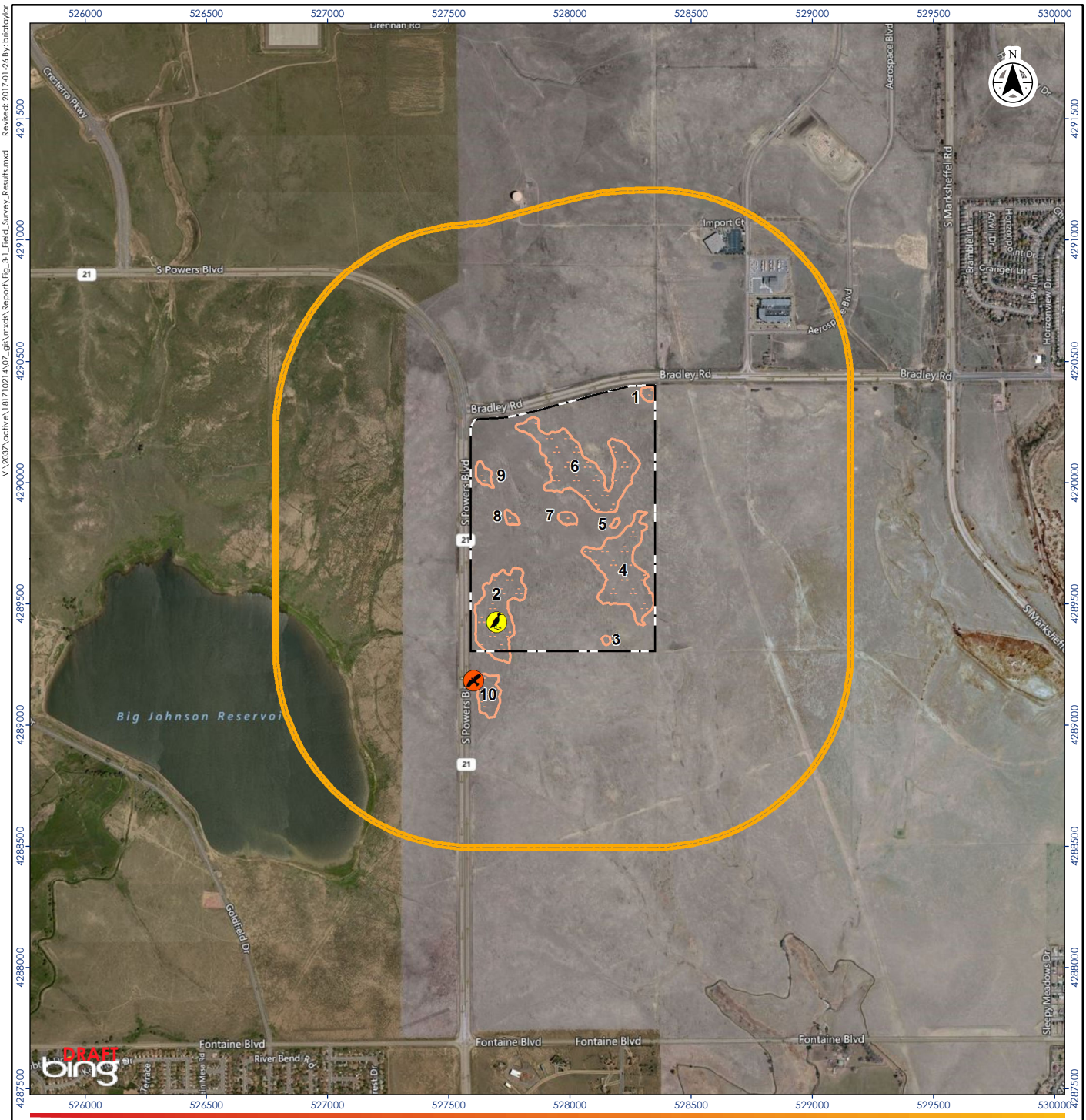
No crucial ranges for big game (e.g., mule deer [*Odocoileus hemionus*], white-tailed deer [*Odocoileus virginianus*], and pronghorn [*Antilocapra americana*]) occur within the wildlife study area. The wildlife study area is classified by CPW as overall range for mule deer, white-tailed deer (only eastern portion), pronghorn, black bear (*Ursus americanus*) (only southern portion), and swift fox (*Vulpes velox*) as well as winter range for the bald eagle *(Haliaeetus leucocephalus*). According to communication with CPW, there is an active bald eagle nest on the western side of Big Johnson Reservoir, approximately 0.5 mile west of the wildlife study area and approximately 1 mile west of the Project area (CPW 2017c).

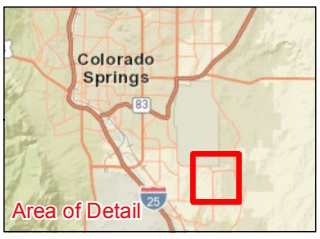
3.2 FIELD SURVEY

While the field survey encompassed all wildlife species that may be present within the Project area, special attention was paid to black-tailed prairie dog colonies and raptor nesting and foraging habitat nests due to their suspected use of the Project area and implications towards potential Project mitigation.

3.2.1 Black-tailed Prairie Dog Colonies

A total of nine active and inactive black-tailed prairie dog colonies were observed within or partly within the Project area. Additionally, one colony was mapped outside of the Project area. The locations of each colony are shown on **Figure 3-1. Table 3-1** details the status and size of each colony delineated during the field survey. All inactive colonies did not show any current activity by black-tailed prairie dogs but may be used intermittently by surrounding active colonies due to their close proximity to one another. Photos of the black-tailed prairie dog colonies are presented in **Appendix A, Photo 3**.





Legend

- Possible Burrowing Owl Burrow
- Inactive Raptor Nest, Unknown Species
- Black-tailed Prairie Dog Colony
- Project Site Boundary
- Wildlife Study Area (0.5-mile-radius buffer of Project Site)

0 0.25 0.5 Miles

1:24,000 (at original document size of 8.5x11)

Stantec

Project Location	181710214 REVA
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Client/Project
Cygnet Land, LLC/
Waterview East

Figure No.
3-1

Title
Field Survey Results

Notes
1. Coordinate System: NAD 1983 UTM Zone 13N

Table 3-1 Black-tailed Prairie Dog Colonies

Identification Number	Size (acres)	Status
1	0.7	Inactive
2	12.4	Active
3	0.3	Inactive
4	14.9	Active
5	0.2	Inactive
6	19.6	Active
7	0.9	Inactive
8	0.6	Inactive
9	1.2	Inactive
10	3.4	Active

3.3 RAPTOR NESTS

One stick nest was documented immediately south of the Project area along South Powers Boulevard (**Figure 3-1**). This nest was approximately 2 feet wide by 2 feet long, appeared to be inactive, and was in fair condition (**Appendix A, Photos 6** and **7**). The nest was located approximately 25 feet above the ground in a fork of a 30-foot-tall cottonwood tree. No identification of the species responsible for the nest was made during the field survey. In general, there is little vertical nest substrate within the Project area. Vertical nest substrate is limited to three cottonwood trees along the western boundary and a series of transmission line structures along the eastern boundary of the Project area (**Appendix A, Photo 1**). During the field survey, a golden eagle (*Aquila chrysaetos*) was observed perched on one of these transmission line structures in the eastern portion of the Project area.

In addition to the stick nest, one potential burrowing owl (*Athene cunicularia*) burrow was located in black-tailed prairie dog colony number 2 (**Figure 3-1**). The mound of this burrow had several instances of old whitewash and one weathered pellet was found near the entrance (**Appendix A, Photos 4 and 5**). While not an active burrow at the time of the survey, this burrow likely was active during the burrowing owl breeding season (March 15 to October 31) in 2016.

3.4 OTHER WILDLIFE

Other wildlife observed within the Project area during the January 19, 2017, field survey is presented in **Table 3-2.**

Table 3-2 Wildlife Observed during the Field Survey

Common Name	Scientific Name
Mammals	
Black-tailed prairie dog	*Cynomys ludocivianus*
Desert cottontail	*Sylvilagus audubonii*
Mule deer	*Odocoileus hemionus*
Pronghorn	*Antilocapra americana*
Coyote	*Canis latrans*
Birds	
Golden eagle	*Aquila chrysaetos*
Red-tailed hawk	*Buteo jamaicensis*
Northern harrier	*Circus cyaneus*
Horned lark	*Eremophila alpestris*

4.0 IMPACT ASSESSMENT

4.1 GENERAL WILDLIFE

4.1.1 Big Game

4.1.1.1 Baseline Conditions

Big game species potentially occurring within the Project area include pronghorn, white-tailed deer, and mule deer (Armstrong et al. 2011). Pronghorn inhabit grasslands and shrublands with flat to rolling topography and browse on forbs and shrubs throughout the year. White-tailed deer and mule deer occur in virtually all habitat types along the Front Range and eastern plains of Colorado, but reach their greatest densities in cultivated cropland, river bottoms, and shrublands on rough, broken terrain, which provide abundant browse and cover (Armstrong et al. 2011).

4.1.1.2 Impacts

Impacts to big game species (e.g., mule deer, white-tailed deer, and pronghorn) include the permanent loss of approximately 195.6 acres of potential forage and cover (native vegetation and previously disturbed vegetation) and an increase in habitat fragmentation within the Project surface disturbance area. However, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas south and east of the Project area) would be available for big game species. Therefore, while habitat impacts to big game species are expected to occur, long-term impacts to big game populations in the Project region are not expected to occur.

4.1.2 Small Game

4.1.2.1 Baseline Conditions

Upland game birds known or likely to occur within the Project area include mourning doves (*Zenaida macroura*) and scaled quail (*Callipepla squamata*) (Kingery 1998). Mourning doves are common throughout the Project region, especially in areas with scattered trees and water. Scaled quail typically are found in grasslands and shrublands (Kingery 1998). Due to the lack of perennial water sources and cultivated cropland (i.e., corn or wheat), no waterfowl occur within the Project area. Small game mammals likely to occur within the Project area include desert cottontail and black-tailed jackrabbit (*Lepus californicus*). Both of these species are common in grassland and shrubland habitats along the Front Range and eastern plains of Colorado (Armstrong et al. 2011).

4.1.2.2 Impacts

Direct impacts to small game species (e.g., mourning dove, scaled quail, and desert cottontail) would include the incremental permanent reduction of approximately 195.6 acres of suitable habitat. Impacts also would include displacement from the disturbance areas and increased habitat fragmentation. In most instances, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas south and east of the Project area) would be available for use by these species. However, displacement would increase competition and could include some local reductions in wildlife populations if adjacent habitats are at carrying capacity. Potential impacts also could include nest and burrow abandonment or loss of eggs or young. However, while potential impacts to small game from Project development are expected to occur, these losses would only reduce productivity for that breeding season.

4.1.3 Nongame

4.1.3.1 Baseline

Nongame species potentially occurring within the Project area encompass a large diversity of animal taxa. Important nongame species primarily include a number of mammals, raptors, songbirds, amphibians, and reptiles.

Mammal species that potentially occur within the Project area include, but are not limited to, little brown myotis (*Myotis lucifugus*), western small-footed myotis (*Myotis subulatus*),fringed myotis (*Myotis thysanodes*), yuma myotis (*Myotis yumanensis*), hoary bat (*Lasiurus cinereus*), desert cottontail, black tailed jackrabbit, thirteen-lined ground squirrel (*Citellus tridecemlineatus*), plains pocket gopher (*Geomys bursarius*), coyote, red fox (*Vulpes fulva*), and badger (*Taxidea taxus*) (Armstrong et al. 2011).

Migratory Birds including Raptors

Raptor species that may occupy habitats within the Project area are those associated with grasslands and shrublands. These species include, but may not be limited to, bald eagle (*Haliaeetus leucocephalus),* golden eagle, red-tailed hawk*,* ferruginous hawk (*Buteo fregalis*), Swainson's hawk (*Buteo swainsoni*), American kestrel (*Falco sparverius),* Prairie falcon (*Falco mexicanus*), burrowing owl, great horned owl (*Bubo virginianus)*, long-eared owl (*Asio otus*), northern harrier, and the turkey vulture (*Carthartes aura*) (Kingery 1998).

Passerine species known or likely to occur within the Project area include the common raven (*Corvus corax*), American crow (*Corvus brachyrhynchos*), western kingbird (*Tyrannus verticalis*), lark bunting (*Calamospiza melanocorys*), horned lark, western meadowlark (*Sturnella neglecta*), and various species of sparrows (Kingery 1998; Peterson 1990).

Amphibians and Reptiles

Amphibian and reptile species that may occur within the Project area are typical of the Front Range and eastern plains of Colorado (Hammerson 1999). These species include, but are not

limited to, woodhouse's toad (*Bufo woodhousii*), plains spadefoot toad (*Spea bombifrons*), collared lizard (*Crotaphytus collaris*), prairie/plateau lizard (*Sceloporus undulatus*), short-horned lizard (*Phrynosoma hernandesi*), and western rattlesnake (*Crotalus viridis*) (Hammerson 1999).

4.1.3.2 Impacts

Impacts to nongame species would be the same as those discussed above for small game species. Direct impacts to nongame species (e.g., small mammals, raptors, passerines, and reptiles) would include the incremental permanent reduction of approximately 195.6 acres of suitable habitat. Impacts also would include displacement from the disturbance areas and increased habitat fragmentation. In most instances, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas south and east of the Project area) would be available for use by these species. However, displacement would increase competition and could include some local reductions in wildlife populations if adjacent habitats are at carrying capacity. Potential impacts also could include nest and burrow abandonment or loss of eggs or young. However, while potential impacts to nongame species from Project development are expected to occur, these losses would only reduce productivity for that breeding season.

Migratory Birds including Raptors

A variety of resident and migratory passerine species (e.g., horned lark, lark bunting, western kingbird, common raven) and raptor species (e.g., eagles, hawks, falcons, owls) have been identified as potentially occurring within the Project area. Potential direct impacts to passerine and raptor species would include the temporary loss of approximately 195.6 acres of suitable breeding, roosting, and foraging habitat. However, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas south and east of the Project area) would be available for these species. Therefore, while habitat impacts to migratory birds including raptors are expected to occur, long-term impacts to populations in the Project area are not expected to occur.

Amphibians and Reptiles

Similar to the other nongame species discussed above, impacts to amphibians and reptiles as a result of the Project would include mortalities or displacement related to Project construction and habitat loss, alteration, and fragmentation. Construction activities may result in direct mortalities as a result of crushing of burrows from vehicles and equipment. In most instances, suitable habitat adjacent to Project disturbance areas (e.g., Bluestem Prairie Open Space and areas south and east of the Project area) would be available for use by these species. However, displacement would increase competition and could include some local reductions in wildlife populations if adjacent habitats are at carrying capacity. Potential impacts also could include burrow abandonment or loss of eggs or young. However, while potential impacts to nongame species from Project development are expected to occur, these losses would only reduce productivity for that breeding season.

4.1.4 Aquatic Resources

No perennial water sources occur within the Project area; therefore, no impacts to aquatic resources would occur as a result of the Project. A portion of Big Johnson Reservoir, which likely contains fish and other aquatic species, occurs within the wildlife study area but would not be directly impacted by the Project.

4.1.5 Federally-Listed Species

The USFWS county list for El Paso County, Colorado, indicates eight federally listed wildlife species and one federally proposed wildlife species whose habitat may occur within the county. Therefore, these species may be impacted by development activities associated with the Project. These species include:

- North American wolverine (*Gulo gulo luscus*) – Proposed Threatened
- Preble's meadow jumping mouse (*Zapus hudsonius preblei*) – Threatened
- Whooping crane (*Grus americana*) – Endangered
- Interior least tern (*Sterna antillarum)* – Endangered
- Piping plover (*Chardrius melodus)* – Threatened
- Mexican spotted owl (Strix occidentalis lucida) – Threatened
- Greenback cutthroat trout (Oncorhynchus clarki stomias) – Threatened
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered
- Pawnee montane skipper (*Hesperia leonardus montana*) – Threatened

No USFWS-designated critical habitat occurs within the Project area.

4.1.5.1 North American Wolverine

The wolverine was listed as a federally proposed species (threatened) on October 18, 2016. This species occurs in remote wilderness areas that contain a high percentage of non-vegetative elements, such as rocks, talus slopes, avalanche chutes, caves, and rock crevices (U.S. Forest Service 2010). Very few occurrence records for this species exist for Colorado and the species is not known to currently occur in Colorado (Armstrong et al. 2011).

Due to the lack of known occurrences in Colorado and lack of suitable habitat within the Project area, impacts to this species would not occur as a result of the Project.

4.1.5.2 Preble's Meadow Jumping Mouse

The Preble's meadow jumping mouse is listed as a federal threatened species on May 13, 1998. This subspecies of jumping mouse occurs in habitats consisting of well-developed plains riparian vegetation with dense herbaceous vegetation that include of a variety of grasses, forbs, and

thick shrubs in close proximity to water. Suitable habitat can occur along stream channels, vegetated irrigation canals, ditches, and riparian and wetland areas (including native wet meadows) (Armstrong et al. 2011).

Suitable habitat for the Preble's meadow jumping mouse is not present within the Project area. Therefore, impacts to this species are unlikely to occur as a result of the Project.

4.1.5.3 Whooping Crane

The whooping crane was listed as endangered under the Endangered Species Preservation Act on March 11, 1967. Congress passed the Endangered Species Act (ESA) in 1973 and the species remained listed as endangered with critical habitat designated in 1978. The Project area is located outside of the known migration corridor for this species (USFWS 2009) and no suitable habitat (i.e., large wetlands adjacent to agricultural fields) is present within the Project area. Therefore, impacts would not occur as a result of the Project.

4.1.5.4 Interior Least Tern

The interior least tern was listed as endangered under the ESA by the USFWS on May 28, 1985. This species requires open expanses of sand or pebble beaches along river banks or reservoirs for nesting. In Colorado, the least tern is a local uncommon summer resident on southeastern plains rivers and reservoirs in the Arkansas River Valley, casual non-breeding summer visitor on the northeastern plains rivers and reservoirs, and a casual visitor to very rare spring and fall migrant on the northeastern plains rivers and reservoirs (Kingery 1998). Foraging habitat typically is located near these same river or reservoir habitats.

Suitable habitat for the interior least tern is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.5 Piping Plover

The Great Plains population of piping plovers was listed as threatened under the ESA by the USFWS on December 11, 1985. Similar to the interior least tern, this species requires open expanses of sand or pebble beaches along river banks or reservoirs for nesting. Foraging habitat typically is located in the immediate vicinity of nesting habitat. In Colorado, they are a very rare spring and fall migrant on eastern plains rivers and reservoirs (Kingery 1998).

Suitable habitat for the piping plover is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.6 Mexican Spotted Owl

The Mexican spotted owl was federally listed as threatened by the USFWS on April 15, 1993. Critical habitat for the species was designated August 31, 2004. In Colorado, breeding habitat of this species consists of deep sheer-walled, sandstone or rocky canyons from approximately 6,000

to 9,400 feet (Reynolds and Johnson 1996; Johnson 1997). These canyons contain either ponderosa pine and mixed-conifer forests or piñon-juniper forests with small, isolated patches of Douglas-fir (Reynolds and Johnson 1994; Johnson 1997). Although some birds may inhabit the same territory year-round, most owls migrate to lower elevations during the winter (October to March) (USFWS 1995). In Colorado, winter habitat for the species typically consists of low elevation, relatively open pinon-juniper forests (Kingery 1998; Johnson 1997).

Suitable habitat for the Mexican spotted owl is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.7 Greenback Cutthroat Trout

The greenback cutthroat trout was listed as endangered under the Endangered Species Preservation Act on March 11, 1967. Congress passed the ESA in 1973 and the species was reclassified as threatened in 1978. This species inhabits cold, clear, oxygenated streams of moderate gradient. Overhanging branches, undercut banks, and eddies behind rubble providing feeding and resting stations are required habitat (USFWS 2017b). This species is found in only a handful of headwater streams in the Arkansas River and South Platte River drainages (USWS 2017b).

Due to the lack of perennial water sources within the Project area, suitable habitat for the Greenback cutthroat trout is not present within the Project area. Therefore, impacts to this species would not occur as a result of the Project.

4.1.5.8 Pallid Sturgeon

The pallid sturgeon was listed as endangered under the ESA by the USFWS on September 6, 1990. This species inhabits large, braided, muddy rivers such as the Missouri and Mississippi river systems in the central U.S. It requires backwaters created by spring floods for spawning.

This species is not known to occur in Colorado; however, the USFWS has determined that water depletions within the South Platte River Basin in Colorado may impact this species and its downstream habitat. However, due to the Project not occurring within the South Platte River Basin, impacts to the pallid sturgeon would not occur.

4.1.5.9 Pawnee Montane Skipper

The Pawnee montane skipper was listed as federally threatened on September 25, 1987. This species occurs in dry, open, ponderosa pine woodlands on moderately steep slopes with soils derived from Pikes Peak granite. Blue grama grass, the larval food plant, and prairie gayfeather, the primary nectar plant, are two necessary components of the groundcover strata (USFWS 2017c). The subspecies occurs only in the South Platte Canyon River drainage system in Colorado, in portions of Jefferson, Douglas, Teller, and Park counties (USFWS 2017c).

Therefore, due to the Project not occurring within the South Platte River Basin and lack of suitable habitat within the Project area, impacts to the Pawnee montane skipper would not occur.

4.1.6 State-Listed Species and Species of Concern

The desktop habitat assessment and field survey results indicate the Project area consists of predominately grassland with some areas of developed land. Therefore, the following species from Colorado's Threatened and Endangered List (CPW 2017b) may occur within the wildlife study area:

- Bald Eagle – Species of Concern
- Burrowing Owl – State Threatened
- Ferruginous Hawk – Species of Concern
- Mountain Plover (*Charadrius montanus*) – Species of Concern
- Black-tailed Prairie Dog – Species of Concern
- Swift Fox (Vulpes velox) – Species of Concern

4.1.6.1 Bald Eagle

In Colorado, the bald eagle is classified as a species of concern by CPW and is protected under the Golden and Bald Eagle Protection Act. This species typically occurs near large bodies of water that support suitable roosting and foraging habitat. Nests are commonly built in mature cottonwoods or conifers along lakes or other large bodies of water (Johnsgard 1990; Kingery 1998). The Project area is within designated winter range for the bald eagle (CPW 2017a). According to communication with CPW, there is an active bald eagle nest near Big Johnson Reservoir, approximately 0.5 mile west of the wildlife study area and approximately 1 mile west of the Project area (CPW 2017c).

However, due to the distance of the active nest site from the Project area and the level of existing human activity in the immediate Project vicinity (relatively high traffic use on Powers Boulevard and Bradley Road), this species is likely habituated to human activity and impacts would be considered low.

4.1.6.2 Burrowing Owl

The burrowing owl is state-listed as threatened in Colorado. This species inhabits burrows in open, dry, treeless areas on plains, prairies, and desert floors. Level to gentle slopes, short vegetation, and high percentages of bare ground are key indicators of quality habitat. Burrowing owls usually select sites recently occupied by burrowing animals such as prairie dogs, ground squirrels, and badgers (Kingery 1998). During the field survey, one potential burrowing owl burrow was located in black-tailed prairie dog colony 2 (**Figure 3-1; Appendix A, Photo 4**). The mound of this burrow had several instances of old whitewash and one weathered pellet was found near the

entrance (**Appendix A, Photo 5**). While not an active burrow at the time of the survey, this burrow likely was active during the burrowing owl breeding season (generally April to September) in 2016.

Therefore, due to the presence of likely historic nesting burrows and the presence of suitable habitat (i.e., black-tailed prairie dog colonies) within the Project area, impacts to this species may occur as a result of the Project if ground disturbing activities take place during the species breeding season (April 1 to September 15).

4.1.6.3 Ferruginous Hawk

In Colorado, the ferruginous hawk is classified as a species of concern by CPW. This species occurs in open semi-arid habitats including basin-prairie shrubland, mountain-foothills, and badlands. Nest sites include short trees, ledges, and rock outcrops in sagebrush valleys and rolling grassland habitat (Johnsgard 1990; Kingery 1998).

No evidence of ferruginous hawks inhabiting the wildlife study area was found during the field survey. However, based on the presence of relatively large black-tailed prairie dog colonies within the Project area and immediate vicinity and three cottonwood trees along the western boundary of the Project area, it is likely that ferruginous hawks would use the Project area for foraging and possible nesting. Impacts to this species as a result of the Project may occur if ground disturbing activities take place during the breeding season (February 1 to July 15).

4.1.6.4 Mountain Plover

In Colorado, the mountain plover is classified as a species of concern by CPW. This species inhabits flat, short-grass prairie in areas recently burned, overgrazed by livestock, or occupied by prairie dog colonies (Kingery 1998).

Due to the time of year of the field survey, detection of individual mountain plovers was not possible as the species does not reside in Colorado during the winter months. In addition, much of the Project area is grassland that is too tall for mountain plovers, making the Project area unsuitable habitat for the species. Therefore, impacts to this species would not occur as a result of the Project.

4.1.6.5 Black-tailed Prairie Dog

In Colorado, the black-tailed prairie dog is classified as a species of concern by CPW. This species inhabits short-grass and mixed-grass prairies throughout the Great Plains and west-central U.S. Areas with sparse vegetation and suitable soils for burrowing are most commonly used by this species (Kingery 1998). A total of nine active and inactive black-tailed prairie dog colonies were observed within or partly within the Project area. Additionally, one colony was mapped outside of the Project area. **Table 3-1** details the status and size of each colony delineated during the field survey. The locations of each colony are shown on **Figure 3-1.** Overall, the density and size of the colonies is consistent with typical densities of black-tailed

prairie dogs. All inactive colonies did not show any current activity by black-tailed prairie dogs but may be used intermittently by surrounding active colonies due to their close proximity to one another. A representative photo of an active black-tailed prairie dog colony within the Project area is presented in **Appendix A, Photo 3**.

Therefore, due to the presence of this species within the Project area, impacts to this species are likely to occur as a result of the Project.

4.1.6.6 Swift Fox

In Colorado, the swift fox is classified as a species of concern by CPW. The swift fox inhabits short-grass and mid-grass prairie and may be associated with prairie dog colonies. Dens typically occur on small hills and ridges (Armstrong et al 2011).

This species or its sign (e.g., scat, dens) was not observed during the field survey. However, due to the presence of suitable habitat (i.e., black-tailed prairie dog colonies) within the Project area, impacts to this species may occur as a result of the Project if an active den was built between now and construction of the Project. Otherwise, impacts to the swift fox would be limited to habitat loss and loss of prey base (i.e., black-tailed prairie dogs).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the desktop habitat assessment and field survey of the Project area, Stantec concludes the following:

- No crucial big game ranges were found within the Project area.
- No perennial wetlands, waterbodies, or floodplains and associated wildlife habitats were identified within the Project area.
- Suitable habitat for federally listed or federally proposed species does not occur within Project area. Therefore, no impacts are anticipated.
- Suitable habitat for one state-listed species (burrowing owl [threatened]) and several species of concern (bald eagle, ferruginous hawk, black-tailed prairie dog, and swift fox) is present within the Project area. However, impacts may be mitigated through the following measures:
    - Burrowing owl: A total of three active prairie dog colonies were located within the Project area, totaling 46.9 acres. At least one of these colonies contained a burrow that previously was used by a burrowing owl (likely during the breeding season in 2016). Therefore, Stantec recommends conducting a focused, burrowing owl survey following CPW protocols (**Appendix B**) prior to ground disturbing activities if the Project is to be constructed during the burrowing owl breeding season (March 15 to October 31). Should any burrow for burrowing owls become active, the standard nest buffers should be applied (**Appendix C**) in order to reduce impacts to the species.
    - Bald eagle: Due to the distance (approximately 1 mile) of the Project area from the known active bald eagle nest on the west side of Big Johnson Reservoir and lack of nesting habitat within the Project area, no mitigation is recommended at this time.
    - Ferruginous hawk: The stick nest observed adjacent to the Project area's southern boundary (**Figure 3-1**) should be monitored to determine its activity status once the raptor breeding season has begun (February 1 to July 15). Should any nest for raptors become active, the standard nest buffers should be applied (**Appendix C**) in order to reduce impacts to raptor species.
    - Black-tailed prairie dog: Stantec recommends avoiding disturbance to active black-tailed prairie dog towns where possible.
    - Swift fox: Prior to ground disturbing activities, a wildlife biologist should survey the Project area for active dens. If found, coordination with the local CPW office should occur to establish appropriate mitigation.
- In order to reduce impacts to migratory birds protected under the Migratory Bird Treaty Act, Stantec recommends not disturbing migratory bird habitat (i.e., grassland) between

April 15 and July 31. Alternatively, if construction occurs during migratory bird breeding season, pre-construction surveys for active nests, including raptor nests, should be conducted in order to avoid disrupting migratory birds during the breeding season. A qualified wildlife biologist would survey the Project disturbance areas for nesting migratory birds within 5 days of any ground disturbing activity. To minimize impacts to migratory birds (including some game birds and raptors), active nests would be avoided during construction activities, in coordination with USFWS and CPW. If surveys or other available information indicate a potential for take of migratory birds, their eggs, or active nests, Cygnet Land would suspend activities and contact the USFWS and CPW for further coordination on the extent of the impact on migratory bird populations.

Therefore, results of the desktop habitat assessment and field survey indicate no significant wildlife issues related to this Project, particularly issues that would require consultation with USFWS, ESA permitting, or costly mitigation efforts from Cygnet Land.

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APPENDIX A PHOTO LOG

Photo 1 – Center of the Project Area (Looking East)

Photo 2 – Center of the Project Area (Looking West)

Photo 3 – Active Black-tailed Prairie Dog Colony

Photo 4 – Likely Old Burrowing Owl Burrow

Photo 5 – Burrowing Owl Pellet

Photo 6 – Historic Raptor Nest in Cottonwood Tree

Photo 7 – Historic Raptor Nest in Cottonwood Tree (Close-up)

APPENDIX B RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS

RECOMMENDED SURVEY PROTOCOL AND ACTIONS TO PROTECT NESTING BURROWING OWLS

Western Burrowing Owls (*Athene cunicularia hypugaea*) are commonly found in prairie dog towns throughout Colorado. Burrowing owls require prairie dog or other suitable burrows (e.g. badger) for nesting and roosting. Burrowing owls are migratory, breeding throughout the western United States, southern Canada, and northern Mexico and wintering in the southern United States and throughout Mexico.

Federal and state laws prohibit the harming or killing of burrowing owls and the destruction of active nests. It is quite possible to inadvertently kill burrowing owls during prairie dog poisoning projects, removal of prairie dogs, destruction of burrows and prairie dogs using a concussive device, or during earth moving for construction. Because burrowing owls often hide in burrows when alarmed, it is not practical to haze the birds away from prairie dog towns prior to prairie dog poisoning/removal, burrow destruction, or construction activity. Because of this, the Colorado Division of Wildlife recommends surveying prairie dog towns for burrowing owl presence before potentially harmful activities are initiated.

The following guidelines are intended as advice on how to determine if burrowing owls are present in a prairie dog town, and what to do if burrowing owls are detected. These guidelines do not guarantee that burrowing owls will be detected if they are present. However, adherence to these guidelines will greatly increase the likelihood of detection.

Seasonal Timing

Burrowing owls typically arrive on breeding grounds in Colorado in late March or early April, with nesting beginning a few weeks later. Active nesting and fledging has been recorded and may be expected from late March through early August. Adults and young may remain at prairie dog towns until migrating to wintering grounds in late summer or early autumn.

Surveys should be conducted during times when burrowing owls may be present on prairie dog towns. Surveys should be conducted for any activities occurring between March 15th and October 31st. No burrowing owls are expected to be present between November 1st and March 14th.

Daily Timing

Burrowing owls are active throughout the day; however, peaks in activity in the morning and evening make these the best times for conducting surveys (Conway and Simon 2003). Surveys should be conducted in the early morning (1/2 hour before sunrise until 2 hours after sunrise) and early evening (2 hours before sunset until 1/2 hour after sunset).

Number and locations of survey points

Burrowing owls are most frequently located visually, thus, obtaining a clear view of the entire prairie dog town is necessary. For small prairie dog towns that can be adequately viewed in their entirety from a single location, only one survey point is necessary. The survey point should be selected to provide unobstructed views (with binoculars if necessary) of the entire prairie dog town

(burrow mounds and open areas between) and all nearby structures that may provide perches (e.g., fences, utility poles, etc.)

For prairie dog towns that can not be entirely viewed from a single location because of terrain or size, enough survey points should be established to provide unobstructed views of the entire prairie dog town and nearby structures that may provide perches. Survey locations should be separated by approximately 800 meters (1/2 mile), or as necessary to provide adequate visual coverage of the entire prairie dog town.

Number of surveys to conduct

Detection of burrowing owls can be highly variable and multiple visits to each site should be conducted to maximize the likelihood of detecting owls if they are present. At least three surveys should be conducted at each survey point. Surveys should be separated by approximately one week.

Conducting the survey

- Weather Considerations Because poor weather conditions may impact the ability to detect burrowing owls, surveys should only be conducted on days with little or no wind and no precipitation.

- Passive surveys Most burrowing owls are detected visually. At each survey location, the observer should *visually* scan the area to detect any owls that are present. Some burrowing owls may be detected by their call, so observers should also *listen* for burrowing owls while conducting the survey.

  Burrowing owls are frequently detected soon after initiating a survey (Conway and Simon 2003). However, some burrowing owls may not be detected immediately because they are inconspicuous, are inside of burrows, or are not present on the site when the survey is initiated. We recommend that surveys be conducted for 10 minutes at each survey location.

- Call-broadcast surveys To increase the likelihood of detecting burrowing owls, if present, we recommend incorporating call-broadcast methods into burrowing owl surveys. Conway and Simon (2003) detected 22% more burrowing owls at point-count locations by broadcasting the primary male (*coo-coo*) and alarm (*quick-quick-quick*) calls during surveys. Although call-broadcast may increase the probability of detecting burrowing owls, most owls will still be detected visually.
-

  We recommend the following 10-minute timeline for incorporating call-broadcast methods (Conway and Simon 2003, C. Conway pers. commun.). The observer should scan the area for burrowing owls during the entire survey period.

  - 3 minutes of silence
  - 30 seconds call-broadcast of primary call (*coo-coo*)
  - 30 seconds silence
  - 30 seconds call-broadcast of primary call (*coo-coo*)
  - 30 seconds silence
  - 30 seconds call-broadcast of alarm call (*quick-quick-quick*)
  - 30 seconds silence
  - 4 minutes of silence

Calls can be broadcast from a “boom box”, a portable CD or cassette player, or an mp3 player attached to amplified speakers. Calls should be broadcast loudly but without distortion.

Recordings of this survey sequence (compact disc or mp3 sent via email) are available free of charge by contacting:

David Klute
Bird Conservation Coordinator
Colorado Division of Wildlife
6060 Broadway
Denver, CO 80216
Phone: 303-291-7320
Email: David.Klute@state.co.us

Identification

Adult burrowing owls are small, approximately 9-11 inches. They are brown with white spotting and white barring on the chest. They have long legs in comparison to other owls and are frequently seen perching on prairie dog mounds or other suitable perches (e.g., fence posts, utility poles) near prairie dog towns. Juvenile burrowing owls are similar to adults but smaller, with a white/buff colored chest that lacks barring.

General information about burrowing owls is available from the Colorado Division of Wildlife website:
http://wildlife.state.co.us/WildlifeSpecies/Profiles/Birds/BurrowingOwl.htm

Additional identification tips and information are available from the U.S. Geological Survey Patuxent Wildlife Research Center website:
http://www.mbr-pwrc.usgs.gov/id/framlst/i3780id.html

What To Do If Burrowing Owls Are Present

If burrowing owls are confirmed to be present in a prairie dog town, there are two options before proceeding with planned activities:

1. Wait to initiate activities until after November 1st or until it can be confirmed that the owls have left the prairie dog town.
2. Carefully monitor the activities of the owls, noting and marking which burrows they are using. This is not easy to accomplish and will require considerable time, as the owls may use several burrows in a prairie dog town. When all active burrowing owl burrows have been located and marked, activity can proceed in areas greater than 150 feet from the burrows with little danger to the owls. Activity closer than 150 feet may endanger the owls.

Reference

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See also:" Controlling Prairie Dogs: Suggestions For Minimizing Risk To Non-Target Wildlife Species" Colorado Division of Wildlife 03/2007

APPENDIX C RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS

Tolerance limits to disturbance vary among as well as within raptor species. As a general rule, Ferruginous Hawks and Golden Eagles respond to human activities at greater distances than do Ospreys and America Kestrels. Some individuals within a species also habituate and tolerate human activity at a proximity that would cause the majority of the group to abandon their nests. Other individuals become sensitized to repeated encroachment and react at greater distances. The tolerance of a particular pair may change when a mate is replaced with a less tolerant individual and this may cause the pair to react to activities that were previously ignored. Responses will also vary depending upon the reproductive stage. Although the level of stress is the same, the pair may be more secretive during egg laying and incubation and more demonstrative when the chicks hatch.

The term "disturbance" is ambiguous and experts disagree on what actually constitutes a disturbance. Reactions may be as subtle as elevated pulse rate or as obvious as vigorous defense or abandonment. Impacts of disturbance may not be immediately evident. A pair of raptors may respond to human intrusion by defending the nest, but well after the disturbance has passed, the male may remain in the vicinity for protection rather than forage to feed the nestlings. Golden eagles rarely defend their nests, but merely fly a half mile or more away and perch and watch. Chilling and over heating of eggs or chicks and starvation of nestlings can result from human activities that appeared not to have caused an immediate response.

A ‘holistic’ approach is recommended when protecting raptor habitats. While it is important for land managers to focus on protecting nest sites, equal attention should focus on defining important foraging areas that support the pair's nesting effort. Hunting habitats of many raptor species are extensive and may necessitate interagency cooperation to assure the continued nest occupancy. Unfortunately, basic knowledge of habitat use is lacking and may require documentation through telemetry investigations or intensive observation. Telemetry is expensive and may be disruptive so a more practical approach is to assume that current open space is important and should be protected.

Although there are exceptions, the buffer areas and seasonal restrictions suggested here reflect an informed opinion that if implemented, should assure that the majority of individuals within a species will continue to occupy the area. Additional factors, such as intervening terrain, vegetation screens, and the cumulative impacts of activities should be considered.

These guidelines were originally developed by CDOW raptor biologist Gerald R. Craig (retired) in December 2002. To provide additional clarity in guidance, incorporate new information, and update the conservation status of some species, the guidelines were revised in January 2008. Further revisions of this document may become necessary as additional information becomes available.

RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS

BALD EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area; see 'Definitions' below) within ¼ mile radius of active nests (see 'Definitions' below). Seasonal restriction to human encroachment (see 'Definitions' below) within ½ mile radius of active nests from October 15 through July 31. This closure is more extensive than the National Bald Eagle Management Guidelines (USFWS 2007) due to the generally open habitat used by Colorado's nesting bald eagles.

Winter Night Roost:

No human encroachment from November 15 through March 15 within ¼ mile radius of an active winter night roost (see 'Definitions' below) if there is no direct line of sight between the roost and the encroachment activities. No human encroachment from November 15 through March 15 within ½ mile radius of an active winter night roost if there is a direct line of sight between the roost and the encroachment activities. If periodic visits (such as oil well maintenance work) are required within the buffer zone after development, activity should be restricted to the period between 1000 and 1400 hours from November 15 to March 15.

Hunting Perch:

Diurnal hunting perches (see 'Definitions' below) associated with important foraging areas should also be protected from human encroachment. Preferred perches may be at varying distances from human encroachment and buffer areas will vary. Consult the Colorado Division of Wildlife for recommendations for specific hunting perches.

GOLDEN EAGLE

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from December 15 through July 15.

OSPREY

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through August 31. Some osprey populations have habituated and are tolerant to human activity in the immediate vicinity of their nests.

FERRUGINOUS HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from February 1 through July 15. This species is especially prone to nest abandonment during incubation if disturbed.

RED-TAILED HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within 1/3 mile radius of active nests. Seasonal restriction to human encroachment within 1/3 mile radius of active nests from February 15 through July 15. Some members of this species have adapted to urbanization and may

tolerate human habitation to within 200 yards of their nest. Development that encroaches on rural sites is likely to cause abandonment.

SWAINSON'S HAWK

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ¼ mile radius of active nests. Seasonal restriction to human encroachment within ¼ mile radius of active nests from April 1 through July 15. Some members of this species have adapted to urbanization and may tolerate human habitation to within 100 yards of their nest.

PEREGRINE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile of the nest cliff(s) from March 15 to July 31. Due to propensity to relocate nest sites, sometimes up to ½ mile along cliff faces, it is more appropriate to designate 'Nesting Areas' that encompass the cliff system and a ½ mile buffer around the cliff complex.

PRAIRIE FALCON

Nest Site:

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 15 through July 15.

NORTHERN GOSHAWK

No surface occupancy (beyond that which historically occurred in the area) within ½ mile radius of active nests. Seasonal restriction to human encroachment within ½ mile radius of active nests from March 1 through September 15.

BURROWING OWL

Nest Site:

No human encroachment within 150 feet of the nest site from March 15 through October 31. Although Burrowing Owls may not be actively nesting during this entire period, they may be present at burrows up to a month before egg laying and several months after young have fledged. Therefore it is recommended that efforts to eradicate prairie dogs or destroy abandoned towns not occur between March 15 and October 31 when owls may be present. Because nesting Burrowing Owls may not be easily visible, it is recommended that targeted surveys be implemented to determine if burrows are occupied. More detailed recommendations are available in a document entitled “Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls” which is available from the Colorado Division of Wildlife

Recommended Buffer Zones and Seasonal Restrictions Around Raptor Use Sites

Species and Use	Buffer	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bald Eagle													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■			■	■	■
ACTIVE WINTER NIGHT ROOST without a direct line of sight- No Human Encroachment	¼ Mile	■	■	■								■	■
ACTIVE WINTER NIGHT ROOST with a direct line of sight - No Human Encroachment	½ Mile	■	■	■								■	■
HUNTING PERCH - No Human Encroachment	Contact CDOW												
Golden Eagle													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile	■	■	■	■	■	■	■					■
Osprey													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	¼ Mile				■	■	■	■	■				
Ferruginous Hawk													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile		■	■	■	■	■	■					
Red-tailed Hawk													
ACTIVE NEST - No Surface Occupancy	1/3 Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	1/3 Mile			■	■	■	■	■					
Swainson's Hawk													
ACTIVE NEST - No Surface Occupancy	¼ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	¼ Mile				■	■	■	■					
Peregrine Falcon													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile			■	■	■	■	■					
Prairie Falcon													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile			■	■	■	■	■					
Northern Goshawk													
ACTIVE NEST - No Surface Occupancy	½ Mile	■	■	■	■	■	■	■	■	■	■	■	■
ACTIVE NEST - No Human Encroachment	½ Mile			■	■	■	■	■	■	■			
Burrowing Owl													
ACTIVE NEST - No Human Encroachment	150 feet			■	■	■	■	■	■	■	■		
	■	= time period for which seasonal restrictions are in place.											

DEFINITIONS

Active nest – Any nest that is frequented or occupied by a raptor during the breeding season, or which has been active in any of the five previous breeding seasons. Many raptors use alternate nests in various years. Thus, a nest may be active even if it is not occupied in a given year.

Active winter night roost – Areas where Bald Eagles gather and perch overnight, and sometimes during the day in the event of inclement weather. Communal roost sites are usually in large trees (live or dead) that are relatively sheltered from wind and are generally in close proximity to foraging areas. These roosts may also serve a social purpose for pair bond formation and communication among eagles. Many roost sites are used year after year.

Human encroachment – Any activity that brings humans in the area. Examples include driving, facilities maintenance, boating, trail access (e.g., hiking, biking), etc.

Hunting perch – Any structure on which a raptor perches for the purpose of hunting for prey. Hunting perches provide a view of suitable foraging habitat. Trees are often used as hunting perches, but other structures may also be used (utility poles, buildings, etc.).

Surface occupancy – Any physical object that is intended to remain on the landscape permanently or for a significant amount of time. Examples include houses, oil and gas wells, tanks, wind turbines, roads, tracks, etc.

CONTACT

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