Biological Resources Report

I-270 Corridor Improvements

May 2021

Prepared For:
CDOT Region 1
2829 West Howard Place
Denver, CO 80204

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Acronyms and Abbreviations

Acronym	Definition
BMP	best management practice
CDOT	Colorado Department of Transportation
CPW	Colorado Parks and Wildlife
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
GIS	geographic information system
GPS	global position system
I-25	Interstate 25
I-270	Interstate 270
I-70	Interstate 70
IPaC	Information Planning and Conservation
MBTA	Migratory Bird Treaty Act
NWP	Nationwide Permit
PEM	palustrine emergent
PSS	palustrine scrub-shrub
ROW	right(s)-of-way
SB40	Senate Bill 40
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1.0 Introduction

The Colorado Department of Transportation (CDOT) and Federal Highway Administration (FHWA), in conjunction with local partners Adams County and Commerce City, are proposing improvements to 6 miles of Interstate 270 (I-270) in Adams County, Commerce City, and the City and County of Denver, Colorado, primarily between Interstate 25 (I-25) and Interstate 70 (I-70) (Figure 1). CDOT and FHWA are preparing an Environmental Assessment (EA) for this project, referred to as the I-270 Corridor Improvements project. Sections 1 and 2 and Appendix A of the EA contain the project setting and a detailed description of alternatives.

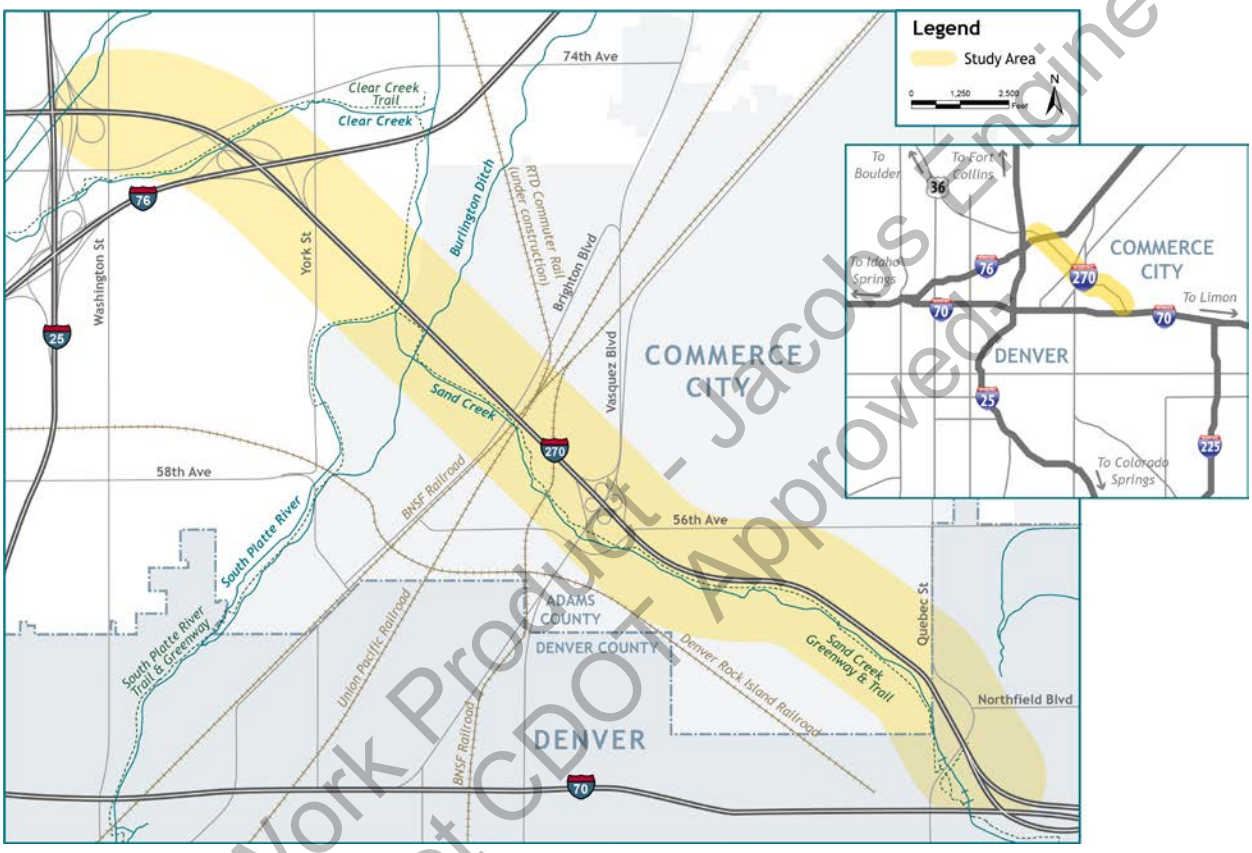

Figure 1. Project Location

This report outlines the biological resources in the study area and project effects to these resources.

2.0 Regulatory Context

Various federal and state laws and regulations are in place to protect plant and animal species and their habitats, as well as wetlands and waterways. Biological resources discussed in this report are protected by the following federal and state laws, regulations, and policies.

2.1 Federal Regulations

2.1.1 Endangered Species Act

Section 7(a)(1) of the Endangered Species Act (ESA) of 1973 (as amended) directs all federal agencies to participate in the conservation and recovery of threatened and endangered species. Section 7(a)(2) of the ESA states that each federal agency shall consult with the U.S. Fish and Wildlife Service (USFWS) on terrestrial species and inland fish and with the National Marine Fisheries Service on marine species and anadromous fish to ensure that any action they authorize, fund, or carry out is not likely to jeopardize

the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

2.1.2 The Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Originally passed in 1918, the Migratory Bird Treaty Act (MBTA) protects raptors and other migratory birds and their active nest sites. The MBTA stipulates that it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to sell, barter, purchase, or deliver; or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. In Colorado, most birds, except for the European starling, house sparrow (*Passer domesticus*), rock dove (pigeon), and grouse/pheasant species (order Galliformes), are protected under MBTA Sections 703-712. The MBTA stipulates that it is unlawful to destroy an active migratory bird nest, nestling, or eggs. The USFWS allows vacant nests to be destroyed, but active nests with birds, their young, or eggs must be left undisturbed (USFWS 2020).

In addition to the MBTA, the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, provides for the protection of the bald eagle and the golden eagle by prohibiting the taking, possession, and use of these two species for commerce except under certain specified conditions. The definition of "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb (USFWS 2018).

2.1.3 Section 404 of the Clean Water Act

The Clean Water Act was enacted to restore and maintain the chemical, physical, and biological integrity of U.S. waters by eliminating pollutant discharges. In support of this goal, the Clean Water Act established permit programs to control discharges into U.S. waters and provided the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE) with regulatory authority to issue permits. Section 404 established a program to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands and streams, and requires the issuance of a permit for any activities resulting in such discharge, unless an exemption applies.

2.1.4 Executive Order 11990, Protection of Wetlands

The purpose of Executive Order 11990 is to "minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." CDOT has wetland-specific requirements beyond those required by the USACE to comply with Executive Order 11990. A CDOT wetland findings report will be required if permanent wetland impacts exceed 500 square feet or if temporary impacts exceed 1,000 square feet, regardless of USACE jurisdiction. This does not include impacts to open-water areas. CDOT requires mitigation for all wetland impacts at a 1:1 ratio, regardless of the jurisdictional status of the affected wetland.

2.2 State and Local Regulations

2.2.1 Colorado State Statute Title 33, Article 2

In 1985, the Colorado General Assembly declared that it is the policy of the state to manage all nongame wildlife for human enjoyment and welfare, for scientific purposes, and to ensure their perpetuation as members of ecosystems. As part of that declaration, the state found that some species or subspecies of wildlife native to the state may be found to be endangered or threatened within the state should be afforded protection to maintain and enhance their numbers to the extent possible. These actions are carried out through various laws and regulations that make it illegal for any person to "take, possess, transport, export, process, sell or offer for sale, or ship, knowingly transport or receive for shipment any species or subspecies of wildlife appearing on the list of wildlife indigenous to this state determined to be threatened or endangered within the state" (State of Colorado 2016).

2.2.2 CDOT 2009 Impacted Black-tailed Prairie Dog Policy

For the project, the applicable policies that will be followed are the CDOT 2009 Impacted Black-tailed Prairie Dog Policy and the Black-Tailed Prairie Dog Relocation Guidelines or the most recent version thereof (CDOT 2002, 2009). Commerce City and Adams County do not have specific black-tailed prairie dog protection policies.

2.2.3 Colorado Senate Bill 40

Senate Bill 40 (SB40) guidelines outline various best management practices designed to minimize impacts to state waterways during and after construction or maintenance activities. The guidelines are applicable to any projects on or adjacent to streams that fall under the jurisdiction of SB40, which includes the stream bed proper, its immediate banks, and associated riparian areas that contribute to stream food chain support (CDOT 2018). Any portions of the project that will impact an SB40 jurisdictional stream will require SB40 Wildlife Certification, which may include mitigation measures designed to improve fish and wildlife habitat, as well as tree replacements within riparian areas where tree loss is proposed.

2.2.4 Colorado Noxious Weed Act

The Colorado Noxious Weed Act of 2003 (Colorado Revised Statutes 35-5.5-101 through 119) recognizes that "certain undesirable plants constitute a present threat to the continued economic and environmental value of the lands of the state and if present in any area of the state must be managed." The legislation places all public and private lands in Colorado under the jurisdiction of local governments to manage noxious weeds. According to this act, a noxious weed meets one or more of the following criteria (CDA 2020a, 2020b):

- Aggressively invades or is detrimental to economic crops or native plant communities
- Is poisonous to livestock
- Is a carrier of detrimental insects, diseases, or parasites
- Has direct or indirect effects that are detrimental to the environmentally sound management of natural or agricultural systems

The State of Colorado Department of Agriculture maintains a State Noxious Weed List (CDA 2020b).

2.2.5 Shortgrass Prairie Initiative

The FHWA, USFWS, Colorado Parks and Wildlife (CPW), CDOT, and The Nature Conservancy have developed a Memorandum of Agreement to mitigate anticipated impacts to the shortgrass prairie ecosystem. Colorado's shortgrass prairie covers more than 27 million acres in eastern Colorado, which is almost a third of the entire state. Approximately 90,000 of those acres are within CDOT rights-of-way (ROWs). The Colorado Shortgrass Prairie Initiative was implemented to help protect the state's shortgrass prairie as a result of CDOT maintenance activities, basically east of I-25. The Shortgrass Prairie Initiative is valid until January 12, 2024, or until 15,160 acres of impact have been incurred, at which time consultation with the USFWS will been reopened. CDOT annually reports to the USFWS each project that took advantage of the Shortgrass Prairie Initiative, the number of temporary and permanent impacts to the prairie, and the remaining number of acres available for impact in the following years (CDOT 2013). Loss of vegetated areas within the project corridor will be minimized through the implementation of onsite best management practices, and any permanent loss of natural areas will be assessed and mitigated through CDOT's offsite Shortgrass Prairie Initiative, which conserves habitats in offsite locations to compensate for project impacts.

3.0 Methods

Jacobs Engineering Group Inc. biologists evaluated the biological resources within the study area (approximately 445 acres), which represents the extent of potential permanent and temporary

construction-related impacts. In this report, biological resources refer to vegetation and noxious weeds, general wildlife, federally listed threatened and endangered species, Colorado special status species, and wetlands and waters of the U.S.

3.1 Data Gathering

Biologists conducted field surveys during July 2020 and follow-up surveys in early October 2020 to account for study area adjustments; collect information on vegetation, wildlife habitat, and noxious weeds; and formally delineate wetlands and waters of the U.S. within the study area. General information on climate, vegetation, soils, hydrology, and existing wetlands and waters were reviewed before the field surveys. Data sources included the following:

- U.S. Geological Survey topographic maps and the National Hydrography Dataset
- USFWS and Colorado Natural Heritage Program, National Wetlands Inventory Map, and Colorado Wetland Mapper online database
- Google Earth aerial imagery (dated 9/12/2019, 5/13/2017, 10/6/2013, 10/7/2012, 7/30/2007, and 6/26/1993)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service soil survey data
- Review of the Colorado Department of Agriculture noxious weeds
- EPA Ecoregions (Chapman et al. 2006) and Land Cover Mapping (DRCOG 2019)
- CPW species activity mapping data and online species profiles
- USFWS species profiles

Federally listed threatened and endangered species potentially occurring within the study area were determined by using the USFWS online Information Planning and Conservation (IPaC) tool. Colorado special status species were reviewed from the CPW website and from county lists provided by CDOT (Peterson, pers. comm. 2016). To capture information pertaining to vegetation communities, noxious weeds, and plant and wildlife habitat or observations, field notes or global position system (GPS) data were collected during the field surveys.

The survey methodology for the wetland and waters of the U.S. delineation followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the Ordinary High Water Mark Regulatory Guidance Letter No. 05-05 (USACE 2005), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region 2.0* (USACE 2010). Wetland indicator statuses for plants were taken from *The National Wetland Plant List, version 3.4* (USACE 2018).

Where aquatic resources were identified, feature boundaries were mapped using a handheld GPS unit with submeter accuracy. Data were collected in North American Datum of World Geodetic System 1984 in U.S. survey feet. Geographic information system (GIS) data were post-processed using ArcGIS 10.7.1.

3.2 Analysis Approach

The analysis of impacts considers how the Proposed Action and the No Action Alternative would permanently and temporary impact land cover types (habitats) through GIS and coordination with design staff. This includes impacts to general wildlife species, as well as migratory birds, Colorado special status species, and federally listed threatened and endangered species. The Statewide Impact Findings Table and the corresponding species coarse habitat evaluation tool were used to analyze impacts to federally listed species. Permanent and temporary impacts to wetlands and waters of the U.S. were calculated by overlaying the proposed project footprint with the aquatic features that were delineated via GPS during the field surveys.

4.0 Existing Conditions

The study area is located within the Flat to Rolling Plains sub-ecoregion within the High Plains ecoregion, as defined by the EPA. The High Plains are drier and occur at a higher elevation than the Great Plains to the east. The native grasslands throughout the ecoregion are dominated by blue grama (*Bouteloua gracilis*) and buffalo grass (*Bouteloua dactyloides*) (Chapman et al. 2006). Overall, natural habitat is lacking throughout the study area, which is dominated by the I-270 ROW (for example, road surface, medians, and guardrails). Also, most of the land use directly adjacent to the ROW within the study area is heavily developed and urbanized—mostly with industrial land uses. Consequently, areas with native vegetation are lacking, and much of the nondeveloped areas contain invasive or noxious vegetation. The elevation throughout the study area is fairly consistent ranging from 5,100 to 5,250 feet above mean sea level.

The study area is located within the Middle South Platte – Cherry Creek watershed (HUC 10190003) (USGS 2020a). Sand Creek flows northwest along the western side of I-270 before joining the South Platte River in the northern portion of the study area. Much of Sand Creek is heavily incised with steep, unstable banks created from heavy storm water influxes from development. Also, a major flood event in September 2013 (approximately 14,000 cubic feet per second), which was approximately 14 times greater than the normal annual peak discharge event (approximately 1,000 cubic feet per second) (USGS 2020b), likely exacerbated and accelerated this channelization. This single event likely scoured the channel, creating floodplain terraces now disconnected from normal high-water events. As such, some former floodplain wetlands now have deficient hydrology to support wetlands leading to stressed riparian habitat and invasion of weed species. Dense patches of coyote willow (*Salix exigua*) abut Sand Creek, providing areas of wetland and riparian habitat. However, many of the willow stands are stressed (for example, lacking foliage) in part because of the channel actively incising.

Clear Creek flows northeast under I-270 near the northern terminus of the study area before intersecting with the South Platte River. Clear Creek is not as incised as Sand Creek and has more gravel sand bars and floodplain benches. Only a short section of Clear Creek passes through the study area where three large bridge structures span the waterway. The overbank contains a large riparian wetland complex connected to borrow pits, dominated by coyote willow and mature plains cottonwood trees (*Populous deltoides* ssp. *monilifera)*. The wetland complex is somewhat cut off from natural floods by the existence of a berm and recreational trail. However, the complex does drain through culverts connecting the wetlands to Clear Creek.

The South Platte River flows north, under, and perpendicular to I-270, near the center of the project study area. The South Platte River is a highly manipulated stream, subject to altered flow regime because of water diversions, storage projects, treatment facilities, residential, commercial, and industrial use, and urban runoff. The I-270 bridge over the South Platte is a high bridge just downstream of a major sewage treatment facility. The bridge does not appear to restrict flow except potentially during extreme flood events. Throughout the study area, the banks of the South Platte River are very steep, which limits the riparian and wetland zone to a narrow strip at the stream's ordinary high-water mark.

4.1 General Habitat

General habitat or land cover types were calculated using the Land Use Land Cover Pilot Project developed by the Denver Regional Council of Governments in 2018 and modified in 2019 (DRCOG 2019). The total size of the study area is approximately 443 acres, of which 43 percent consists of areas that are categorized as impervious surfaces or structures and do not provide habitats. Figure 2 and Table 1 display the associated land cover types, acreages, and relative cover.

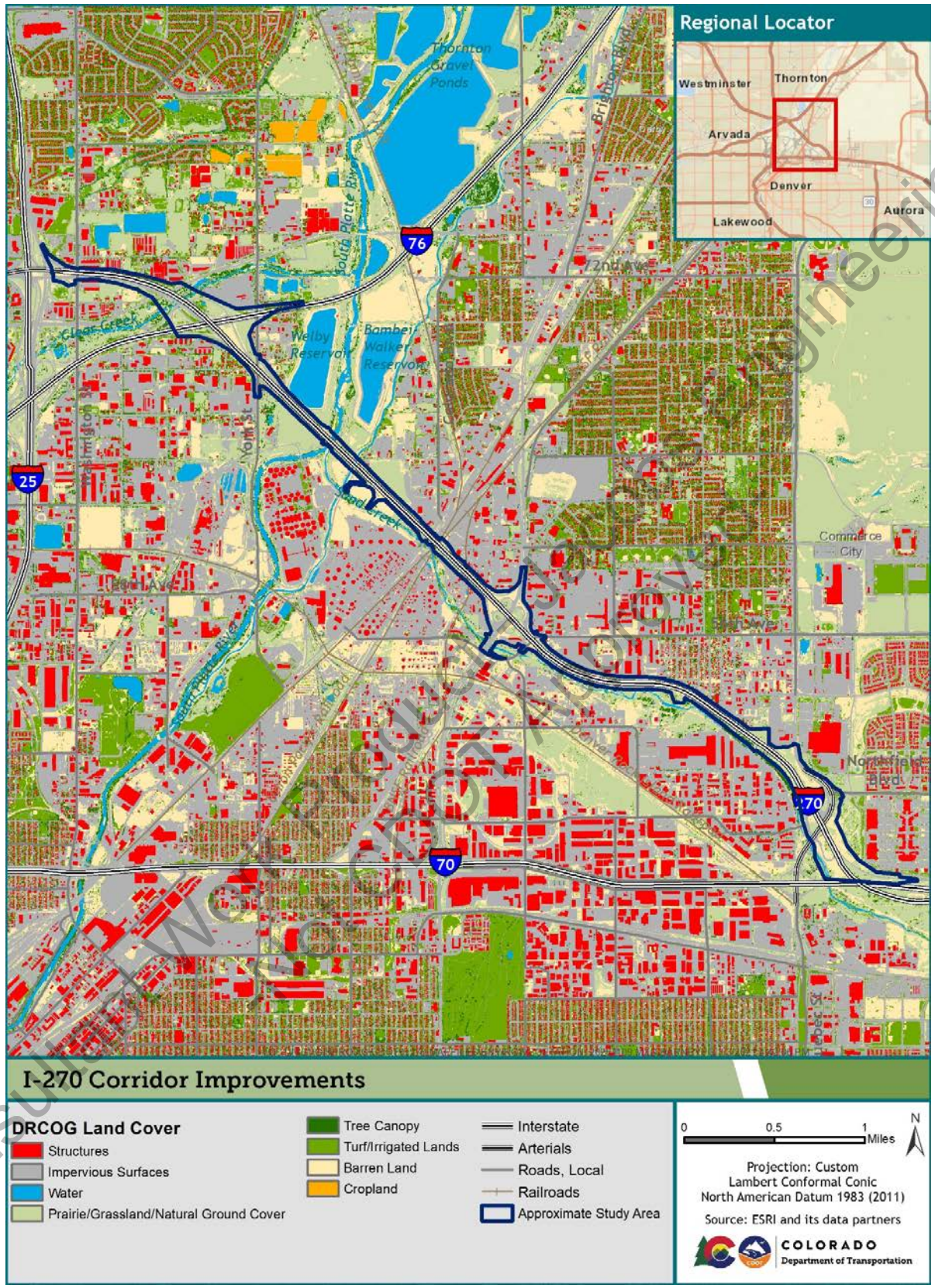

Figure 2. Land Cover Mapping

Table 1. Land Cover Types Identified in the Study Area

Land Cover Type	Acreage within Study Area	Percentage of Study Area
Impervious surface	190.0	43%
Prairie, grassland, and natural ground cover	137.8	31%
Barren land	83.2	19%
Turf and irrigated land	18.5	4%
Tree canopy	8.2	2%
Water	5.1	1%
Structures	0.6	<1%
Total	443.4	100%

Source: DRCOG 2019

Notes:

Impervious surfaces – Human-constructed surfaces through which water cannot penetrate and that are below approximately 2 meters in height.

Prairie, grassland, and natural ground cover – Large, open, semi-arid areas composed of perennial grasses, herbaceous vegetation, and shrubs.

Barren land – Areas void of vegetation and that consist of natural earthen material, regardless of how it has been cleared.

Turf and irrigated lands – Turf grass and areas of land that are actively managed and watered but do not fall in the cropland class.

Tree canopy – Deciduous and evergreen woody vegetation of either natural succession or human planting that is over approximately 5 meters high.

Water – All areas of open water, generally with less than 25 percent of vegetation/land cover.

Structures – Human-constructed objects made of impervious materials that are greater than approximately 2 meters high.

4.2 Noxious Weeds

Under the Colorado Noxious Weed Act, state-designated noxious weeds are categorized as high-priority (List A), medium-priority (List B), low-priority (List C), or Watch List weeds (CDA 2020b). Per this act, List A weeds must be eradicated, List B weeds must be treated and controlled to prevent spread based on county weed control priorities, and List C weeds are low-priority weeds requiring control and education to prevent further spread. Watch List weeds are weeds that should be tracked and reported, but control is not required (CDA 2020a, 2020b).

A total of 19 state-designated noxious weeds were identified in the study area during the July 2019 field surveys (Table 2). Of the 19 noxious weeds, 11 were List B, five were List C, and three were Watch List; no List A species were observed. Canada thistle (*Cirsium arvense*) and common teasel (*Dipsacus fullonum*) (List B species) and downy brome (*Bromus tectorum*) and field bindweed (*Convolvulus arvensis*) (List C species) were observed in high density throughout the study area. Canada thistle and common teasel were mainly found near wetland and riparian areas, while downy brome and field bindweed were abundant in upland or drier locations.

Exotic species were also present within the study area during the time of survey, most notably, the Russian thistle and kochia. Although the exotic species do not require management under the Colorado Noxious Weed Act, they can spread into naturalized areas that are disturbed by construction activities and degrade natural environments.

Table 2. Noxious Weeds Identified in the Study area

Common Name	Scientific Name	State List	USDA Code	Density and General Location in Study Area
Bull thistle	*Cirsium vulgare*	B	CIVU	Low – Disturbed, dry upland areas
Canada thistle	*Cirsium arvense*	B	CAIR4	High – Abundant throughout, particularly in mesic areas adjacent to wetlands
Chicory	*Cichorium intybus*	C	CIIN	Low – Disturbed, dry upland areas
Common burdock	*Arctium minus*	C	ARMI2	Low – Disturbed, dry upland areas
Common mullein	*Verbascum thapsus*	C	VETH	Low – Disturbed, dry upland areas
Common reed	*Phragmites australis*	Watch List	PHAU7	Low – Wetland areas along the bank of Sand Creek
Common teasel	*Dipsacus fullonum*	B	DIFU2	High – Abundant throughout, particularly in mesic areas adjacent to wetlands
Cutleaf teasel	*Dipsacus laciniatus*	B	DILA4	Low – Mesic areas adjacent to wetlands
Dalmatian toadflax	*Linaria dalmatica*	B	LIDA	Low – Disturbed, dry upland areas
Diffuse knapweed	*Centaurea diffusa*	B	CEDI3	Medium – Disturbed, dry upland areas
Downy brome	*Bromus tectorum*	C	BRTE	High – Disturbed, dry upland areas
Field bindweed	*Convolvulus arvensis*	C	COAR4	High – Disturbed, dry upland areas
Hoary cress	*Cardaria draba*	B	CADR	Medium – Disturbed, dry upland areas
Houndstongue	*Cynoglossum officinale*	B	CYOF	Low – Disturbed, dry upland areas
Leafy spurge	*Euphorbia esula*	B	EUES	Medium – Disturbed, dry upland areas
Perennial pepperweed	*Lepidium latifolium*	B	LELA2	Low – Disturbed, dry upland areas
Russian olive	*Elaeagnus angustifolia*	B	ELAN	Low – Mesic areas adjacent to Sand Creek and the I-270 ROW
Siberian elm	*Ulmus pumila*	Watch List	ULPU	Low – Scattered at low densities throughout the study area
Tree of Heaven	*Ailanthus altissima*	Watch List	AIAL	Low – Scattered at low densities throughout the study area

Source: CDA 2020b

Notes:

High (greater than 66 percent) = species are ubiquitous throughout the study area, and large infestations are present.
Low (0 to 33 percent) = individuals are present throughout the project, or there are small, isolated infestations.
Medium (34 to 66 percent) = individuals are relatively common throughout the study area.

4.3 Wildlife

4.3.1 General Wildlife

As previously discussed, native or natural habitats are limited within and adjacent to the study area. Accordingly, wildlife species potentially found within the study area include mammals and birds that are common and fairly widespread in urban and suburban environments, including raccoons (*Procyon lotor*), red foxes (*Vulpes vulpes*), coyotes (*Canis latrans*), striped skunks (*Mephitis mephitis*), eastern cottontail rabbits (*Sylvilagus floridanus*), deer mice (*Peromyscus maniculatus*), voles (*Microtus* spp.), fox squirrels (*Sciurus niger*), black-billed magpies (*Pica hudsonia*), American robins (*Turdus migratorius*), house

finches (*Haemorphus mexicanus*), European starlings (*Sturnus vulgaris*), and rock pigeons (*Columba livia*).

The study area is within the overall range for mule deer (*Odocoileus hemionus*) and white-tailed deer (*Odocoileus virginianus*), as mapped by CPW. Both species are considered uncommon within the study area and, when present, are likely confined to the Sand Creek, Clear Creek, and South Platte River corridors.

4.3.2 Migratory Birds

Migratory bird habitats are present within the study area, primarily along the waterways in the wetland and riparian habitats. Based on a data review of raptor nest locations received from CDOT, no raptor nests are mapped within 0.5 mile of the study area. A cursory nesting survey was conducted during the site visit, and numerous cliff and barn swallow (*Petrochelidon pyrrhonota* and *Hirundo rustica*, respectively) nests were observed on various bridges in the study area. One inactive raptor nest was observed in a tree along Sand Creek immediately adjacent to the study area in the southeastern portion of the project. This nest was likely used by either red-tailed hawks (*Buteo jamaicensis*) or Swainson's hawks (*Buteo swainsoni*), both of which are relatively common in the region. Although the raptor nest observed was inactive, inactive nests can be used again in subsequent nesting seasons, so this nest could become active in the future.

4.3.3 Colorado Special Status Species

Colorado special status species potentially occurring within the study area were determined through review of species lists per county provided by CDOT and of habitat associations from CPW and results of the field surveys. Colorado special status species listed in Adams County and their potential to occur in the study area are outlined in Table 3. A small portion of the study area at the southeastern end is within Denver County. This was considered when reviewing the special status species list, and there were no additional species for Denver County beyond what was listed for Adams County.

Table 3. Colorado Special Status Species Potentially Occurring in the Study area

Species	Status	CPW County Data	General Habitat Association	Habitat in Project Vicinity
Amphibians				
Northern leopard frog (*Rana pipiens*)	SC	Known to occur	Wet meadows and the banks and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches.	Yes. Wetlands and waterways are present.
Birds				
Bald eagle (*Haliaeetus leucocephalus*)	SC	Known to occur	Seldom seen far from water, such as large rivers, lakes, and seacoasts. In Colorado, they are often found near reservoirs and along major rivers.	Yes. CPW has identified habitats in proximity to the study area.
Ferruginous hawk (*Buteo regalis*)	SC	Known to occur	Flat and rolling terrain in grassland or shrub steppe. During the winter, they use open farmlands, grasslands, deserts, and other arid regions.	No. Habitat is not present.
Greater sandhill crane (*Antigone canadensis*)	SC	Known to occur	Parks with grassy hummocks and watercourses, beaver ponds, and natural ponds lined with willows or aspens. They nest in wetlands and shallow marshes. Sandhill cranes feed in mudflats around reservoirs, moist meadows, and agricultural areas.	No. Habitat is not present.
Least tern (*Sterna antillarum*)	FE/SE	Known to occur	Sandy or pebbly beaches, well above the water line, around lakes and reservoirs, or on sandy soil sandbars in river channels.	No. Habitat is not present.

Species	Status	CPW County Data	General Habitat Association	Habitat in Project Vicinity
Long-billed Curlew (*Numenius americanus*)	SC	Known to occur	Sparsely vegetated shortgrass or mixed-grass prairie with short vegetation, near waterbodies.	No. Habitat is not present.
Mountain Plover (*Charadrius montanus*)	SC	Known to occur	Prairie grasslands, arid plains, and fields.	No. Habitat is not present.
Peregrine falcon (*Falco peregrinus*)	SC	Known to occur	Open spaces usually associated with high cliffs and bluffs overlooking rivers and coasts.	No. Habitat is not present.
Piping plover (*Charadrius melodus*)	FT/ST	Known to occur	Nesting habitat in Colorado is on sandy lakeshore beaches, sandbars within riverbeds, or even sandy wetland pastures.	No. Habitat is not present.
Western burrowing owl (*Athene cunicularia*)	ST	Known to occur	Dry, open areas with short grasses and no trees. They nest and live in underground burrows created by prairie dogs, ground squirrels, and badgers.	Yes. Areas of active and inactive black-tailed prairie dog colonies are present within the study area.
Western snowy plover (*Charadrius alexandrinus nivosus*)	SC	Known to occur	Beaches, ponds, and shorelines are the preferred habitats. Nests are built on the ground, usually in open or sparsely vegetated areas near water.	No. Habitat is not present.
Whooping crane (*Grus americana*)	FE/SE	Known to occur	Mudflats around reservoirs and in agricultural areas. Nesting grounds are wetland communities dominated by bulrush.	No. Habitat is not present.
Mammals				
Black-tailed prairie dog (*Cynomys ludovicianus*)	SC	Known to occur	Shortgrass to mid-grass prairies on flats or shallow slopes.	Yes. Active prairie dog colonies are present in the study area.
Preble's meadow jumping mouse (*Zapus hudsonius preblei*)	FT/ST	Known to occur	Well-developed riparian habitat with adjacent, relatively undisturbed grassland communities and a nearby water source between 4,650 to 7,600 feet elevation (USFWS 2016).	No. Project is within the Block Clearance Zone for the Denver metropolitan area (USFWS 2016).
Swift fox (*Vulpes velox*)	SC	Known to occur	Shortgrass and mid-grass prairies with flat or gently sloping topography.	No. Habitat is not present.
Reptiles				
Common garter snake (*Thamnophis sirtalis*)	SC	Known to occur	Marshes, ponds, and the edges of streams. Restricted to aquatic, wetland, and riparian habitats along the floodplains of streams; seldom found away from water or at isolated ponds.	Yes. Wetland, riparian, and stream habitats are present.

Sources: CPW 2020a

Notes:

County occurrence data were developed by the Natural Diversity Information Source and obtained through CDOT (2016).

FE = Federal Endangered
FT = Federal Threatened
SC = State Special Concern

SE = State Endangered
ST = State Threatened

Of the Colorado special status species listed in Table 3, most are not expected to occur in the study area because of a lack of suitable habitat. The study area does contain potentially suitable habitats for five species that may be present. These species are discussed in the following sections.

Northern Leopard Frog

Northern leopard frogs (state special concern) prefer the banks and shallow portions of marshes, wet meadows, ponds, lakes, and streams, particularly where rooted aquatic vegetation is present (Hammerson 1999). In Colorado, they are distributed nearly statewide in mountains and lowlands, but they tend to be scarce or absent in most of southeastern Colorado and the Republican River drainage in northeastern Colorado. They may be locally common, but are now rare or extirpated in many areas, particularly in the mountains (CPW 2020a). In Colorado, eggs are laid mainly in early spring at low elevations and in late spring in the mountains. Eggs are laid and larvae develop in shallow, still, permanent water (typically), generally in areas well exposed to sunlight. Eggs generally are attached to vegetation just below the surface of the water (Hammerson 1999).

Historically, northern leopard frogs presumably occurred in or along the waterways within the study area. Because of the urbanization of the project corridor and degradation of aquatic habitats (for example, water quality and the loss of aquatic vegetation and floodplains), it is unlikely that they would be present. However, because habitat components are present in the study area, there is the potential for northern leopard frogs to occur in the study area in areas associated with Sand Creek, Clear Creek, and the South Platte River. The study area contains approximately 11.5 acres of wetland habitat that may support the northern leopard frog.

Bald Eagle

In 1967, the USFWS listed the eagle as endangered under the Endangered Species Preservation Act of 1966 and later under the ESA of 1973 (Buehler 2000). Increased protection and the ban on some pesticides (dichlorodiphenyltrichloroethane in particular), have allowed the bald eagle to come back from the brink of extinction. The recovery has been so dramatic that in 2007, the USFWS removed the eagle from the list of threatened and endangered species. The bald eagle was removed from the Colorado list of threatened and endangered species in 2009 and is currently a state special concern species (CPW 2020a).

Bald eagles live throughout North America, from Alaska to Newfoundland, and from the tip of Florida to southern California (Kingery 1998). Bald eagles are seldom seen far from water and are often found near reservoirs and along major rivers in Colorado (for example, South Platte, Arkansas, Rio Grande, Yampa, and Colorado) during both summer and winter (CPW 2020a). Colorado's bald eagle population greatly increases in the winter, when eagles occur most often on the plains, western river systems, and mountain parks (Kingery 1998). Typically, around 400 to 1,000 bald eagles can be found over-wintering throughout the state, where they communally roost in large trees for warmth and protection. Most of the birds arrive in mid-November and depart between mid-February and mid-March. During early winter, when open water is more available, they feed on fish (self-caught or stolen from other birds), waterfowl, rabbits, muskrats, and prairie dogs, and they often eat carrion and road-killed animals. The first bald eagle nests were discovered in Colorado in the mid-1970s. Populations have since consistently increased, and nearly 120 nests are currently known in the state. Bald eagle pairs that breed in Colorado tend to nest in large, mature cottonwoods or pines to hold their heavy nests (Kingery 1998; CPW 2020a).

CPW has identified roosting habitat and an active nesting site in Rocky Mountain Arsenal National Refuge approximately 6 miles east of the study area (CPW 2018). No nests were observed during the field survey, and roosting habitats have not been identified along the waterways in the study area. Bald

eagle occurrences within the study area are assumed to be uncommon and associated with foraging or flight between more desirable habitats.

Black-tailed Prairie Dog

Black-tailed prairie dogs (state special concern) are diurnal, burrowing rodents, almost 15 inches long, including a 2.5-inch, black-tipped tail. Unlike some other species within the genus *Cynomys*, black-tailed prairie dogs do not hibernate. They will, however, remain underground for several consecutive days during extremely cold weather. Black-tailed prairie dogs occur throughout the eastern third of Colorado, east of the foothills, within the shortgrass prairie typically below 6,000 feet. According to one estimate, black-tailed prairie dogs once covered 7 million acres in Colorado. The largest areas of active prairie dog colonies are located along the Front Range and in the southcentral/southeastern portions of Colorado. Black-tailed prairie dog populations have declined because of sylvatic plague, habitat conversion and fragmentation, and other anthropogenic reasons, such as recreational shooting and systematic poisoning (CPW 2020a).

The study area is within the mapped range for black-tailed prairie dogs (CPW 2018). A total of 33 acres of active colonies were mapped during the field surveys in the southeastern portion of the project. Figure 3 shows the five mapped colonies and their associated acreages.

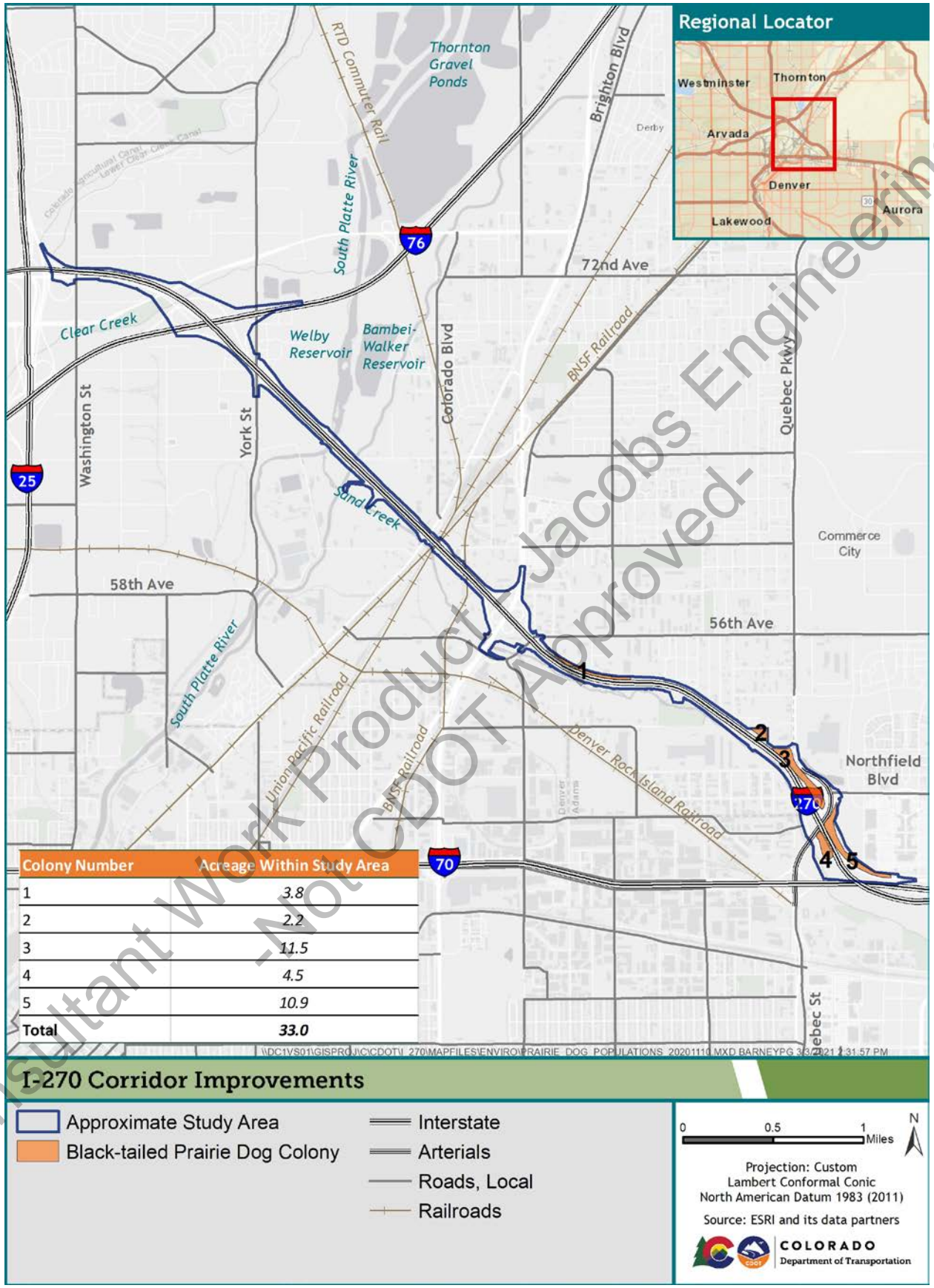

Figure 3. Active Black-tailed Prairie Dog Colonies

Common Garter Snake

Common garter snakes (state special concern) are generally black, gray, or brown with a prominent yellow stripe on their back and pale stripes on the sides of their body. They can reach a total length of about 49 inches but are usually much smaller in Colorado. The tail sometimes is incomplete because of breakage. Their distribution in Colorado includes northeastern Colorado along the South Platte River and its tributaries at elevations below 6,000 feet and the North Fork Republican River drainage in Yuma County at about 3,500 to 3,600 feet. They are considered widely distributed along the eastern base of the Front Range (Colorado Herpetological Society 2020; CPW 2020a).

Common garter snakes are basically restricted to aquatic, wetland, and riparian habitats along the floodplains of streams and are seldom found away from water or at isolated ponds. They are active in shallow water and on land adjacent to water, and they feed on frogs, toads, amphibian larvae, fishes, earthworms, and rodents (CPW 2020a).

CPW has identified that the study area is within the overall range of the common garter snake (CPW 2018). Because habitat components are present in the study area, there is the potential for common garter snakes to occur in the study area along Sand Creek, Clear Creek, and the South Platte River.

Western Burrowing Owl

Western burrowing owls (state threatened) are small, long-legged owls, with a short tail but relatively long wings. Burrowing owls are diurnal, hunting both day and night. Although burrowing owls can dig their own burrows, they usually occupy burrows that have been dug by other small mammals, such as prairie dogs, ground squirrels, and even badgers. The western population of burrowing owls can be found summering throughout much of Colorado in suitable habitats, though they are more common on the eastern shortgrass prairies. Burrowing owls eat a variety of prey, including insects, small mammals, birds, reptiles, scorpions, and amphibians (CPW 2020a). Because numerous black-tailed prairie dog colonies were observed within the study area, there is the potential for burrowing owls to be present.

4.3.4 Federally Listed Threatened and Endangered Species

As previously stated under Section 3.0 – Methods, the USFWS's IPaC online service was used to acquire a list of federally listed threatened and endangered species with the potential to occur within the study area.

Federally listed species include the following:[1]

- Least tern (*Sterna antillarum*) – Endangered*
- Mexican spotted owl (*Strix occidentalis lucida*) – Threatened
- Piping plover (*Charadrius melodus*) – Threatened*
- Whopping crane (*Grus americana*) – Endangered*
- Pallid sturgeon (*Scaphirhynchus albus*) – Endangered*
- Ute-ladies'-tresses orchid (*Spiranthes diluvialis*) – Threatened
- Western prairie fringed orchid (*Platanthera praeclara*) – Threatened*

4.4 Wetlands/Waters of the U.S.

As previously mentioned, the study area is located within the Middle South Platte – Cherry Creek watershed, and the South Platte River, Clear Creek, and Sand Creek all flow through the study area. Other surface waters in the study area include O'Brien Ditch, drainages, and a pond next to Clear Creek. Wetlands in the study area are associated with those surface waters or are found along human-made

[1] The five species indicated with an asterisk occur downstream of the study area and could be impacted by projects that would result in water-related activities in the Platte River Basin [for example, South Platte River and its tributaries])

roadside swales and/or stormwater features. Details on the methodology, including the results of the aquatic resources delineation, proposed project impacts, and mitigation considerations, will be described further in the upcoming wetland findings report.

A total of 49 aquatic resources (that is, wetlands and open waters) totaling approximately 16.7 acres were delineated during July and September 2020. Three broad wetland categories were delineated and mapped within the study area, including herbaceous, palustrine emergent (PEM) wetlands associated with natural riparian areas, palustrine scrub-shrub (PSS) wetlands associated with natural riparian areas, and PEM wetlands associated with stormwater hydrology (Cowardin, et al. 1979). Of these areas, 10 were open-water features (for example, canals, creeks, and rivers) totaling 6.5 acres, 19 were categorized as PEM wetlands (4.0 acres), and 20 were PSS wetlands (6.2 acres). Each of the wetland areas contained a dominance of wetland vegetation and hydric soils and had indicators of wetland hydrology. The typical hydrophytic vegetation characterizing these wetland types and the transitional upland communities are generally described as follows:

- Riparian PEM – PEM wetland areas generally associated with intermittent to perennial hydrologic regime on natural streams within the study area. They are generally dominated by one or more of the following species: broadleaf cattail (*Typha latifolia*), Baltic rush (*Juncus balticus*), and inland saltgrass (*Distichlis spicata*).
- Riparian PSS: PSS wetlands within the study area. They are generally associated with natural streams and are dominated by coyote willow (*Salix exigua*) and plains cottonwood (*Populus deltoides*). Understories contain cattails and Emory's sedge (*Carex emoryi*).
- Stormwater PEM: PEM wetlands associated with stormwater hydrology, including roadside swales and stormwater facilities within the study area. They are generally dominated by one or more of the following species: broadleaf cattail, inland saltgrass, and Fuller's teasel (*Dispsascus fullonum*).
- Upland Transition: The upland transition is typically dominated by a mixture of grasses and forbs, including: saltgrass, blue grama, western wheatgrass (*Pascopyrum smithii*), smooth brome (*Bromus inermis*), buffalograss, sand dropseed (*Sporobolus cryptandrus*), sideoats grama (*Bouteloua curtipendula*), and downy brome.

5.0 Impacts Assessment

Temporary and permanent impacts to land cover types within the study area were calculated by performing a GIS overlay analysis based on the limits of the conceptual design. Temporary impacts would result from staging and access for construction equipment and from construction itself, such as vegetation removal, earthmoving, grading activities, and general ground disturbance. Temporary impacts would occur throughout the study area from road widening and other road surface-related activities tying the existing roadway into the project. Permanent impacts would result from reconstructing and widening both directions to accommodate one additional travel lane, increasing to full-width (8-foot or greater) shoulders, and bridge construction. Because the vegetative impacts are based on the conceptual design, they represent an over-representation of what the actual permanent and temporary impacts would likely occur from the project.

Of the 443-acre study area, approximately 328.1 acres (74 percent of the study area) would be impacted by the project. Of the 328.1 acres, 317 acres are categorized as permanent impacts and 11.1 acres are temporary impacts. The estimated number of total impacts to disturbed and nonvegetated areas and nonporous areas (such as impervious surfaces and structures) that do not provide a habitat for wildlife would be approximately 149.6 acres, which accounts for 46 percent of the overall impacts. Avoidance, minimization, and mitigation measures related to vegetation impacts are summarized in Section 8 of this report.

5.1 No Action Alternative

The transportation projects that would occur under this alternative likely would have minor impacts to biological resources, but these impacts are undeterminable. Otherwise, existing vegetation and land cover generally would remain unchanged under the No Action Alternative.

5.2 Proposed Action

5.2.1 General Habitat

Temporary habitat impacts would result from construction staging, access for construction equipment, and construction itself. Permanent habitat impacts would result from widening the highway pavement, increasing shoulder width, adding permanent water quality features, and making multimodal improvements. Table 4 summarizes the temporary and permanent impacts by land cover type.

Table 4. Temporary and Permanent Impacts to Land Cover Types Identified in the Study Area

Land Cover Type	Permanent Impacts	Temporary Impacts	Combined Impacts
Barren land	62.7	2.0	64.7
Prairie, grassland, and natural ground cover	94.2	3.0	97.2
Impervious surface	144.1	5.0	149.1
Structures	0.1	0.4	0.5
Tree canopy	2.6	0.3	2.9
Turf and irrigated land	12.7	0.3	13.0
Water	0.6	0.1	0.7
Total	**317.0**	**11.1**	**328.1**

Source: DRCOG 2019

Approximately 95 percent of the combined impacts from the Proposed Action would be to the barren land; prairie, grassland, and natural ground cover; and impervious surface land cover types. Assuming the impervious surface and structures land cover types do not provide a general habitat to wildlife, the Proposed Action would permanently impact approximately 172.8 acres to land cover types that may offer a habitat. The permanent conversion of vegetation to impervious surfaces would reduce the number of general habitats present along I-270. Consequently, the project would further fragment and reduce the number of available general wildlife habitats adjacent to the I-270 corridor. However, because most impacts would occur within the CDOT ROW along a heavily trafficked transportation corridor in an urban setting, loss of highly used general habitats is expected to be minimal.

5.2.2 Noxious Weeds

As previously discussed, noxious weeds were observed throughout the study area. Noxious weeds threaten valuable wildlife habitats and natural resources, cause economic hardships to agricultural producers, and are a nuisance for recreational activities (CDA 2020a). Soil disturbance from construction equipment would create favorable conditions for noxious weeds to be introduced and established or to further spread. Section 8.0 includes mitigation and management measures for managing noxious weeds.

5.2.3 Migratory Birds

Because multiple migratory bird nests were identified during the survey underneath bridges and a potential nesting habitat is present, migratory birds are likely to nest in and near the study area. The MBTA protects migratory birds, their nests, and their eggs (except for pigeons, European starlings, and

certain other species). In Colorado, most nesting and rearing activities occur between April 1 and August 31, but some raptors may nest as early as January or February.

Because project construction is anticipated to span several years, including during the nesting season, direct impacts to raptors and migratory birds from project-related activities may occur. Specifically, construction during migratory birds' breeding or migration seasons could cause disturbances or displacement-related impacts to migratory bird nesting and/or migration near construction areas.

Direct impacts could include crushing active nests and removing nesting and foraging habitats during clearing and grubbing and other earthmoving activities. The Proposed Action is not expected to result in extensive habitat loss because construction mostly would occur within the previously disturbed CDOT ROW. Furthermore, because the project would widen an existing, high-volume transportation corridor, the additional lanes would be constructed in areas where nesting and foraging are unlikely. Consequently, permanent ground disturbances are not considered substantial enough to cause population declines of migratory birds. However, vehicle-bird collisions would likely rise as the wider highway would increase traffic volumes and speeds under the Proposed Action. Impacts to riparian habitats would be limited and, in general, very few shrubs or trees would be removed that provide nesting substrate or cover to a variety of migratory birds.

Indirect impacts on individual birds could occur from noise and light associated with construction; however, these indirect impacts will be temporary. With the implementation of mitigation measures described in Section 8.0 of this report, impacts on migratory birds, including raptors, will be minimized.

5.2.4 Colorado Special Status Species

Four Colorado special status species occur in, or have a suitable habitat in, the study area. Potential impacts and effects to these species are detailed in the following subsections.

Northern Leopard Frog

Project disturbance to wetlands would primarily occur to drainage swales and other low-functioning wetlands that do not generally provide a suitable habitat for northern leopard frogs. There would be approximately 1 acre of impacts (0.5 acre of permanent impact and 0.5 acre of temporary impact) to the preferred habitat, such as natural floodplain depressions and streambank/riparian wetlands. However, it is anticipated that the overall amount of wetland impacts would decrease as the design progresses and the impact areas are refined. Therefore, potential impacts to the northern leopard frog habitat is likely to occur, although these areas are largely degraded, and impacts would be mitigated through the Section 404 process.

Bald Eagle

Although no mapped habitat is located within the study area, bald eagles may occasionally forage along the Sand Creek, Clear Creek, and South Platte River. No direct impacts to bald eagles or their habitat are anticipated. While select tree removal would occur, no suitable nesting or roosting trees (for example, mature trees along waterways) would be removed. Construction activities are not likely to impact eagles because the project would occur within a highly developed, urbanized area with constant traffic and human activity. If eagles are present in the project vicinity, they would likely be acclimated to human activity. Because there is no regular bald eagle nesting or roosting within or near the study area, project-related impacts to the bald eagles are not expected to occur. Overall, post-construction habitat characteristics are expected to be similar to existing conditions, and it is unlikely the project would impact bald eagle usage, which is considered low. Table 5 lists measures to help avoid and minimize impacts to bald eagles.

Common Garter Snake

Project disturbance to wetlands and riparian areas would primarily occur to drainage swales and other low-functioning areas that do not generally provide a suitable habitat for common garter snakes.

Impacts to preferred habitat, such as natural floodplain depressions and streambank/riparian wetlands, would be minimal. Therefore, impacts to the common garter snake may occur but are considered unlikely and isolated in nature.

Black-tailed Prairie Dog

Direct impacts to black-tailed prairie dogs are expected to occur from the removal of the habitat and from the disturbance of active colonies located within the construction footprint. Temporary and permanent impacts would result from grading, paving, and other disturbances associated with construction. Based on the conceptual design, approximately 25 acres of active prairie dog colonies would be permanently lost while approximately 0.44 acre would be temporarily impacted. As project design progresses, impacts to black-tailed prairie dog colonies will be avoided and minimized, as outlined by CDOT policy (CDOT 2009). Consequently, the number of impacts to active black-tailed prairie dog colonies is expected to be reduced.

Per CDOT policy, the project will be designed and constructed to avoid and minimize impacts to prairie dog colonies greater than two acres. If impacts would still exceed two acres, relocation will be evaluated. If a relocation site cannot be located for towns larger than two acres, the prairie dogs will be captured and donated to raptor rehabilitation facilities or turned over to the USFWS for the black-footed ferret reintroduction program.

Western Burrowing Owl

Impacts to black-tailed prairie dog burrows have the potential to directly impact western burrowing owls. Ground disturbance within and adjacent to a suitable habitat would likely disrupt the species behavior and could lead to abandonment and reduce the habitat availability post-construction. To help avoid and minimize potential impacts to western burrowing owls, pre-construction surveys will be conducted in accordance with CDOT Standard Specification 240.

5.2.5 Federally Listed Threatened and Endangered Species

The Colorado Species Coarse Habitat Screen procedure was used to establish which species from the IPaC list may occur within the study area (provided in Appendix A). Based on the findings of the evaluation, no direct effects to federally listed threatened and endangered species are anticipated from the Proposed Action because of a lack of a suitable habitat.

The five species indicated by an asterisk in Section 4.3.4 could be indirectly impacted by water depletions to the South Platte River and its tributaries. This project will use water for concrete and dust control sourced from the South Platte River basin, which will cause water depletions. In order to address the effects that depletions to the South Platte River basin will have on federal ESA-listed species that depend on the river for their survival, CDOT, as a state agency, is participating in the South Platte Water Related Activities Program. FHWA is serving as the federal lead agency for the project, and the project has a federal nexus. In response to the need for formal consultation for the water used from the South Platte River basin, FHWA prepared a programmatic biological assessment, dated February 22, 2012, that estimates total water usage from 2012 until 2019. A letter dated March 29, 2019, extended the South Platte Water Related Activities Program coverages through 2033. The programmatic biological assessment addresses the five species. On April 4, 2012, the USFWS signed a Biological Opinion that concurs with this approach and requires a yearly reporting of water usage. Any water used for this project will be reported to the USFWS at the end of the year after the completion of the project, as per the aforementioned consultation. Effects to species not addressed in the programmatic biological assessment or affected by causes other than water depletions to the South Platte River will be analyzed separately.

5.2.6 Wetlands/Waters of the U.S.

Based on preliminary design concepts, permanent wetland impacts resulting from the Proposed Action are anticipated to be approximately 122,000 square feet (2.8 acres), while temporary impacts are anticipated to be approximately 22,700 square feet (0.53 acre). Permanent impacts to other waters are anticipated to be approximately 2,000 square feet (0.05 acre), with temporary impacts of approximately 55,000 square feet (1.26 acres). These impacts, which will be refined as project design progresses, are likely the result of grading needed to accommodate the widened highway, as well as related infrastructure such as bridges, culverts, utilities, and water quality ponds.

The following are potential impacts associated with SB40:

- Both bridges over the South Platte River would be replaced with a single structure that is approximately 50 feet wider than the existing bridges.
- Where Vasquez Boulevard crosses Sand Creek immediately south of the I-270 interchange, the existing bridge would be replaced with a new bridge widened approximately 14 feet to accommodate a southbound shoulder for the northbound Vasquez Boulevard to eastbound I-270 ramp and a new 8-foot-wide sidewalk along the eastern side.
- All disturbed areas above the ordinary high-water mark shall be revegetated with appropriate native plant species to provide bank stabilization, erosion control, and habitat replacement.

6.0 Mitigation Measures

This project will be designed to avoid and minimize impacts. Project biologists and engineers will work together to avoid and minimize impacts to wetlands and surface waters by reducing and refining the project footprint where possible. Proposed staging areas will also be situated to avoid impacting wetlands and surface waters. Impacts to other biological resources (for example, vegetation, noxious weeds, and black-tailed prairie dogs) will also be minimized through the refinement of the project footprint, thereby reducing temporary and permanent impacts.

Table 5 summarizes the mitigation measures that will be implemented for the Proposed Action. Refer to the Wetlands and Aquatic Resources Technical Report (in development) for mitigation measures for these resources.

Table 5. Mitigation

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
Construction activities and vegetation removal	Throughout the study area	Disruption and/or destruction of active migratory bird nests	Vegetation removal within the project limits will occur outside of the bird breeding season. If vegetation must be removed during the breeding season, a survey for active nests will be conducted within a project limit buffer, per CDOT Standard Specification 240 and the Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors (CPW 2020b). If necessary, no work will occur within these buffer areas, and they will be maintained and kept in working order until the nest is no longer active, as determined by the CDOT biologist. If an active nest is inadvertently taken during construction, the USFWS will be notified within 24 hours.	CDOT Engineering and Contractor	Pre-construction
Construction activities and vegetation removal	Throughout the study area	Ground disturbance, including temporary vegetation removal	As the project design is refined, project biologists and engineers will work together to avoid and minimize impacts related to the potential spread of noxious weeds. Before construction, a noxious weed inventory and mapping will be conducted within the study area, and an Integrated Weed Management Plan will be prepared and implemented.	CDOT Engineering and Contractor	Pre-construction
Construction activities and vegetation removal	Throughout the study area	Disruption and/or destruction of active black-tailed prairie dog colonies	During final design and construction, avoid and minimize impacts to prairie dog colonies greater than 2 acres in area to the extent practicable. Follow CDOT's Black-tailed Prairie Dog Policy to guide the relocation and capture of prairie dogs.	CDOT Engineering and Contractor	Pre-construction/ construction
Construction activities and vegetation removal	Throughout the study area	Disruption and/or destruction of active black-tailed prairie dog colonies	The area of black-tailed prairie dog towns that will be affected by the project will be calculated before construction (CDOT 2009).	CDOT Engineering and Contractor	Pre-construction/ construction
Construction activities and vegetation removal	Throughout the study area	Ground disturbance, including temporary vegetation removal	Reclaim disturbed ground with a seed mix composed of species appropriate to site conditions, as developed by the CDOT agronomist.	CDOT Engineering and Contractor	Post-construction
Construction activities and vegetation removal	Throughout the study area	Permanent riparian and wetland impacts	Plant riparian trees and shrubs in the wetland mitigation areas to replace any trees greater than 4 inches in diameter lost to construction.	CDOT Engineering and Contractor	Construction/post-construction
Water usage	Throughout the study area	ESA-listed species, South Platte River basin water depletions	Any water used for this project will be reported to the USFWS at the end of the year after the completion of the project, per the South Platte Water Related Activities Program.	CDOT Engineering and Contractor	Construction/post-construction

7.0 Required Permits

The following permits related to waters of the U.S. and/or actions may be required as part of the proposed project:

- Section 404 permit authorized by the Denver Regulatory Office of the USACE.

  A Section 404 permit will be required for this project. It is anticipated that a series of Nationwide Permits (NWPs) will be used to permit the proposed work, including but not limited to, NWP 14 for linear transportation projects and NWP 3 for the reconstruction of existing facilities. Each NWP will constitute a separate and complete action, per the USACE definition. The project is located within the USACE Omaha District. The districts must permit project activities within their respective jurisdictional boundaries. Coordination with USACE is ongoing. Next steps include completing a wetland findings report and a functional assessment of Colorado wetlands, per CDOT standard protocol.

- SB40 Wildlife Certification from CPW.

  SB40 Wildlife Certification will be required for this project. Next steps include refining waters, wetlands, and riparian permanent and temporary impacts.

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Appendix A
Statewide Impact Findings Table Coarse Habitat Evaluation Tool

Date: May 5, 2021

To: Eric Schmude

From: Dan Soucy

Subject: I-270 Corridor Improvements

Dear Eric Schmude,

I -270 is a 6-mile-long controlled-access interstate highway with two through lanes in each direction, providing a direct connection from I-25 to I-70 between the northern and eastern Denver metro communities. I-270 is a key link to the Denver International Airport and large business clusters from the energy, manufacturing, and freight distribution centers, and is a major truck corridor, providing access to adjacent industrial areas. Between I-25 and I-70, I-270 has partial interchanges at Interstate 76 (I-76), York Street, Vasquez Boulevard (Vasquez), and Quebec Street. The posted speed limit on the freeway is 55 mph. The highway crosses over both the UPRR and BNSF railroads, as well as the South Platte River, Clear Creek, Burlington Ditch, and parallels Sand Creek.

SWIFT Reporting Summary Memo

1. Project Name & Number:	I-270 Corridor Improvements 23198
2. Project Designer:	Jacobs Engineering; Doug Stremel, PE
3. Environmental Lead:	Jacobs Engineering; Patrick Hickey
4. Wildlife Professional:	Jacobs Engineering; Dan Soucy
5. Date of Submittal:	May 5, 2021

6. Project/Phase Description (*Include detailed narrative regarding portion of project that is being designed. Be sure to include information on whether this includes full buildout at this location. In other words, are further impacts to threatened and endangered species possible at this location?)*

The I-270 Corridor Improvements project would modernize the I-270 corridor and address the safety, reliability, and freight movement needs through a combination of roadway infrastructure and technology improvements. Along the corridor extending from the I-270/I-25/US-36 interchange to the I-270/I-70 interchange, the I-270 mainline would be reconstructed and widened in both directions to accommodate one additional travel lane, full width (8-foot or greater) shoulders, and a 4-foot buffer for a potential Express Lane operating option. Twelve-foot wide auxiliary lanes may also be placed in between interchanges to help accelerating and decelerating traffic. The existing grassy median, which varies from 5 to 25 feet where present, would be graded and paved to accommodate the roadway widening, however, widening to the outside of the existing pavement edge would also be required in some areas, requiring minor amounts of right-of-way for construction and operation of the improved interstate. Most of the I-270 bridge structures would be replaced with new bridges meeting vertical clearance requirements. The structures not being replaced have been constructed as more recent improvements to I-270 and are still within their expected service life.

The four interchanges within the corridor (not including I-270's interchange with I-25) would be modernized through construction of new on and off ramps that would increase the acceleration and deceleration lengths, increase turning radius and super-elevation (i.e., banking), and reduce the number of weave points between interstate traffic and local traffic accessing and entering I-270. Auxiliary lanes between the interchanges would further reduce weaving by separating interstate traffic from local traffic and providing more time for heavy trucks to accelerate to interstate speed before merging. The full cloverleaf interchange at I-270/Vasquez Blvd. would be replaced with a partial cloverleaf interchange design that improves safety and connectivity with the local roadway network.

The project would also improve multimodal travel and the local roadway network at York Street, 56th Avenue, and potentially at Holly Street. Where it ties into the I-270 eastbound onramp, York Street would be widened to accommodate an expanded roadway template, including addition travel lanes and a multi-use trail, as identified in the Adams County York Street Phase III Project. Additionally, 56th Avenue would be improved via widening, curve flattening, and sidewalk extension. Holly Street may also be extended approximately 1,200 feet south of its current terminus at 56th Avenue to a new, partial I-270 interchange providing on-and-off ramp movements to westbound I-270. To facilitate drainage of the widened interstate and protect the adjacent water courses, the project would include permanent water quality features such as sediment vaults, drop inlets, outfalls, and water quality ponds. Intelligent transportation system infrastructure would be installed to provide driver information and equip the roadway to leverage current and future technology, such as variable message signs that provide drivers with accident and roadway condition information. The express lane operating option also includes tolling-related technology and signage that is not required for the general-purpose lane operating option.	
7. IPaC Listed Species in Project/Phase Study Area:	Piping plover (*Charadrius melodus*) Whooping crane (*Grus americana*) Pallid Sturgeon (*Scaphirhynchus albus*) Ute ladies'-tresses orchid (*Spiranthes diluvialis*) Western prairie fringed orchid (Platanthera praeclara)
8. Species Evaluated in Step 4:	None
9. Minimization Measures Recommended and Implemented:	
10. Minimization Measures Recommended but not Implemented and the reason for not implementing:	

Please attach: Completed Species Coarse Habitat Evaluation and Relevant SWIFT Tables

SPECIES COARSE HABITAT SCREEN

Form to assist in completing the Threatened & Endangered Species Evaluation Procedures Guide Sheet and Determining the Potential Effect

The following questions identify the potential for suitable habitat within the Project Area, or if the project is within the range of a federally listed species.

Project Name: I-270 Corridor Improvements

Project No.: STU 2706-043

SA Code.: 23198

County: Adams

Limits of Work

Highway: I-270

Start: Mile Marker 0.0

End: Mile Marker 6.0

Total Length: 6.0

Biologist Completing Assessment: Dan Soucy - Jacobs

Resident Engineer: Adam Parks, P.E.

Project Description: I-270 is a 6-mile-long controlled-access interstate highway with two through lanes in each direction, providing a direct connection from I-25 to I-70 between the northern and eastern Denver metro communities. I-270 is a key link to the Denver International Airport and large business clusters from the energy, manufacturing, and freight distribution centers, and is a major truck corridor, providing access to adjacent industrial areas. Between I-25 and I-70, I-270 has partial interchanges at Interstate 76 (I-76), York Street, Vasquez Boulevard (Vasquez), and Quebec Street. The posted speed limit on the freeway is 55 mph. The highway crosses over both the UPRR and BNSF railroads, as well as the South Platte River, Clear Creek, Burlington Ditch, and parallels Sand Creek.

Project Footprint: The project footprint is defined as the area between the project beginning and end points, from right-of-way to right-of-way, as marked in the construction plans, including temporary construction easements, detours, and any designated waste, staging, stockpile, or material sites. In general, temporary habitat impacts would result from staging and access for construction equipment as well as construction itself. Permanent habitat impacts would result from widening of the pavement and increasing shoulder width.

Project Area: The project study area includes the area that would be directly impacted from the proposed construction activities. Noise and visual impacts associated with construction activities could extend approximately 500 to 1,000 feet beyond the work areas depending on the topography where the work is being conducted. These impacts would likely not extend much beyond this distance due to the type of work that is proposed along the corridor. Additionally,

species that do happen to occur in vicinity of the roadway would likely be acclimated to increased noise levels resulting from vehicular traffic along the project. The total size of the project area is approximately 443 acres, of which 43 percent consists of areas that are categorized as impervious surface or structures and do not provide habitat.

Project Area Habitat Description: The entire length of the project area is located within an already disturbed, heavily used transportation corridor. Overall, natural habitat is lacking, and the project area is dominated by invasive or noxious vegetation. Sand Creek flows northwest along the western side of I-270 before emptying into the South Platte River in the northern portion of the project area. Much of Sand Creek is heavily incised with steep, unstable banks, created from channelization and heavy storm water influxes. As such, associated floodplains are deficient. Clear Creek flows northeast under I-270 at the northern terminus of the project area before intersecting with the South Platte River. Clear Creek is not as incised as Sand Creek and has more gravel sand bars and floodplain benches. Outside of the waterways, most of the land use directly adjacent to the project area is heavily developed and urbanized.

COLORADO FEDERALLY LISTED SPECIES

FC- Federal Candidate
FE- Federally Endangered
FT- Federally Threatened
FPE- Federal Proposed Endangered
FPT- Federal Proposed Threatened
SC- State Candidate
SE- State Endangered
ST- State Threatened

SPECIES	STATUS	SPECIES	STATUS
FISH		**BIRDS**	
Bonytail chub (*Gila elegans*)	FE, SE	Mexican Spotted Owl (*Strix occidentalis lucida*)	FT, ST
Colorado pikeminnow (*Ptychocheilus lucius*)	FE, ST	Piping Plover (*Charadrius melodus*)*	FT, ST
Greenback cutthroat trout (*Oncorhynchus clarki stomias*)	FT, ST	Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	FE, SE
Humpback chub (*Gila cypha*)	FE, ST	Whooping Crane (*Grus americana*)*	FE, SE
Pallid sturgeon* (*Scaphirhynchus albus*)	FE	Yellow-billed Cuckoo (*Coccyzus americanus*)	FT, SC
Least Tern (Interior Population)* (*Sterna antillarum*)	FE, SE		
Razorback sucker (*Xyrauchen texanus*)	FE, SE		
MAMMALS		**INSECTS**	
Black-footed ferret (*Mustela nigripes*)	FE, SE	Arapahoe snowfly (*Capnia arapahoe*)	FC
Canada lynx (*Lynx canadensis*)	FT, SE	Pawnee montane skipper (*Hesperia lonardus Montana*)	FT
New Mexico meadow jumping mouse (*Zapus hudsonius luteus*)	FE	Uncompahgre fritillary butterfly (*Boloria acrocnema*)	FE
Preble's meadow jumping mouse (*Zapus hudsonius preblei*)	FT, ST		
Wolverine (*Gulo luscus)*	FPT, SE		

SPECIES	STATUS	SPECIES	STATUS
PLANTS			
Clay-loving wild buckwheat (*Eriogonum pelinophilum*)	FE	Mesa Verde cactus (*Sclerocactus mesae-verdae*)	FT
Colorado butterfly plant (*Oenothera coloradensis*)	FT	North Park phacelia (*Phacelia formosula*)	FE
Colorado hookless cactus (*Sclerocactus glaucus*)	FT	Pagosa skyrocket (*Ipomopsis polyantha)*	FE
DeBeque phacelia (*Phacelia submutica*)	FT	Parachute beardtongue (*Penstemon debilis)*	FT
Dudley Bluffs bladderpod (*Physaria congesta*)	FT	Penland alpine fen mustard (*Eutrema penlandii*)	FT
Dudley Bluffs twinpod (*Physaria obcordata*)	FT	Chapin Mesa milkvetch (*Astragalus schmolliae*)	FC
Knowlton's cactus (*Pediocactus knowltonii*)	FE	Skiff milkvetch (*Astragalus microcymbus*)	FC
Kremmling Osterhout milkvetch (*Astragalus osterhoutii*)	FE	Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	FT
Kremmling beardtongue [Mosquito Range mustard] (*Penstemon penlandii)*	FE	Western prairie-fringed orchid* (*Platanthera praeclara*)	FT
Mancos milkvetch (*Astragalus humillimus*)	FE		

* = South Platte River Downstream Depletion Species

Sources for Species Information: http://www.fws.gov/endangered/species/
http://wildlife.state.co.us/WildlifeSpecies/Profiles/Pages/WildlifeProfiles.aspx

STEP 1

Step 1 of the process is to collect species information from the USFWS Information, Planning, and Conservation System (IPaC) site.

> Navigate to the USFWS IPaC Website: http://ecos.fws.gov/ipac/ to determine if any listed, proposed or candidate species may be present in the Project Area. Following the directions in IPaC, use the initial project scoping tool to generate a species list by selecting the map tool and drawing the delineated Project Area. After selecting the appropriate project type, click on the Official Species List. The Official Species List will include all species that may occur in the vicinity of the Project Area and includes a map of the action area. IPaC will also generate a list of National Wildlife Refuges in the vicinity of your Project Area. Save a copy and print the PDF version of this Official Species List and add it to your project review package. It is important that you do not use the state/county list tool for this review since it will list **all** species that may occur in that county(ies) and will not provide site specific information. After completing the steps in IPaC, exit that website and continue to **Step 1(A) or 1(B)**.

(A) If the Official Species List species list indicates that there are no listed, proposed or candidate species found in the Project Area, fill out the species checklist and continue to **Step 2**. Until the proposed project is implemented, check IPaC every 90 days to ensure that listed, proposed or candidate species information for the Project Area is current. If any changes to the species list occur, you must complete this process for the newly identified species.

(B) If the Official Species List indicates that listed, proposed or candidate species may be present in the Project Area, fill out the species checklist and continue to **Step 2**.

STEP 2

Step 2 of the process is to check if a specific project is in a species' range. Range maps are provided for all species. Some range information is already integrated into the IPaC. Professional judgment by a biologist will be necessary when a project falls on the edge of or adjacent to a species range.

Determine whether the Project Area is within the range of listed/proposed/candidate species.

SPECIES CHECKLIST and RANGE/OCCURRENCE EVALUATION (STEP 1 and STEP 2)

SPECIES	Step 1: Species Checklist Is the species on the IPaC list obtained for the project?	Step 2: Range and Occurrence Evaluation Will the project occur in the estimated range for this species?
FISH		
Bonytail chub	☐ Yes ☒ No	☐ Yes ☒ No
Colorado pikeminnow	☐ Yes ☒ No	☐ Yes ☒ No
Greenback cutthroat trout	☐ Yes ☒ No	☐ Yes ☒ No
Humpback chub	☐ Yes ☒ No	☐ Yes ☒ No
Pallid sturgeon*	☒ Yes ☐ No	☐ Yes ☒ No
Razorback sucker	☐ Yes ☒ No	☐ Yes ☒ No
MAMMALS		
Black-footed ferret	☐ Yes ☒ No	☐ Yes ☒ No
Canada lynx	☐ Yes ☒ No	☐ Yes ☒ No
New Mexico meadow jumping mouse	☐ Yes ☒ No	☐ Yes ☒ No
Preble's meadow jumping mouse	☐ Yes ☒ No	☐ Yes ☒ No
Wolverine	☐ Yes ☒ No	☐ Yes ☒ No
BIRDS		
Least Tern*	☐ Yes ☒ No	☐ Yes ☒ No
Mexican Spotted Owl	☐ Yes ☒ No	☐ Yes ☒ No
Piping Plover*	☒ Yes ☐ No	☐ Yes ☒ No
Southwestern Willow Flycatcher	☐ Yes ☒ No	☐ Yes ☒ No
Whooping Crane*	☒ Yes ☐ No	☐ Yes ☒ No
Yellow-billed Cuckoo	☐ Yes ☒ No	☐ Yes ☒ No
PLANTS		
Chapin Mesa milkvetch	☐ Yes ☒ No	☐ Yes ☒ No
Clay-loving wild buckwheat	☐ Yes ☒ No	☐ Yes ☒ No
Colorado butterfly plant	☐ Yes ☒ No	☐ Yes ☒ No
Colorado hookless cactus	☐ Yes ☒ No	☐ Yes ☒ No
DeBeque phacelia	☐ Yes ☒ No	☐ Yes ☒ No
Dudley Bluffs bladderpod	☐ Yes ☒ No	☐ Yes ☒ No
Dudley Bluffs twinpod	☐ Yes ☒ No	☐ Yes ☒ No
Knowlton's cactus	☐ Yes ☒ No	☐ Yes ☒ No
Kremmling Osterhout milkvetch	☐ Yes ☒ No	☐ Yes ☒ No

SPECIES	Step 1: Species Checklist Is the species on the IPaC list obtained for the project?	Step 2: Range and Occurrence Evaluation Will the project occur in the estimated range for this species?
Kremmling beardtongue	☐ Yes ☒ No	☐ Yes ☒ No
Mancos milkvetch	☐ Yes ☒ No	☐ Yes ☒ No
Mesa Verde cactus	☐ Yes ☒ No	☐ Yes ☒ No
North Park phacelia	☐ Yes ☒ No	☐ Yes ☒ No
Pagosa skyrocket	☐ Yes ☒ No	☐ Yes ☒ No
Parachute beardtongue	☐ Yes ☒ No	☐ Yes ☒ No
Penland alpine fen mustard (Mosquito Range mustard)	☐ Yes ☒ No	☐ Yes ☒ No
Skiff milkvetch	☐ Yes ☒ No	☐ Yes ☒ No
Ute ladies'-tresses orchid	☒ Yes ☐ No	☒ Yes ☐ No
Western prairie-fringed orchid*	☒ Yes ☐ No	☐ Yes ☒ No
INSECTS		
Arapahoe snowfly	☐ Yes ☒ No	☐ Yes ☒ No
Pawnee montane skipper	☐ Yes ☒ No	☐ Yes ☒ No
Uncompahgre fritillary butterfly	☐ Yes ☒ No	☐ Yes ☒ No

* = South Platte River Downstream Depletion Species

If the species is not identified in either column, then there is a "no effect" to the species from action. If any "yes" boxes are checked in both columns, proceed to Step 3.

STEP 3: COARSE-LEVEL HABITAT EVALUATION

Step 3 involves completing a coarse-level habitat screen to determine whether listed/candidate/proposed species may occur based on the habitat present within the Project Area for each species checked above in the checklist table. To complete the evaluation, a site visit is required, in addition to reviewing the species information provided in IPaC, the species life history fact sheets, and any other available sources of information (e.g., previous biological assessments conducted in the area). The coarse-level habitat evaluation must be conducted by a qualified biologist. If you have a previous evaluation of your site, this is valid only for a certain time period (typically one year). If your existing evaluation is no longer valid or the evaluation does not cover the entire Project Area, a new coarse-level evaluation is required.

For each species checked above, complete the Yes/No questions to assist in scoping for the potential affects to the listed species. All the questions associated with a species need to be evaluated individually to determine Yes/No applicability (see below).

If ALL answers are "No" for the species or critical habitat below, then there is a "No Effect" to that particular species or critical habitat.

If ANY answer is "Yes" on this Habitat Evaluation worksheet, then carry the "Yes" species forward and proceed to the Step 4 – Federal or State Species Matrix for further effects guidance

SPECIES			
FISH			
Bonytail chub			
	Does the project have the potential to affect any streams or rivers within the Project Area which contain these habitat characteristics? • Large, fast-flowing waterways • Pools and eddies	Yes ☐	No ☐
Colorado pikeminnow			
	Does the project have the potential to affect any streams or rivers within the Project Area which contain these characteristics? • Swift flowing • Quiet, warm backwaters	Yes ☐	No ☐
Greenback cutthroat trout			
	Does the project have the potential to affect any mountain lakes or streams within the Project Area which contain these characteristics? • Protective cover and low velocity flow, as in side channels and small tributaries (juveniles) • Riffles with clean gravel (spawning) • Deep water with low velocity flow (winter) • Clear, cool water (adult)	Yes ☐	No ☐
Humpback chub			
	Does the project have the potential to affect any streams or rivers within the Project Area which contain these characteristics? • Deep, fast-moving, turbid waters	Yes ☐	No ☐

Razorback sucker			
	Does the project have the potential to affect any streams, reservoirs or rivers within the Project Area which contain these habitat characteristics? • Deep, clear to turbid waters (rivers) • Mud, sand or gravel substrate (reservoirs) • Areas of deep eddies and backwaters • Floodplain wetlands	Yes ☐	No ☐
MAMMALS			
Black-footed ferret			
	Does the Project Area contain shortgrass and midgrass prairie or semidesert shrublands which may potentially be affected? -AND- Is NOT within the USFWS Block Clearance Area?	Yes ☐	No ☐
Canada lynx			
	Does the Project Area contain any of these habitat characteristics which may potentially be affected? • Dense boreal/subalpine forest • Willow-choked corridors along mountain streams —OR— Is the Project Area located within ½ mile of a USFS/BLM recognized travel corridor?	Yes ☐	No ☐
New Mexico meadow jumping mouse			
	Does the project have the potential to affect riparian communities containing: • persistent emergent herbaceous wetlands; or • scrub-shrub wetlands?	Yes ☐	No ☐
Preble's meadow jumping mouse (PMJM)			
	Is the Project Area located in a PMJM block clearance zone for the *Denver metropolitan area, Colorado Springs, Cottonwood Creek, or Sand Creek*? **If the answer to this question is yes, no additional assessment is needed.**	Yes ☐	No ☐
	Is the Project Area located within ½ mile of the federally designated critical habitat for the PMJM (see critical habitat mapping)? —OR— Does the project have the potential to affect areas containing: • Heavily vegetated, shrub dominated riparian habitats and/or adjacent grassland/grassy aspen forests	Yes ☐ ☐	No ☐ ☐
Wolverine			
	Does the project have the potential to affect boreal/alpine forests where deep snow is present most of the year?	Yes ☐	No ☐

BIRDS			
Mexican Spotted Owl			
	Is the Project Area located within ½ mile of the federally designated Protected Activity Centers (PACs) for the Mexican Spotted Owl (see critical habitat mapping)? —OR— Does the project have the potential to impact areas containing: • Steep canyons with dense stands of large ponderosa pine or pinyon-juniper with Douglas-fir, and in mature to old-growth mixed-conifer forest with high canopy closure and open understory o Multi-storied stands, with snags and downed logs	Yes ☐	No ☐
Southwestern Willow flycatcher (critical habitat)			
	Does the project have the potential to impact any dense understory tree and well-developed shrub riparian habitats?	Yes ☐	No ☐
Yellow-billed Cuckoo (critical habitat)			
	Does the project have the potential to affect any of these habitat characteristics? • Open woodlands with an understory of dense vegetation, especially near water (nesting habitat) • Well-wooded river valleys and associated deciduous forests (nesting habitat)	Yes ☐	No ☐
PLANTS			
Clay-loving wild buckwheat (critical habitat)			
	Is the Project Area located within ½ mile of the federally designated critical habitat for the clay-loving wild buckwheat? -OR- Does the project have the potential to affect any areas containing rolling clay (adobe) hills and flats immediately adjacent to the communities of Delta and Montrose, between 5,180 – 6,350 feet in elevation?	Yes ☐	No ☐
Colorado butterfly plant (critical habitat)			
	Is the Project Area located within ½ mile of the federally designated critical habitat for the Colorado butterfly plant?	Yes ☐	No ☐
Colorado butterfly plant			
	Is the Project Area located in the block clearance zone for the *Denver metropolitan* area? **If the answer to this question is yes, no additional assessment is needed.**	Yes ☐	No ☐
	Does the project have the potential to affect any of these habitat characteristics? • Wetland habitats along a meandering stream channel • Open habitat that is not substantially overgrown by other vegetation	Yes ☐	No ☐

Colorado hookless cactus			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Alluvial benches along the Colorado or Gunnison Rivers and their tributaries • Gravelly or rocky surfaces on river terrace deposits and lower mesa slopes	Yes ☐	No ☐
DeBeque phacelia (proposed)			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Expansive clay soils on moderately steep slopes, benches, and ridge tops adjacent to valley floors of the southern Piceance Basin in Mesa and Garfield Counties	Yes ☐	No ☐
Dudley Bluffs bladderpod			
	Does the project have the potential to affect any barren white outcrops exposed along drainages by erosion from downcutting of streams in the Piceance Basin?	Yes ☐	No ☐
Dudley Bluffs twinpod			
	Does the project have the potential to affect any barren white outcrops exposed along drainages by erosion from downcutting of streams in the Piceance Basin?	Yes ☐	No ☐
Knowlton's cactus			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Pinyon-juniper woodlands at 5,900 to 6,500 feet elevation • Tertiary alluvial deposits that have formed gravelly, dark, sandy loams on slopes or hills with pinyon-juniper or sagebrush	Yes ☐	No ☐
Kremmling Osterhout milkvetch			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Located in the desert badlands in Middle Park • Moderate slopes of the Niobrara, Pierre or Troublesome Formations • Shale and siltstone barrens in high elevation sagebrush habitat	Yes ☐	No ☐
Kremmling beardtongue			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Alkaline clay-shale containing selenium • Runoff channels, shaded by deeply cut banks, sparsely covered with sagebrush • Elevation range from 7,500 to 7,700 feet	Yes ☐	No ☐
Mancos milkvetch			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Sandstone of Cretaceous origin in the Mesa Verde series • Sandstone ledges or mesa tops • Elevation range of 5,500 to 5,850 feet	Yes ☐	No ☐

Mesa Verde cactus			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Dry, low exposed clay hills and mesas in full sun of Mancos or Fruitland shales in the desert • Elevation ranging from 4,000 to 5,000 feet	Yes ☐	No ☐
North Park phacelia			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Barren, raw exposures of the Coalmont Formation, a rusty-colored sandy substrate • Elevation ranging from 8,000 to 8,500 feet	Yes ☐	No ☐
Pagosa skyrocket			
	Does the project have the potential to affect any weathered Mancos Shale outcrops at about 7,000 feet elevation in the vicinity of Pagosa Springs in southwestern Colorado? —OR— Does the Project Area contain open Ponderosa Pine woodlands or Ponderosa Pine-Juniper woodlands?	Yes ☐	No ☐
Parachute beardtongue			
	Does the project have the potential to affect any areas containing oil shale outcrops on the Roan Plateau escarpment in Garfield County, Colorado? —OR— Does the project have the potential to affect any areas that lie along the Parachute Creek Member of the Green River Formation?	Yes ☐	No ☐
Penland alpine fen mustard (Mosquito Range mustard)			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Constantly moist areas dominated by moss species (fens) • Alpine tundra above 12,100 feet elevation and downslope from snowfields • Limestone substrates • Mosquito Range at elevations ranging from 11,900 to 13,280 feet	Yes ☐	No ☐
Chapin Mesa milkvetch			
	Does the project have the potential to affect any areas located in Mesa Verde National Park or the Ute Mountain Ute Tribal Park? -OR- Does the project have the potential to affect any areas containing these habitat characteristics? • Dense pinyon-juniper woodland atop a mesa • Deep, reddish –colored loess soils • Elevation range from 6,500 to 7,500 feet	Yes ☐	No ☐

Skiff milkvetch			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Open sagebrush or juniper-sagebrush community on steep to moderate slope • Rocky area with clay to cobble soils, gray to reddish in color • Elevation range from 7,600 to 8,400 feet	Yes ☐	No ☐
Ute ladies'-tresses orchid			
	Is the Project Area located in the block clearance zone for the *Denver metropolitan* area? **If the answer to this question is yes, no additional assessment is needed.**	Yes ☐	No ☒
	Does the project have the potential to affect any areas containing these habitat characteristics? • Riparian areas along perennial streams • Gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams • Wetland and seepy areas near freshwater lakes or springs	Yes ☐	No ☒
INSECTS			
Arapahoe snowfly			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Cold, clean, well-oxygenated streams or tributaries of the Cache la Poudre River **If the answer to this question is yes, consultation with the USFWS is required.**	Yes ☐	No ☐
Pawnee montane skipper			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Dry, open ponderosa pine woodlands with sparse understory • Elevation range between 6,000 and 7,500 feet • Moderately steep slopes and soils derived from Pikes Peak Granite • Blue Grama grass & Prairie Gayfeather **If the answer to this question is yes, consultation with the USFWS is required.**	Yes ☐	No ☐
Uncompahgre fritillary butterfly			
	Does the project have the potential to affect any areas containing these habitat characteristics? • Large patches of snow willow above 12,400 feet • Northeast-facing slopes **If the answer to this question is yes, consultation with the USFWS is required.**	Yes ☐	No ☐

Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.
Pallid sturgeon
Least Tern (Interior Population)
Piping Plover
Whooping Crane
Western prairie fringed orchid
Please include the following language in the assessment to address downstream depletions in the South Platte River basin: To address the effects this depletion will have on federally listed species downstream that depend on the river for their survival, CDOT, as a state agency, is participating in the South Platte Water Related Activities Program (SPWRAP). CDOT is cooperating with the Federal Highway Administration (FHWA) which provides a federal nexus for the project. In response to the need for formal consultation for the water used from the South Platte basin, FHWA has prepared a Programmatic Biological Assessment (PBA) dated 02/22/2012 that estimates total water usage until 2019. The PBA addresses the following species: Least Tern (interior population) (*Sternula antillarum),* pallid sturgeon (*Scaphirhynchus albus)*, Piping Plover (*Charadrius melodus)*, western prairie fringed orchid (*Platanthera praeclara)*, and the Whooping Crane (*Grus americana)*. On 04/04/2012, the USFWS signed a Biological Opinion which concurs with this approach and requires a yearly reporting of water usage. The water used for this project will be reported to the USFWS at the year's end after the completion of the project as per the aforementioned consultation. Effects to species not addressed in the PBA or affected by causes other than water depletions to the South Platte, will be analyzed separately.
Water depletions in the Upper Colorado River and San Juan River Basins, may affect the species and/or critical habitat in downstream reaches in other states.
Bonytail chub – no known populations in Colorado (CPW)
Colorado pikeminnow
Humpback chub
Razorback sucker

If ALL answers are "No" for the species or critical habitat, then there is a "No Effect" to that particular species or critical habitat. Document the results of your site visit, what source(s) of information you consulted, and why you reached that conclusion in the letter summary memorandum. Add this documentation to your project review package.

If ANY answer is "Yes" on the Habitat Evaluation worksheet, then carry the "Yes" species forward and proceed to the *Step 4 – Federal Species Matrix* for further effects guidance.

Additional Questions:
For species with a "Yes" answer on the Habitat Evaluation worksheet - Has a survey, Natural Heritage Database, or other source identified an occurrence within 1.0 mile of the project, since the year 1975? ☐ Yes ☒ No

If yes, indirect effects and cumulative effects of the activity will need to be analyzed and documented. The indirect and cumulative effects analysis will be attached to this document. Direct effects are impacts resulting from the proposed action at the same time and in the same place as the action. Indirect effects may include but are not limited to those effects that are caused by or will result from the proposed action later in time, but are still reasonably certain to occur [50 CFR §402.02]. Cumulative effects are the effects of future State, tribal or private activities (non-Federal activities), that are reasonably certain to occur within the action area of the Federal action subject to consultation [50 CFR §402.02]. If any indirect or cumulative effects are identified that are not captured elsewhere in the Matrix, then May Affect, Likely to Adversely Affect.

Is your project located on Colorado's Eastern Plains within the area defined by the Colorado Shortgrass Prairie Initiative? If yes, please review the Colorado Shortgrass Prairie Initiative summary and guidelines (http://www.coloradodot.info/programs/environmental/wildlife/guidelines/shortgrass-prairie-ba-and-conservation-strategy/view) .

STEP 4

Step 4 involves filling out the species-specific Statewide Impact Finding Tables (SWIFT). Step 4 is only completed for species identified in Step 3 as potentially being present in the Project Area.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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In Reply Refer To: May 05, 2021
Consultation Code: 06E24000-2020-SLI-1417
Event Code: 06E24000-2021-E-02097
Project Name: I-270

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Colorado Ecological Services Field Office
Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486
(303) 236-4773

Project Summary

Consultation Code: 06E24000-2020-SLI-1417
Event Code: 06E24000-2021-E-02097
Project Name: I-270
Project Type: TRANSPORTATION
Project Description: Highway expansion project along I-270
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.80437708340997,-104.93732879078875,14z

Counties: Adams and Denver counties, Colorado

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 4 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Piping Plover *Charadrius melodus*	Threatened

Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.
There is **final** critical habitat for this species. The location of the critical habitat is not available.
This species only needs to be considered under the following conditions:

- Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska.

Species profile: https://ecos.fws.gov/ecp/species/6039

Whooping Crane *Grus americana*	Endangered

Population: Wherever found, except where listed as an experimental population
There is **final** critical habitat for this species. The location of the critical habitat is not available.
This species only needs to be considered under the following conditions:

- Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska.

Species profile: https://ecos.fws.gov/ecp/species/758

Fishes

NAME	STATUS
Pallid Sturgeon *Scaphirhynchus albus*	Endangered

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska.

Species profile: https://ecos.fws.gov/ecp/species/7162

Flowering Plants

NAME	STATUS
Ute Ladies'-tresses *Spiranthes diluvialis*	Threatened

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/2159

Western Prairie Fringed Orchid *Platanthera praeclara*	Threatened

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Project includes water-related activities and/or use in the N. Platte, S. Platte, and Laramie River Basins which may affect listed species in Nebraska.

Species profile: https://ecos.fws.gov/ecp/species/1669

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Jul 31
Lark Bunting *Calamospiza melanocorys* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 10 to Aug 15

NAME	BREEDING SEASON
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

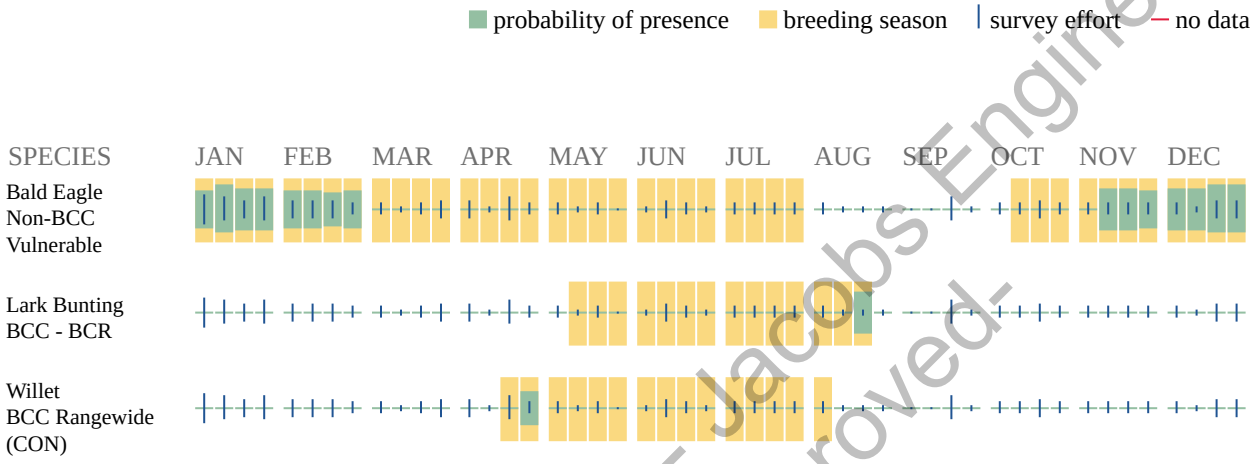
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell

me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

LAKE

- L1UBHx

FRESHWATER POND

- PABF
- PABFx
- PABG
- PABGx
- PUBFx
- PUBG
- PUBGx
- PUSC

FRESHWATER EMERGENT WETLAND

- PEM1A
- PEM1C
- PEM1F

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A
- PSS1C

RIVERINE

- R2UBF
- R2UBGx
- R2UBH
- R2USA
- R2USC
- R2UBG