



Biological Resources Technical Report

I-270 Corridor Improvements Environmental Impact Statement

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Acronyms and Abbreviations

Acronym	Definition
BNSF	BNSF Railway
CDA	Colorado Department of Agriculture
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CODEX	Colorado's Conservation Data Explorer
Commerce City	City of Commerce City
CNHP	Colorado Natural Heritage Program
CPW	Colorado Parks and Wildlife
CWA	Clean Water Act
DRCOG	Denver Regional Council of Governments
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
GIS	geographic information system
GPS	global positioning system
I-25	Interstate 25
I-270	Interstate 270
I-70	Interstate 70
I-76	Interstate 76
IPaC	Information Planning and Conservation
ITS	intelligent transportation systems
MBTA	Migratory Bird Treaty Act
mph	miles per hour
NEPA	National Environmental Policy Act
NRCS	National Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
PEM	palustrine emergent
PSS	palustrine scrub-shrub
RTD	Regional Transportation District
ROW	right(s)-of-way
SB40	Senate Bill 40
SGPI	Shortgrass Prairie Initiative
SWIFT	Statewide Impact Findings Table
SWMP	Stormwater Management Plan

Acronym	Definition
TNC	The Nature Conservancy
ULTO	Ute ladies' -tresses orchid
UPRR	Union Pacific Railroad
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOTUS	Waters of the U.S.

1.0 Introduction

The Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) are preparing an Environmental Impact Statement (EIS) to evaluate potential improvements to the Interstate 270 (I-270) corridor. FHWA and CDOT are the lead agencies for this National Environmental Policy Act (NEPA) process, which was initiated in 2020, initially anticipating an Environmental Assessment. Moving into 2023, CDOT determined a more detailed environmental review was needed and requested that an EIS be prepared.

This technical report evaluates and documents potential impacts to and recommended mitigation measures for biological resources. It supports the analysis and conclusions in the EIS.

1.1 Project Description

I-270 in Colorado is a controlled-access interstate highway with two through lanes in each direction between Interstate 25 (I-25) and Interstate 70 (I-70) in central Denver and Commerce City (Figure 1). It has a posted speed limit of 55 miles per hour (mph). The project limits include the I-270 interchanges with Interstate 76 (I-76), York Street, Vasquez Boulevard, and Quebec Street. The project will tie into the I-25 and I-70 system interchanges, but improvements to these interchanges are part of projects on I-25 and I-70 and will be designed and approved separately.

The purpose of the I-270 Corridor Improvements Project is to implement transportation solutions that modernize the I-270 Corridor to accommodate existing and forecasted transportation demands. The project needs are:

- Traveler safety on the corridor,
- Travel time and reliability on the corridor,
- Transit on the corridor,
- Bicycle and pedestrian connectivity across I-270, and
- Freight operations on the corridor.

In addition to addressing project needs, CDOT, FHWA, and Cooperating and Participating Agencies have established a key project goal: to minimize environmental and community impacts resulting from the project.

Figure 1. I-270 Corridor Improvements Project Limits and Project Footprint



2.0 Alternatives

CDOT developed a range of potential alternatives for I-270 improvements. The alternatives ranged from no improvements to minimal infrastructure improvements without added highway capacity to alternatives that added one or two travel lanes in each direction, which could be operated as transit, general-purpose, or Express Lanes.

A two-level alternatives evaluation process was used to screen the alternatives based on the project's purpose and need and goal, and two build alternatives were carried forward for detailed analysis in the EIS:

- Three General-Purpose Lanes Alternative
- Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative

The No Action Alternative is also fully evaluated as a baseline for comparison.

Additional information on the alternatives development and evaluation process is included in the Alternatives Development Technical Report.

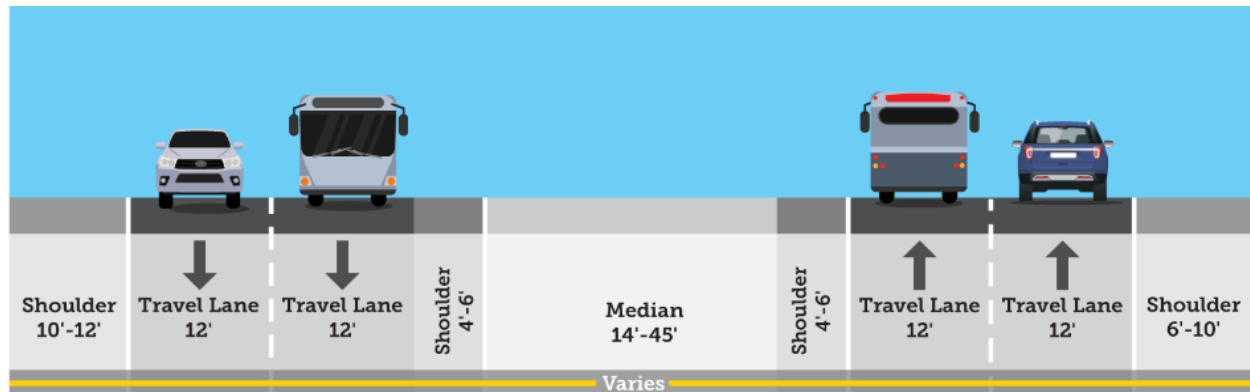
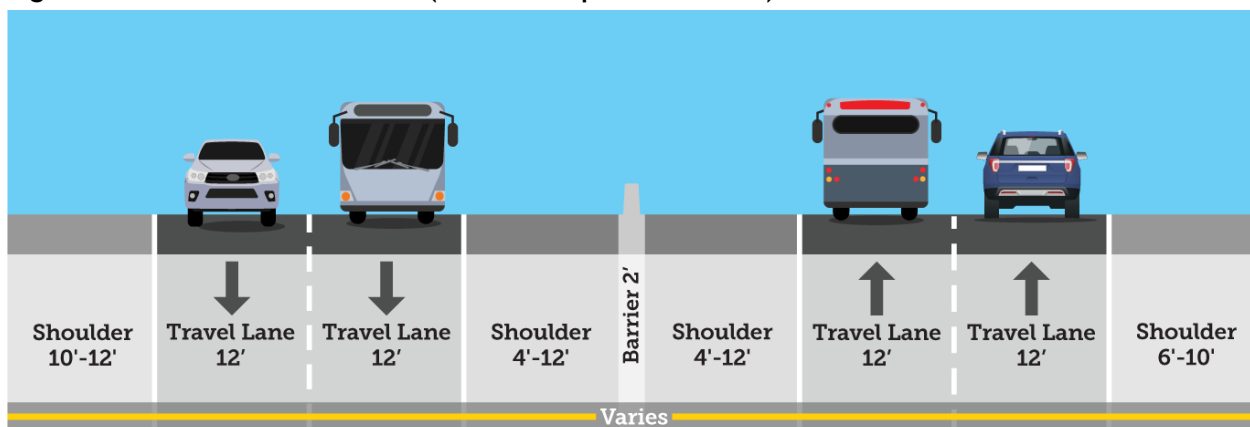
2.1 No Action Alternative

The No Action Alternative evaluates operations of I-270 if a build alternative would not occur along the corridor. It does not address the project Purpose and Need but is carried forward as a baseline for comparison. This alternative would maintain the existing highway configuration of two general-purpose travel lanes in each direction. Bridges and pavement would be maintained and repaired continuously, but underlying infrastructure deficiencies would remain.

The No Action Alternative would include substantial ongoing maintenance and the rehabilitation of 19 existing structures, including seven locations that have structures that are or will be reaching the end of their useful life. The age of the structure, recent bridge inspections, and current ongoing maintenance costs, both planned and emergency maintenance, determine if a structure is or will be reaching the end of its useful life. The seven structure locations along the I-270 corridor that are or will be reaching the end of their useful life are as follows:

- Vasquez Bridge over Sand Creek (E-17-AT)
- York Street Bridge over I-270 (E-17-IC)
- I-270 over South Platte River Eastbound and Westbound Bridges (E-17-IE & E-17-ID)
- I-270 over Burlington Ditch Eastbound and Westbound Bridges (E-17-IG & I-17-IF)
- I-270 over Brighton Boulevard, Union Pacific Railroad (UPRR) and BNSF Railway (BNSF) Eastbound and Westbound Bridges (E-17-II & E-17-IH)
- I-270 over 60th Avenue & BNSF Eastbound and Westbound Bridges (E-17-IK & E-17-IJ)
- I-270 over East 56th Avenue Eastbound and Westbound (E-17-IO & E-17-IN)

The cross section would remain unchanged along I-270 under the No Action Alternative. The No Action Alternative cross sections are shown on Figure 2 and Figure 3.

Figure 2. No Action Alternative (west of Vasquez Boulevard)

Figure 3. No Action Alternative (east of Vasquez Boulevard)


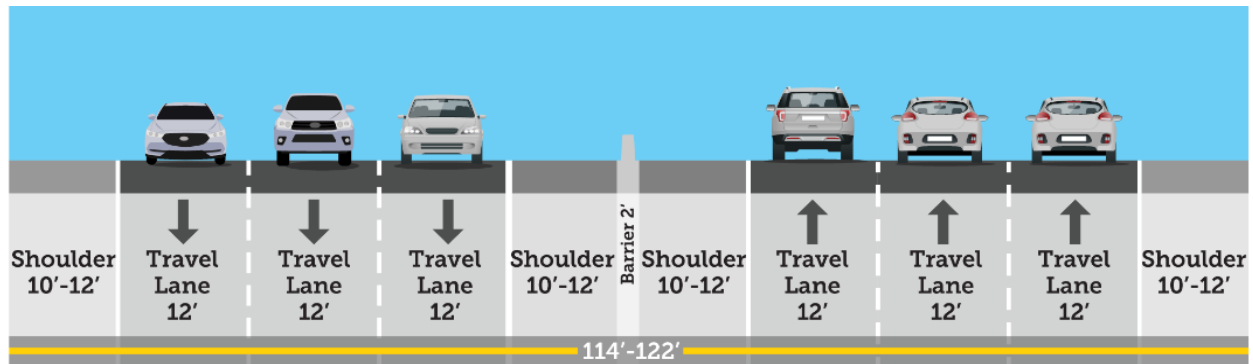
2.2 Build Alternatives

The build alternatives include improving the operational and physical conditions of the I-270 highway; reconfiguring interchanges and ramps; enhancing transit on the corridor; improving bicycle and pedestrian access across I-270; replacing deficient bridges and other infrastructure; and providing modern drainage, water quality, intelligent transportation systems (ITS), and other supporting infrastructure. Both add one new travel lane in each direction and have similar footprints, varying primarily by how the additional travel operates.

2.2.1 Three General-Purpose Lanes Alternative

This alternative would reconstruct I-270 to provide three general-purpose lanes in each direction, as shown in Figure 4.

Figure 4. Three General-Purpose Lanes Alternative



This alternative includes:

Mainline Improvements

- Providing three general-purpose lanes in each direction
- Widening shoulders to meet current standards
- Restriping of the westbound I-270 to northbound I-25 off-ramp to provide dual-exit lane capacity
- Adding emergency turnouts and turnaround
- Adding one continuous auxiliary lane in each direction between the I-76 and Vasquez Boulevard on-ramps and off-ramps

Interchange Improvements

- Adding an eastbound collector ramp to consolidate incoming movements from the I-76 on-ramps
- Separating the westbound I-270 York Street and I-76 off-ramps
- Improving the Vasquez Boulevard interchange design with improved westbound on-ramp acceleration lanes and the eastbound off-ramp deceleration lanes
- Improving the Quebec Street interchange ramp acceleration and deceleration lengths

Bridge Improvements

- Reconstructing bridges that are at, or will be reaching, the end of their useful life. Bridges carrying travel lanes on I-270 include widening to accommodate additional lanes
 - Replacing the existing York Street bridge over I-270 to meet current bridge standards, accommodate an additional travel lane in each direction on York Street, include a 10-foot multi-use path and a 5-foot sidewalk, and enhance lighting
 - Replacing the existing I-270 bridges over the South Platte River Trail to meet current bridge standards, accommodate this project's bicycle and pedestrian improvements on the South Platte River Trail, and enhance lighting
 - Replacing the existing I-270 bridges over the Burlington Ditch to meet current bridge standards, accommodate future bicycle and pedestrian improvements, and enhance lighting

- Replacing the existing I-270 bridges over Brighton Boulevard to meet current bridge standards, accommodate this project's bicycle and pedestrian improvements on Brighton Boulevard and future bicycle and pedestrian improvements by others, and enhance lighting
- Replacing the existing I-270 bridges over East 60th Avenue and the BNSF crossing to meet current bridge standards, accommodate future bicycle and pedestrian improvements, and enhance lighting
- Replacing the existing I-270 bridges over East 56th Avenue to meet current bridge standards, accommodate this project's bicycle and pedestrian improvements, and enhance lighting
- Replacing the existing Vasquez Boulevard bridge over Sand Creek to meet current bridge standards and accommodate this project's bicycle and pedestrian improvements

Bicycle and Pedestrian Improvements

- Improving the York Street I-270 ramp terminal intersections with crosswalks, curb ramps, and pedestrian indicators at the ramp terminal traffic signals
- Adding a new 5-foot sidewalk on the west side and reconstructing a 6-foot sidewalk on the east side of Brighton Boulevard under I-270
- Reconstructing East 56th Avenue under I-270 and adding an on-street bicycle lane, a 10-foot multi-use path, and 6-foot sidewalk connecting to existing sidewalks
- Improving the intersection at East 56th Avenue and South Sandcreek Drive to include curb ramps, crosswalks, and lighting that meet current standards
- Improving the intersection at East 56th Avenue and Eudora Street to include curb ramps, crosswalks, and lighting that meet current standards
- Adding attached sidewalks on the west side of South Sandcreek Drive. The new sidewalks would be 8 feet wide from Quebec Street to East 47th Avenue Drive and 6 feet wide from East 47th Avenue Drive to East 49th Avenue, with a pedestrian crosswalk across East 47th Avenue Drive connecting the two segments
- Improving wayfinding at key locations, guiding bicyclists and pedestrians to the nearest Regional Transportation District (RTD) bus stops, major road connections, or distances to the next trailhead to avoid out-of-direction travel

Trail Improvements

- Reconfiguring the South Platte River Trail crossing under I-270 to improve bicycle and pedestrian visibility around tight curves and increase vertical clearance from the I-270 overpass
- Improving bicycle and pedestrian visibility on the Sand Creek Trail by straightening out tight curves, adding a center stripe, and enhancing lighting at the Vasquez Boulevard bridge over the Sand Creek Trail
- Adding a multi-use path with bicycle and pedestrian underpasses crossing under two free-flow interchange ramps on the east side of Vasquez Boulevard through the interchange with enhanced lighting
- Adding a multi-use path on the east and west sides of the Vasquez Boulevard bridge over Sand Creek, connecting users from the East 56th Avenue and Vasquez Boulevard intersection to a new connection to the Sand Creek Trail

- Adding a multi-use trail spur, connecting the proposed north-south Vasquez Boulevard multi-use trail to the East 56th Avenue and South Sandcreek Drive intersection
- Adding a multi-use path in the southeast corner of East 56th Avenue and South Sandcreek Drive
- Adding a 10-foot-wide bicycle and pedestrian overpass over I-270 and South Sandcreek Drive approximately halfway between East 56th Avenue and Quebec Street

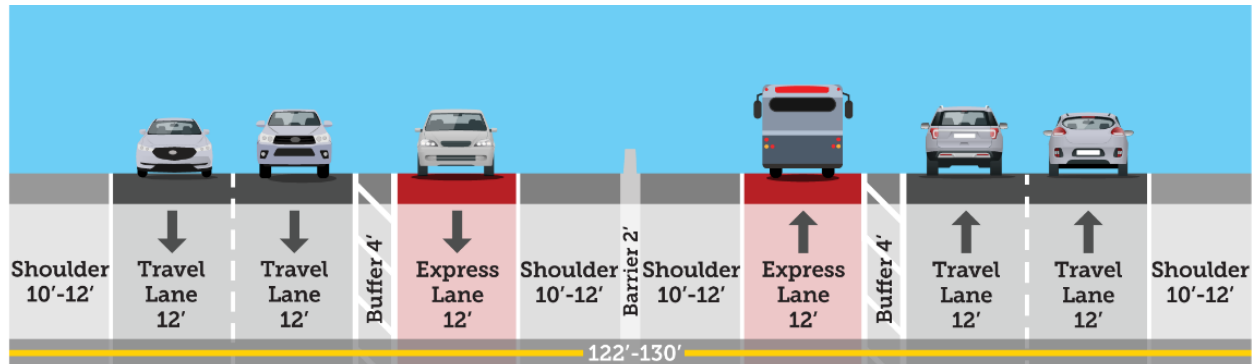
Transit Improvements

- Adding four new bus stops with connecting sidewalks and curb ramps on Quebec Street and South Sandcreek Drive near the I-270/Quebec Street interchange to improve access to RTD routes 88 and 37

2.2.2 Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative

This alternative would reconstruct I-270 with two general-purpose lanes and one Express Lane in each direction, as shown in Figure 5. Transit vehicles and high-occupancy vehicles (three or more people) could travel in the Express Lane, free of charge. Other travelers, including freight trucks, who choose to pay a fee could also use the new Express Lane.

Figure 5. Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative



This alternative includes:

Mainline Improvements

- Providing two general-purpose lanes and one Express Lane in each direction that accommodates transit
- Remainder of mainline improvements identified in the Three General-Purpose Lanes Alternative

Interchange Improvements

This alternative includes the same interchange improvements identified in the Three General-Purpose Lanes Alternative.

Bridge Improvements

This alternative includes the same bridge improvements identified in the Three General-Purpose Lanes Alternative.

Bicycle, Pedestrian, Trail, and Transit Improvements

This alternative includes the same bicycle, pedestrian, trail, and transit enhancements identified in the Three General-Purpose Lanes Alternative.

3.0 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, waterways, and riparian areas. Biological resources discussed in this report are protected by the following federal and state laws, regulations, and policies.

3.1 Federal Regulations

- **Endangered Species Act (ESA)** - Section 7(a)(1) of the federal ESA of 1973 (as amended) directs all federal agencies to participate in the conservation and recovery of threatened and endangered species for both plants and animals. Section 7(a)(2) of the ESA states that each federal agency shall consult with the United States (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 modifications of designated critical habitat.
- **The Migratory Bird Treaty 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 (*Sturnus vulgaris*), House Sparrow (*Passer domesticus*), Rock Pigeon (*Columbia Livia*), 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).
- **Bald and Golden Eagle Protection Act** - The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), enacted in 1940, provides for the protection of the Bald Eagle (*Haliaeetus leucocephalus*) and the Golden Eagle (*Aquila chrysaetos*) 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).

- **Section 404 of the Clean Water Act (CWA)** - The federal CWA of 1972 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 CWA established permit programs to control discharges into U.S. waters and provided the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE) with regulatory authority to issue permits. Section 404 of the CWA established a program to regulate the discharge of dredged or fill material into waters of the U.S. (WOTUS), including wetlands and streams, and requires the issuance of a permit for any activities resulting in such discharge, unless an exemption applies.
- **Executive Order 11990 (EO 11990), Protection of Wetlands** - The purpose of the federal 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 EO 11990. A CDOT wetland finding report will be required if permanent wetland impacts exceed 500 square feet or combined temporary and permanent 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 minimum 1:1 ratio, regardless of the jurisdictional status of the affected wetland.

3.2 State and Local Regulations and Policies

- **Nongame, Endangered, or Threatened Species Conservation Act (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 and 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).
- **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). The CDOT 2009 Impacted Black-tailed Prairie Dog Policy requires projects to be designed and constructed to avoid and minimize impacts to prairie dogs and prohibits the burying of living prairie dogs during earth-moving activities. The City of Commerce City (Commerce City) and Adams County do not have specific black-tailed prairie dog protection policies.

- **Colorado House (HB) 24-1379** - This state bill (signed in 2024) directs the Colorado Water Quality Control Division to implement a dredge and fill authorization program and the Water Quality Control Commission to promulgate rules for individual permitting and mitigation by December 31, 2025. Until permitting and mitigation rules are established, the division will:
 - o Recognize nationwide and regional general permits issued by the USACE as being valid authorizations to discharge dredged or fill material into state waters (beginning January 1, 2025)
 - o Develop and issue temporary authorizations
 - o Develop a statewide general authorization for discharges to isolated state waters
 - o Develop compensatory mitigation requirements
- **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 (Colorado Department of Agriculture [CDA] 2020a, 2020b):
 - o Aggressively invades or is detrimental to economic crops or native plant communities
 - o Is poisonous to livestock
 - o Is a carrier of detrimental insects, diseases, or parasites
 - o Has direct or indirect effects that are detrimental to the environmentally sound management of natural or agricultural systems
- **Colorado Senate Bill 40 (1973)** - Senate Bill 40 (SB40) guidelines outline various best management practices designed to minimize impacts to state waterways during and after construction or maintenance activities within the state of Colorado. 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 2022). 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.
- **Shortgrass Prairie Initiative (SGPI)** - In 2003, FHWA, USFWS, Colorado Parks and Wildlife (CPW), CDOT, and The Nature Conservancy (TNC) developed a programmatic 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 (ROW). The SGPI was implemented to help protect the state's shortgrass prairie as a result of CDOT maintenance activities, generally east of I-25. Implementation of the SGPI resulted in the protection of approximately 31,240

square acres of high quality, contiguous, shortgrass prairie through permanent conservation easements that are managed through TNC. The programmatic agreement for the SGPI was originally designed to be effective for 20 years, ending in April 2024, or when CDOT disturbed a total of 15,160 acres in the action area. As of fall 2023, 10,507 acres remain to offset future impacts in the action area, and on December 29, 2023, the USFWS extended the SGPI indefinitely until the remaining acres are used. In addition, the SGPI species list was updated in 2023 to include species such as the monarch butterfly. CDOT annually reports to the USFWS each project that utilized the SGPI, 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. Any temporary or permanent loss of shortgrass prairie habitat will be assessed and mitigated through CDOT's offsite SGPI, which conserves habitats in offsite locations to compensate for project impacts.

4.0 Methods

CDOT evaluated biological resources within the study area (approximately 369 acres), which represents the extent of potential permanent and temporary construction-related impacts, in 2020 and again in 2024. The study area is the same as the project footprint shown in Figure 1. In this report, biological resources refer to vegetation and noxious weeds, general wildlife and avian species, federally listed threatened and endangered species, Colorado special status species, and wetlands and WOTUS.

4.1 Data Gathering

Biologists conducted field surveys during July 2020, follow-up surveys in early October 2020, and additional surveys in May 2024 to represent study area adjustments. Surveys included collection of information on vegetation, wildlife habitat, and noxious weeds, as well as a formal delineation of wetlands and WOTUS within the study area. General information on climate, vegetation, soils, hydrology, and existing wetlands and waters were reviewed before field surveys. Data sources included the following:

- U.S. Geological Survey (USGS) 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 6/4/2024, 9/27/2023, 9/12/2019, 5/13/2017, 10/7/2012, 7/30/2007, and 6/26/1993)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data
- Review of the CDA noxious weeds list
- EPA Ecoregions (Chapman et al. 2006) and Land Cover Mapping (Denver Regional Council of Governments [DRCOG] 2020)
- CPW species activity mapping data and online species profiles
- Colorado's Conservation Data Explorer (CODEX) (CODEX 2024)
- USFWS species profiles

Federally listed threatened and endangered species potentially occurring within the study area were determined by using the USFWS online Information for Planning and Conservation (IPaC) tool. An official species list was obtained on August 22, 2024. Colorado special status species were reviewed by using CODEX, which includes documented occurrences of state-listed species and general range maps. To capture information pertaining to vegetation communities, noxious weeds, and plant and wildlife habitat or observations, field notes, or global positioning system (GPS) data were collected during field surveys.

Survey methodology for the wetland and WOTUS delineation followed the USACE 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 USACE Wetland Delineation Manual: Great Plains Region 2.0 (USACE 2010). Wetland indicator statuses for plants were used from The National Wetland Plant List, version 3.4 (USACE 2020).

Where aquatic resources were identified, feature boundaries were mapped by 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.

4.2 Analysis Approach

The analysis of impacts considers how the No Action Alternative and build alternatives would permanently and temporarily 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 (SWIFT) and the corresponding species coarse habitat evaluation tool were used to analyze impacts to federal ESA-listed species (see Attachment A). Permanent and temporary impacts to wetlands and WOTUS were calculated by overlaying the proposed project footprint with aquatic features that were delineated via GPS during field surveys. Permanent and temporary impacts to riparian vegetation (regulated under SB40) were estimated by overlaying the proposed project footprint, with the USFWS National Wetland Inventory (NWI) data layers for freshwater forested/shrub wetland and forested/shrub riparian. It should be noted that a formal inventory of SB40 resources will be completed during final design of the project.

Direct effects (or impacts) are caused by the action, which occur at the same time and place. Examples of direct effects include the removal of habitat and disruption to wildlife within the study area during construction. Indirect effects (or impacts) are caused by the action, which occur later in time or are farther removed in distance but are still reasonably foreseeable. Examples of indirect effects include disruption to nesting raptors located in habitats several hundred feet or more from the project because of increased construction activity and noise and effects to wildlife and vegetation that remain years after construction is completed.

5.0 Existing Conditions

The study area is within the Flat to Rolling Plains sub-ecoregion within the High Plains ecoregion, as defined by the EPA. The study area and land cover mapping are shown in Figure

6 and Figure 7. The High Plains are drier, which 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, with the exception of the Sand Creek riparian corridor which parallels much of the I-270 corridor. Most of the I-270 ROW lacks native vegetation, and much of the undeveloped areas contain invasive or non-native vegetation. However, native vegetation is present in areas along Sand Creek (i.e., sandbar willow [*Salix exigua*]), and in some areas along the highway where native grasses and forbs have been seeded or are remnant from historic populations. The elevation throughout the study area is fairly consistent ranging from 5,100 feet to 5,250 feet above mean sea level.

The study area is 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 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 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 (Figure 8), where three large bridge structures span the waterway. The overbank contains a large riparian wetland complex connected to retired sand and gravel pits—dominated by coyote willow and mature plains cottonwood trees (*Populus deltoides* ssp. *monilifera*). The wetland complex is somewhat cut off from natural floods by a berm and recreational trail; however, the complex drains through culverts connecting wetlands to Clear Creek.

Figure 6. Land Cover Mapping - West

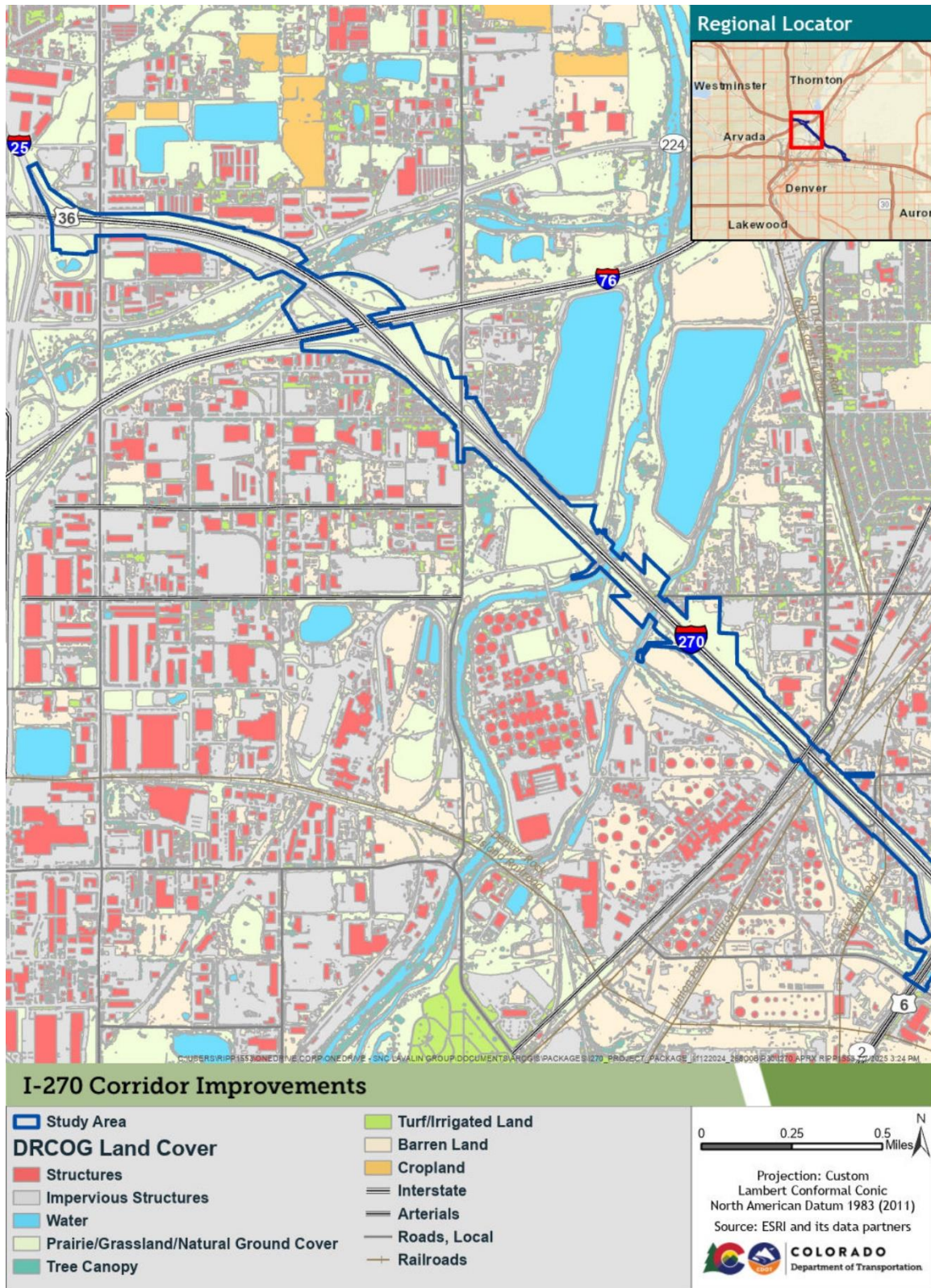
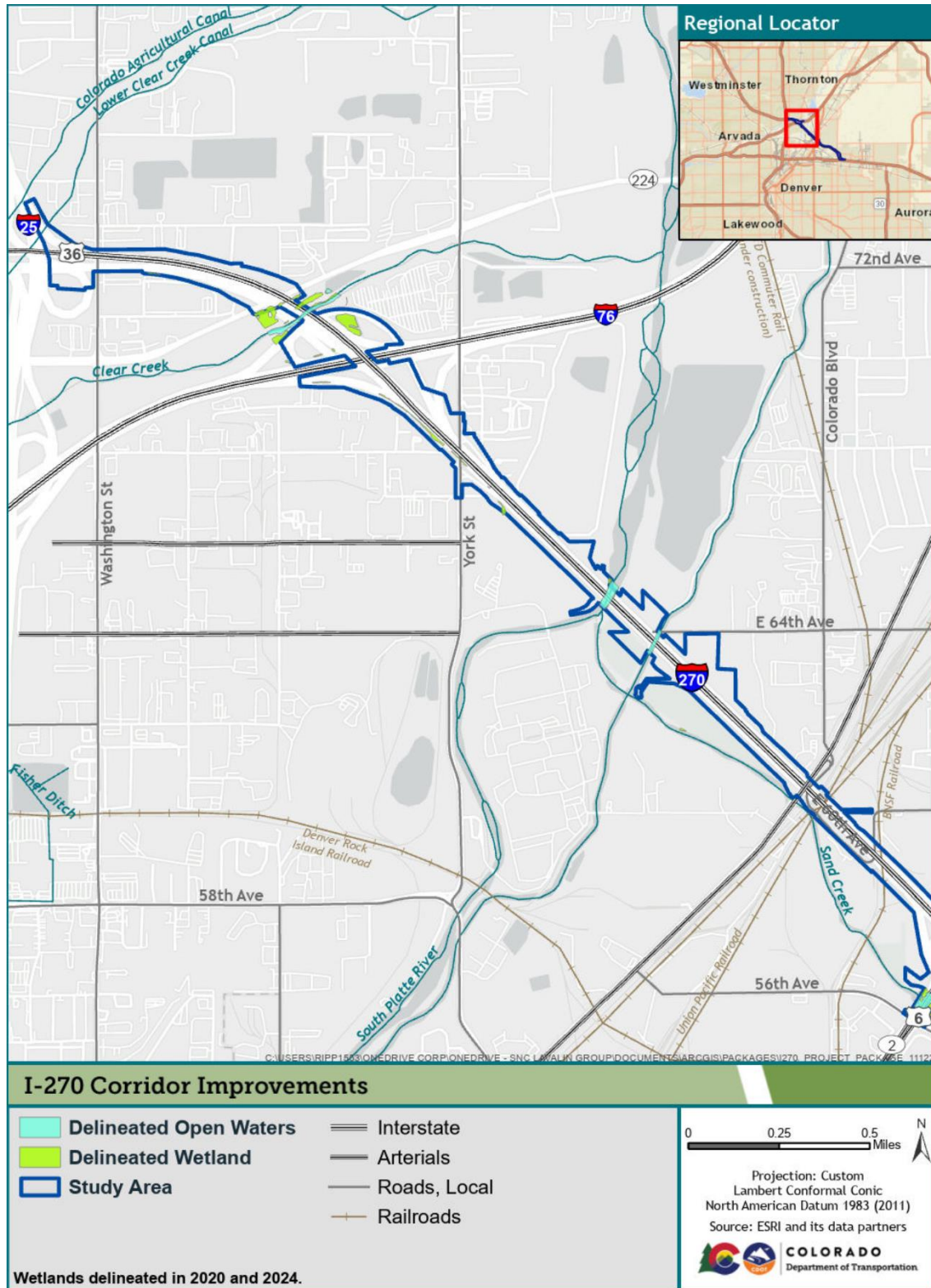


Figure 7. Land Cover Mapping - East



Figure 8. Aquatic Resources Mapping - West



The South Platte River flows north, under, and perpendicular to I-270, near the center of the project study area (Figure 8). 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 uses; and urban runoff. The I-270 bridge over the South Platte is a high bridge, downstream from the Robert W. Hite wastewater treatment facility. The bridge does not appear to restrict any flow, except during extreme flood events, such as the 100-year flood. Throughout the study area, banks of the South Platte River are very steep, which limits the riparian and wetland zone to a narrow strip at the ordinary high-water mark of the stream.

Several ponds and reservoirs occur in the surrounding area, including Miller Reservoir and Cat Lake located to the north of I-270 on opposite sides of the South Platte River.

5.1 General Habitat

General habitat or land cover types were calculated by using the Land Use Land Cover Pilot Project, developed by the DRCOG in 2018 and modified in 2020 (DRCOG 2020). The study area is approximately 369 acres, of which 36 percent consists of areas that are categorized as impervious surfaces or structures and do not provide habitats. Figure 6, Figure 7, and Table 1 display the associated land cover types, acreages, and relative cover.

Table 1. Land Cover Types Identified in the Study Area

Land Cover Type	Acreage within Study Area	Percentage of Study Area
Impervious surface	137.41	37%
Prairie, grassland, and natural ground cover	174.35	47%
Barren land	49.28	13%
Turf and irrigated land	2.70	1%
Tree canopy	4.03	1%
Water	1.30	1%
Structures	0.19	<1%
Total	369.26	100%

Source: DRCOG 2020

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 approximately higher than 5 meters.

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 approximately higher than 2 meters.

5.2 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).

Nineteen state-designated noxious weeds were identified in the study area during field surveys from July 2019 and 2024 (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*), common teasel (*Dipsacus fullonum*) (List B species), 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 (*Salsola sp.*) and kochia (*Bassia scoparia*). Although 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 ¹	Density and General Location in Study Area
Bull thistle	<i>Cirsium vulgare</i>	B	CIVU	Low - Disturbed, dry upland areas
Canada thistle	<i>Cirsium arvense</i>	B	CAIR4	High - Abundant throughout, particularly in mesic areas adjacent to wetlands
Chicory	<i>Cichorium intybus</i>	C	CIIN	Low - Disturbed, dry upland areas
Common burdock	<i>Arctium minus</i>	C	ARM2	Low - Disturbed, dry upland areas
Common mullein	<i>Verbascum thapsus</i>	C	VETH	Low - Disturbed, dry upland areas
Common reed	<i>Phragmites australis</i>	Watch List	PHAU7	Low - Wetland areas along the bank of Sand Creek
Common teasel	<i>Dipsacus fullonum</i>	B	DIFU2	High - Abundant throughout, particularly in mesic areas adjacent to wetlands

¹USDA codes are assigned using the first two letters of the genus, followed by the first two letters of the specific epithet. A number is assigned where there is more than one species with the same letter code.

Common Name	Scientific Name	State List	USDA Code ¹	Density and General Location in Study Area
Cutleaf teasel	<i>Dipsacus laciniatus</i>	B	DILA4	Low - Mesic areas adjacent to wetlands
Dalmatian toadflax	<i>Linaria dalmatica</i>	B	LIDA	Low - Disturbed, dry upland areas
Diffuse knapweed	<i>Centaurea diffusa</i>	B	CEDI3	Medium - Disturbed, dry upland areas
Downy brome	<i>Bromus tectorum</i>	C	BRTE	High - Disturbed, dry upland areas
Field bindweed	<i>Convolvulus arvensis</i>	C	COAR4	High - Disturbed, dry upland areas
Hoary cress	<i>Cardaria draba</i>	B	CADR	Medium - Disturbed, dry upland areas
Houndstongue	<i>Cynoglossum officinale</i>	B	CYOF	Low - Disturbed, dry upland areas
Leafy spurge	<i>Euphorbia esula</i>	B	EUES	High - Disturbed, dry upland areas
Perennial pepperweed	<i>Lepidium latifolium</i>	B	LELA2	Low - Disturbed, dry upland areas
Russian olive	<i>Elaeagnus angustifolia</i>	B	ELAN	Low - Mesic areas adjacent to Sand Creek and the I-270 ROW
Siberian elm	<i>Ulmus pumila</i>	Watch List	ULPU	Low - Scattered at low densities throughout the study area
Tree of Heaven	<i>Ailanthus altissima</i>	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.

Medium (34 percent to 66 percent) = Individuals are relatively common throughout the study area.

Low (0 percent to 33 percent) = Individuals are present throughout the project, or there are small, isolated infestations.

5.3 Wildlife

5.3.1 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.), and 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*); and several species of bats (*Microchiroptera* spp.). Common herptiles potentially occurring in the study area include American bullfrogs (*Lithobates catesbeianus*) and Woodhouse's toad (*Anaxyrus woodhousii*); bull (or gopher) snakes (*Pituophis catenifer*), North

American racers (*Coluber constrictor*), and garter snakes (*Thamnopsis spp.*); and six-lined racerunners (*Aspidoscelis sexlineatus*).

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.

Typically, riparian ecosystems are highly productive and diverse habitat for wildlife, especially in arid environments and/or urban settings. Waterways and their associated riparian areas are important concentration areas for various wildlife species that may reside within the study area, particularly those depending on wetlands/waters. The productivity and relative importance of riparian areas are demonstrated in the western U.S., where riparian habitat comprises less than 1 percent of the total land area at some time of the year but supports most of the terrestrial wildlife. The linear nature of riparian ecosystems provides distinct corridors that are important as migration and dispersal routes and forested connectors between habitats for wildlife (USDA 1996). In the mostly urbanized study area, Sand Creek, Clear Creek, and the South Platte River have riparian corridors that provide important habitat for birds and wildlife, including reptiles and amphibians. Fishes (known to occur in these streams) include fathead minnows (*Pimephales promelas*), sand shiners (*Notropis stramineus*), white suckers (*Catostomus commersoni*), longnose dace (*Rhinichthys cataractae*), western mosquitofish (*Gambusia affinis*), and common carp (*Cyprinus carpio*).

5.3.2 Migratory Birds

Migratory bird habitats and suitable nesting areas are present within the study area, primarily along the waterways in the wetland and riparian areas and on structures. Based on a data review of raptor nest locations in CPW's raptor nest database, there are no raptor nests within 0.5 miles of the study area. However, trees are scattered throughout the study area, mainly along riparian corridors. These trees may provide suitable nesting and perching substrate for raptors, including owls. 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 inside 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 was inactive, inactive nests can be used again in subsequent nesting seasons, so this nest could become active in the future.

5.3.3 Colorado Special Status Species

Colorado special status species potentially occurring within the study area were determined through review of species occurrence data in CODEX (Attachment B), including CPW range maps, Colorado Natural Heritage Program (CNHP) occurrence data, and results of field surveys. Colorado special status species that potentially occur within 1 mile of the project, as shown in Table 3.

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

Species	Status	CODEX Occurrence Data	General Habitat Association	Habitat in Project Vicinity
Amphibian - Northern leopard frog (<i>Rana pipiens</i>)	SC	Potential Occurrences within Project Area: Models, Range Maps, or Records with Low Precision	Wet meadows and the banks and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches.	Yes. Wetlands and waterways are present.
Bird - Bald eagle (<i>Haliaeetus leucocephalus</i>)	SC	Documented Occurrences within 1 Mile of Project Area	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.
Bird - Western burrowing owl (<i>Athene cunicularia</i>)	ST	Potential Occurrences within Project Area: Models, Range Maps, or Records with Low Precision	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.
Mammal - Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	SC	Potential Occurrences within Project Area: Models, Range Maps, or Records with Low Precision	Shortgrass to mid-grass prairies on flats or shallow slopes.	Yes. Active prairie dog colonies are present in the study area.
Mammal - Black-footed ferret (<i>Mustela nigripes</i>)	FE/SE	Potential Regulatory Species within Project Area: Models, Range Maps, or Records with Low Precision	Prairie dog colonies at reintroduced sites. The nearest reintroduction site is the Rocky Mountain Arsenal National Wildlife Refuge more than 4 miles to the northeast of the project.	No. The ferret population at the Rocky Mountain Arsenal located more than 4 miles from the project and commercial, industrial, and residential developments occur in between.
Mammal - Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	FT/ST	Potential Regulatory Species within Project Area: Models, Range Maps, or	Well-developed riparian habitat with adjacent, relatively undisturbed grassland communities and a nearby water source between 4,650 feet to 7,600 feet elevation (USFWS 2016).	No. Project is within the Block Clearance Zone for the Denver metropolitan area (USFWS 2016).

Species	Status	CODEX Occurrence Data	General Habitat Association	Habitat in Project Vicinity
		Records with Low Precision		
Reptile - Common garter snake (<i>Thamnophis sirtalis</i>)	SC	Potential Occurrences within Project Area: Models, Range Maps, or Records with Low Precision	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.
Fish - Iowa darter (<i>Etheostoma exile</i>)	SC	Documented Occurrences within 1 Mile of Project Area: Rare Species, Natural Communities, and Species of Economic, Recreational or Conservation Value	Typical habitat includes clear sluggish vegetated headwaters, creeks, and small to medium rivers; weedy portions of glacial lakes, marshes, ponds; over substrates of sand, peat, and/or organic debris.	Yes. Known to occur within the South Platte River watershed.

Sources: CODEX 2024

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 banks and shallow portions of marshes, wet meadows, ponds, lakes, and streams, particularly where rooted aquatic vegetation is present (Hammerson 1999). In Colorado, they appear 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. Generally, eggs attach to vegetation just below the surface of the water (Hammerson 1999).

Historically, northern leopard frogs presumably occurred in or along 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 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 11.05 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 of some pesticides (dichlorodiphenyltrichloroethane, or DDT, 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 the bald eagle 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 often appear 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, from about 400 bald eagles to 1,000 bald eagles can appear 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).

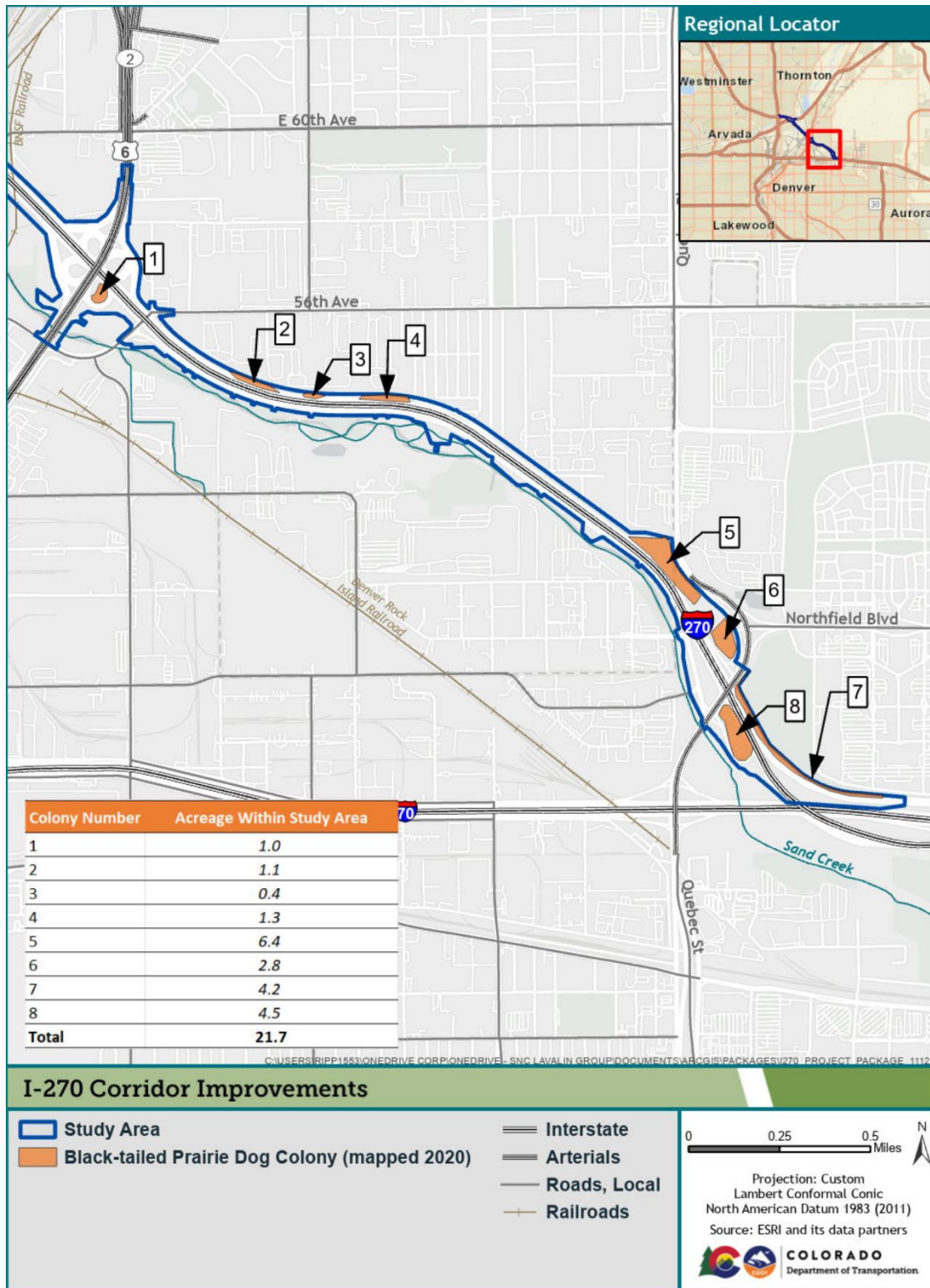
CPW has identified roosting habitat and an active nesting site in Rocky Mountain Arsenal National Refuge approximately 4 miles northeast of the study area. Also, a roost site is mapped along Sand Creek, approximately 2 miles southeast of the study area at Bluff Lake (CPW 2018). No nests were observed during the field survey, and roosting habitats have not been identified along waterways in the study area. Bald eagle occurrences within the study area are possibly 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. However, they will 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 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 21.7 acres of active colonies were mapped during field surveys in the southeastern portion of the project. Figure 9 shows eight mapped colonies and their associated acreages.

Figure 9. 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 its back and pale stripes on the sides of its body. They can reach about 49 inches long, but common garter snakes are usually much smaller in Colorado. Sometimes the tail 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 from about 3,500 feet 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 potential for common garter snakes to occur in the study area along Sand Creek, Clear Creek, and the South Platte River.

Iowa Darter

Iowa darters are small fish in the perch family (*Percidae*). This species has a limited distribution in Colorado, but it is known to occur in the South Platte River watershed. Iowa darters prefer cool, clear water with a sand or organic matter substrate and vegetated stream banks. This species is a northern, coolwater species, and it is unlikely this species was ever common in the state.

According to CODEX occurrence data, there are documented occurrences of this species within 1 mile of the project. However, habitat at locations where open water occurs in the project area, including bridges over the South Platte River, Clear Creek, and Sand Creek, lack a characteristic habitat for this species; therefore, potential for this species to occur is possible but considered low.

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 other small mammals have dug, such as prairie dogs, ground squirrels, and even badgers. The western population of burrowing owls can appear 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 potential for the presence of burrowing owls.

5.3.4 Federally Listed Threatened and Endangered Species

As previously stated under Section 4.0, Methods, the USFWS's Information Planning and Conservation (IPaC) online service was used to acquire a list of federally listed threatened and endangered species with potential to occur within the study area.

Federally listed species include the following:

- Piping Plover (*Charadrius melodus*) - Threatened*
- Whooping Crane (*Grus americana*) - Endangered*
- Pallid Sturgeon (*Scaphirhynchus albus*) - Endangered*
- Ute-ladies'-tresses orchid (*Spiranthes diluvialis*) - Threatened
- Western prairie fringed orchid (*Platanthera praeclara*) - Threatened*
- Monarch butterfly (*Danaus plexippus*) - Proposed Threatened

Preble's meadow jumping mouse is not included in the list above, because the study area is within the block clearance for the Denver metropolitan area (USFWS 2016). Based on guidance from the USFWS: "In designating a block clearance zone, we eliminate the requirement that individuals and agencies coordinate with us before impacting potential Preble's meadow jumping mouse riparian or upland habitats inside the zone" (USFWS 2019).

Four 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).

The remaining two species, the Ute ladies'-tresses orchid and the monarch butterfly, are discussed further below.

Ute Ladies'-tresses Orchid

Ute ladies'-tresses orchid (ULTO) (*Spiranthes diluvialis*) is a long-lived perennial forb, with stems 8 inches to 20 inches tall, that probably reproduces exclusively by seed. The occasional presence of clustered plants could be the result of asexual reproduction from a single root mass or broken root segment. The flowering stalk consists of few to many small, white, or ivory flowers clustered into a spike arrangement at the top of the stem. Generally, it blooms from late July through August. Typically, ULTO typically appears along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams. It often occurs in stable wetland and seepy areas associated with old landscape features within historical floodplains of major rivers. Also, it appears in wetland and seepy areas near freshwater lakes or springs (USFWS 2021).

Based on field observations made during aquatic resource delineations (July and September 2020), ULTO habitat characteristics are not present within the study area. Perennial streams in the study area are flashy in nature, and well-developed floodplains, high flow, channels, old oxbows, or wet meadows are not present. Consequently, due to a lack of habitat, potential impacts to ULTO are not anticipated, and the species is not analyzed further in this report.

Monarch Butterfly

FHWA initiated a programmatic, formal consultation on July 18, 2022, regarding the monarch butterfly to determine the impact FHWA/CDOT actions may have on the butterfly. The conference opinion (issued December 28, 2022) concluded that these actions are not expected to jeopardize the monarch butterfly. To proactively minimize any impacts to potential Monarch butterfly habitat, disturbed areas will be reseeded with a mix of native plant species, including two species of flowering forbs and milkweed, where appropriate.

5.4 Senate Bill 40 Resources

In the study area, Clear Creek, Sand Creek, and the South Platte River, as well as their adjoining wetlands and riparian areas fall under the jurisdiction of SB40. CPW has identified I-270 where it crosses both Clear Creek and the South Platte River as a highway that intersects with waters containing aquatic species in the State Wildlife Action Plan, and consultation with CPW is recommended (Schmude, pers. comm. 2021).

While portions of Clear Creek and the South Platte River that flow through the study area are situated in an urban setting and are therefore, degraded, native fish, such as brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), and white suckers (*Catostomus commersonii*), are known to occur. Also, non-native common carp (*Cyprinus carpio*) are likely present in both waterways. Much of Sand Creek is incised and contains numerous drop structures, and therefore, fish habitat is lacking. However, several minnows (*Cyprinids*) and common carp were observed in Sand Creek during 2024 field surveys.

5.5 Shortgrass Prairie Initiative

The location of the study area (east of I-25) places the project within the area considered under the SGPI. A total of 174.35 acres of SGPI lands, including areas mapped by DRCOG as prairie, grassland, and natural ground cover, occur in the study area. Seven species included in the *Biological Assessment, Conference Report, and Conservation Strategy for Colorado's Shortgrass Prairie Initiative* (Grunau, Veneer, Rondeau, and Powell 2023) have potential to occur in the study area: bald eagle, black-tailed prairie dog, burrowing owl, lark bunting (*Calamospiza melanocorys*), monarch butterfly, western bumblebee (*Bombus occidentalis*), and northern leopard frog.

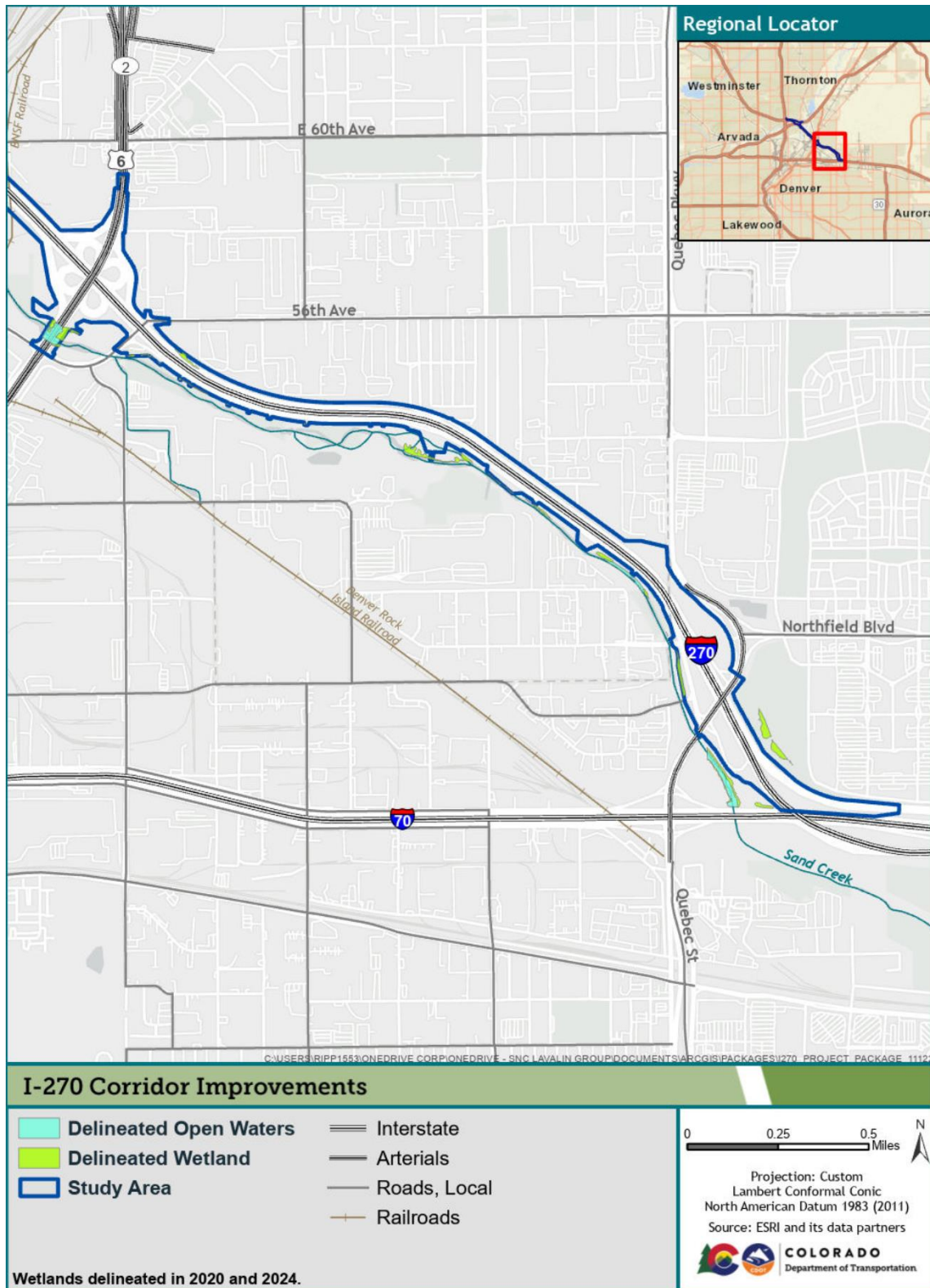
5.6 Wetlands/Waters of the U.S.

As previously mentioned, the study area is 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 appear along human-made roadside swales and/or stormwater features. Details on methodology, including results of the aquatic resources delineation, aquatic resource mapping, proposed project impacts, and mitigation considerations, are described further in the Wetlands and Aquatic Resources Technical Report, provided under a separate cover for this project. Figure 8 and Figure 10 show aquatic resources delineated within the study area.

A total of 59 aquatic resources, including 52 distinct wetlands and 7 non-wetland waters totaling approximately 17.51 acres, were delineated in 2020 and 2024. 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, seven were open-water features (for example, canals, creeks, and rivers) totaling 6.46 acres, 21 were categorized as PEM wetlands (4.60 acres), and 31 were PSS wetlands (6.45 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.

Figure 10. Aquatic Resources Mapping - East



6.0 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. Permanent impacts would result from reconstructing and widening both directions to accommodate one additional travel lane, increasing to full-width (8 feet or greater) shoulders, and bridge construction. Because 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 369-acre study area, approximately 281.69 acres (76 percent of the study area) would be impacted by both build alternatives, which have the same impact footprint. Of the 281.69 acres, 161.82 acres are categorized as permanent impacts, and 45.80 acres are temporary impacts. The estimated number of total impacts to disturbed and non-vegetated areas and nonporous areas (such as impervious surfaces and structures) that do not provide suitable habitat for wildlife, including most mammals, birds, reptiles, and amphibians would be approximately 161.75 acres, which represents 36 percent of the overall impacts. Avoidance, minimization, and mitigation measures related to vegetation impacts are summarized in Section 7.0 of this report.

The impact footprint is the same for both build alternatives, including the Three General-Purpose Lanes Alternative and the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative. Each build alternative, as well as the No Action Alternative, is described below. However, the impacts discussion for each of the build alternatives have been combined into one impact section, because the impact footprint is the same for both, and therefore, impacts are indistinguishable amongst the build alternatives.

6.1 No Action Alternative

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

6.2 Three General-Purpose Lanes Alternative

This alternative would reconstruct I-270 to provide three general-purpose lanes in each direction. The following project design and construction elements of the Three General-Purpose Lanes Alternative may result in permanent or temporary impacts to biological resources:

- Add one general-purpose lane in each direction between I-25 and I-70
- Reconstruct existing pavement and travel lanes
- Improve shoulders

- Lengthen and/or redesign exit and entrance ramps at the I-76, York Street, Vasquez Boulevard, and Quebec Street interchanges. Between Vasquez Boulevard and York Street, ramps would connect as continuous auxiliary lanes.
- Add a new eastbound I-270 ramp from northbound Vasquez Boulevard and reconstruct the Vasquez Boulevard interchange
- Reconstruct bridges that have reached the end of their useful life
- Drainage and water quality ponds are in the vicinity of the I-76 interchange
- Provide sidewalks at existing crossings of I-270 at York Street, Vasquez Boulevard, 56th Avenue, and Dahlia Street, where there are gaps
- Add a new pedestrian overpass between 56th Avenue and Quebec Street

6.3 Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative

This alternative would reconstruct I-270 with two general-purpose lanes and one Express Lane in each direction, rather than three general-purpose lanes in each direction. All other design elements listed above (under the Three General-Purpose Lanes Alternative) would be included in this build alternative.

6.4 Impacts Associated with Both Build Alternatives

6.4.1 General Habitat

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

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

Land Cover Type	Permanent Impacts	Temporary Impacts	Combined Impacts
Barren land	34.93	14.36	49.29
Prairie, grassland, and natural ground cover	127.81	46.55	174.36
Impervious surface	117.68	19.73	137.41
Structures	0.04	0.15	0.19
Tree canopy	3.09	0.95	4.04
Turf and irrigated land	1.56	1.18	2.74
Water	0.19	1.16	1.35
Total	285.30	84.08	369.38

Source: DRCOG 2020

Approximately 91 percent of combined impacts from the build alternatives would be to the barren land; prairie, grassland, and natural ground cover; and impervious surface land cover types. Assuming that impervious surface and structures land cover types do not provide a general habitat to most wildlife, the build alternatives would permanently impact approximately 167.58 acres (34.93 acres barren land + 127.81 acres prairie + 3.09 acres tree canyon + 1.56 acres turf and irrigated land + 0.19 acres water) to land cover types that may offer habitat. Permanently converting vegetation to impervious surfaces would reduce the number of general habitats present along I-270. Consequently, the project would further fragment and reduce 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 of an urban setting, the loss of highly used general habitats is expected to be minimal.

Impacts to bridges could result in temporary and permanent impacts to species that may use the underside of the structures, including roosting bats and migratory birds (discussed in Sections 5.3.1 and 6.4.3). Section 7.0 includes mitigation and management measures for avoiding and minimizing impacts to species using CDOT structures.

6.4.2 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 introduction of, establishing, and further spreading of noxious weeds. Section 7.0 includes mitigation and management measures for managing noxious weeds.

6.4.3 Migratory Birds

Multiple migratory bird nests were identified underneath bridges during field surveys, and potential nesting habitat is present. Therefore, 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. Neither build alternative is likely 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, 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 build alternatives. 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 various migratory birds.

Indirect impacts to 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 7.0 of this report), impacts on migratory birds, including raptors will be minimized.

6.4.4 Colorado Special Status Species

Northern Leopard Frog

Project disturbance to wetlands would primarily occur to drainage swales and other low-functioning wetlands that do not generally provide suitable habitat for northern leopard frogs. There would be 1.90 acres of impacts (0.37 acres of permanent impact and 1.53 acres of temporary impact) to the preferred northern leopard frog habitat, such as natural floodplain depressions and streambank/riparian wetlands. However, it is likely that the overall amount of wetland impacts would decrease as the design progresses, and the impact areas are refined. Therefore, potential impacts to northern leopard frog habitat are likely to occur, although these areas are largely degraded. Wetland impacts generally will be mitigated. Also, northern leopard frog surveys will be conducted between May 1 and September 1 (before construction) to determine if individuals are present. If the species appears, coordination with CPW and the CDOT environmental manager will occur. If no survey is conducted, then presence must be assumed, and no work would be allowed in any wetland area between March and September.

Bald Eagle

Although no mapped habitat is within the study area, bald eagles may occasionally forage along the Sand Creek, Clear Creek, and the 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 likely 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. Section 7.0 lists the 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.

Black-tailed Prairie Dog

Direct impacts to black-tailed prairie dogs are likely to occur from removing habitat and from disturbing 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 21.7 acres of active prairie dog colonies would be impacted by the build alternatives. 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 likely to decrease.

Per CDOT policy, the project will be designed and constructed to avoid and minimize impacts to prairie dog colonies. If impacts exceed 2.0 acres, relocation will be evaluated. If a relocation site cannot be located for towns larger than 2.0 acres, prairie dogs will be captured and donated to raptor rehabilitation facilities or given to the USFWS for the black-footed ferret reintroduction program.

Iowa Darter

Project disturbance to open water would be limited to locations at the I-270 bridge over the South Platte River and Sand Creek at Vasquez Boulevard. In-stream habitat at these locations has been altered by past transportation projects, and preferred habitat features of the species, such as undercut banks, are lacking. Based on low potential for Iowa darters to occur and low-quality habitat, potential for impacts to the species are considered unlikely and would be isolated.

Western Burrowing Owl

Impacts to black-tailed prairie dog burrows have potential to directly impact western burrowing owls. Ground disturbance within and adjacent to 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 a CDOT Revised Specification 240.

6.4.5 Federally Listed Threatened and Endangered Species

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

The four species indicated by an asterisk in Section 5.3.3 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. 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 needing a 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 to 2019. A letter from March 29, 2019, extended the South Platte Water Related Activities Program coverages through 2033. The programmatic biological assessment addresses the four 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 completing 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.

6.4.6 Wetlands/Waters of the U.S.

Based on preliminary design concepts, permanent wetland impacts resulting from the build alternatives are anticipated to be 2.67 acres, while temporary impacts are anticipated to be 1.63 acres. Permanent impacts to non-wetland waters are anticipated to be 0.26 acres, with temporary impacts to be 2.41 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. For a detailed discussion of wetland and non-wetland waters impacts, refer to the Wetlands and Aquatic Resources Technical Report.

6.4.7 Senate Bill 40 Resources

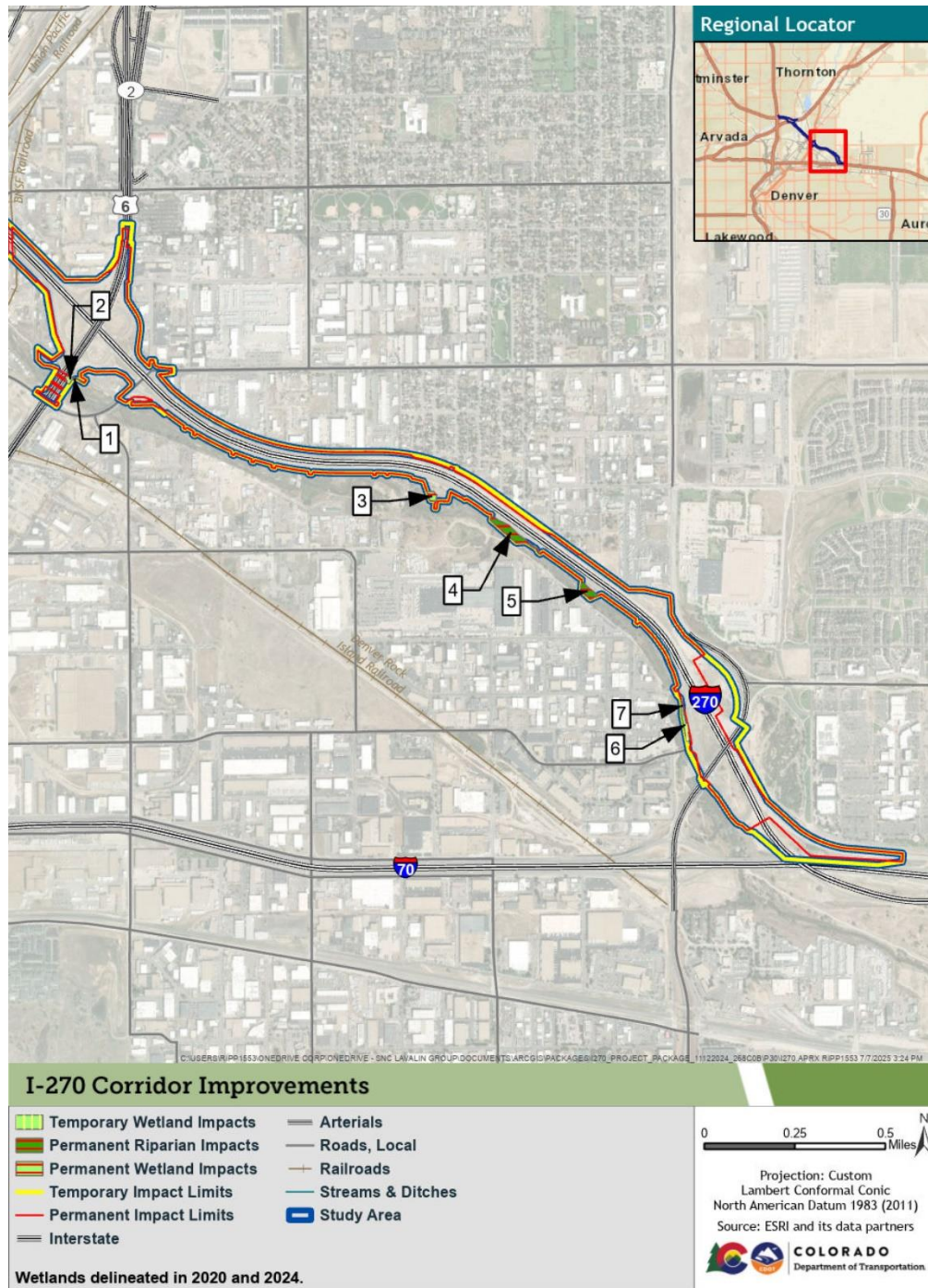
The following project improvements could potentially impact resources associated with SB40:

- Both bridges over the South Platte River would be replaced with a single structure that is approximately 50 feet wider than 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.

SB40 riparian vegetation impacts were calculated by using two NWI data layers, including Freshwater Forested/Shrub Wetlands and Forested/Shrub Riparian. An estimated 3.16 acres of riparian vegetation would be impacted by the build alternatives, including 2.47 acres of permanent and 0.69 acres of temporary impacts (Figure 11).

Because the project would affect riparian areas, CDOT will coordinate with CPW's Aquatic Biologist and mitigation measures will be included as detailed in Section 7.0 of this report.

Figure 11. Senate Bill 40 Riparian Areas Mapping



6.4.8 Shortgrass Prairie Initiative

The build alternatives would result in both permanent and temporary impacts to areas mapped by DRCOG as prairie, grassland, or natural ground cover. These areas are collectively considered areas of shortgrass prairie. Total permanent impacts within SGPI areas would be 125.53 acres, and total temporary impacts within SGPI areas would be 33.99 acres. Permanent impacts would include removing vegetation and replacing with impervious surfaces and other transportation features.

7.0 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 refining the project footprint in the final design, thereby reducing temporary and permanent impacts.

Table 5 summarizes the impacts and associated mitigation measures that will be implemented for the build alternatives. Refer to the Wetlands and Aquatic Resources Technical Report for mitigation measures for these resources.

Table 5. Summary of Impacts and Mitigation - Both Build Alternatives

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
General construction activities	Study Area	Direct impacts to wetlands and non-wetland waters	Obtain a Clean Water Act (CWA) Section 404 Permit from the US Army Corps of Engineers (USACE) prior to the start of construction. A series of Nationwide Permits (NWP) are anticipated to permit the proposed work, including but not limited to, NWP 14 for linear transportation projects and NWP 3 for the repair, rehabilitation, or replacement of serviceable structures.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
Vegetation Removal	Study area	Disruption and/or destruction of active migratory bird nests	Vegetation or structure (e.g., bridges, box culverts) removal within the project limits will occur outside of the bird breeding season (April 1 to August 31). If vegetation or structures 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 (Colorado Parks and Wildlife [CPW] 2020). 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 US Fish and Wildlife Service (USFWS) will be notified within 24 hours.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
Vegetation Removal	Study Area	Disruption and/or destruction of roosting bats	Tree or structure (e.g., bridges, box culverts) removal within the project limits will occur outside of the summer bat roosting season (generally April 1 to October 31). If vegetation or structures must be removed during the roosting season, a habitat survey for roosting bats will be conducted within a project limit buffer. Surveys will utilize the Bridge/Structure Bat Assessment Form included as Attachment D of the Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines (USFWS 2024). If necessary, measures to avoid and minimize impacts to roosting bats, should they occur, will be implemented in coordination with the CDOT biologist.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
Vegetation Removal	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, to the extent practicable. Follow CDOT's Black-tailed Prairie Dog Policy to guide prairie dog management activities. Pre-construction surveys will be conducted to confirm the extent of active prairie dog colonies. Coordination will occur with the CDOT biologist during preparation of the prairie dog management plan. Per CDOT policy, if impacts exceed 2.0 acres, relocation will be evaluated.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
Vegetation Removal	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 by a qualified biologist (CDOT 2009).	CDOT Engineering and Contractor	Pre-Construction and Construction
Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Develop a revegetation plan during final design. The revegetation plan will be incorporated into the Stormwater Management Plan (SWMP) and seed mixes (also identified in the SWMP) to be used will be specific to upland areas, riparian areas, and wetland areas. Specific objectives of the revegetation plan will be identified, such as selecting native plants and seed mixes for revegetation, that blend the vegetation with existing vegetation, are consistent with vegetation types, growth habits, and soil types, use of native species, mimic surrounding native plant densities and minimizing the spread of noxious and invasive weeds.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Minimize the amount and time period of disturbance to allow revegetation of disturbed areas.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Ground disturbance, including temporary	Avoid disturbance to existing trees, shrubs, and vegetation, to the maximum extent possible.	CDOT Engineering and Contractor	Construction

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
		vegetation removal			
Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Revegetate all disturbed areas with native grass and forb species. Apply seed, mulch, and mulch tackifier in phases throughout construction. Native trees and shrub plantings shall be included in project landscape plans and mitigated on a 1:1 basis, where feasible.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Include at least two pollinator species and milkweed in the seed mix as a conservation measure for the monarch butterfly. Pollinator species and milkweed will equal at least 20% of the Pure Live Seed content of the overall seed mix.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Use temporary erosion control blankets with flexible natural fibers.	CDOT Engineering and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Ground disturbance, including temporary vegetation removal	Install temporary orange plastic fencing along the limits of disturbance, where feasible, to minimize construction impacts to vegetation.	CDOT Engineering and Contractor	Construction

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
Vegetation Removal	Study Area	Temporary and permanent impacts to Senate Bill (SB) 40 resources (Riparian Areas)	A Programmatic or Formal SB40 Wildlife Certification from Colorado Parks and Wildlife during final design, prior to project construction. A formal SB40 inventory will be conducted during final design.	CDOT Engineering and Environmental, and Contractor	Final Design, Construction, and Post-Construction
Vegetation Removal	Study Area	Temporary and permanent impacts to SB40 resources (Riparian Areas)	Riparian trees and shrubs removed during construction will be replaced as stipulated in CDOT's Guidelines for SB40 Wildlife Certification, which state that trees removed during construction, whether native or non-native, shall be replaced with a goal of 1:1 replacement based on a stem count of all trees with diameter at breast height of two inches or greater.	CDOT Engineering and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Temporary and permanent impacts to SB40 resources (Riparian Areas)	Shrubs removed during construction, whether native or non-native will be replaced based on their pre-construction aerial coverage. In all cases, all such trees and shrubs will be replaced with native species. These planting locations will be identified in the final design plan set.	CDOT Engineering and Contractor	Construction and Post-Construction
Vegetation Removal	Study Area	Temporary and permanent impacts to SB40 resources	Riparian areas, where vegetation is not completely cleared or grubbed, will use geo-textile or other protection measures to leave roots/stumps of trees (such as cottonwood) or shrubs (such as sandbar willow) to regenerate after construction is completed.	CDOT Engineering and Contractor	Construction and Post-Construction

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
		(Riparian Areas)			
Vegetation Removal	Study Area	Temporary and permanent loss of vegetation and wildlife habitat/short grass prairie	Mitigate loss of shortgrass prairie habitat through the Shortgrass Prairie Initiative (SGPI). Record and report the amount of impervious surface increase for consideration through the SGPI. CDOT maintains a database of these impacts (both temporary and permanent), which is reported to USFWS on an annual basis. Impacts to shortgrass prairie will be refined during final design and onsite mitigation measures will be incorporated into the construction plans.	CDOT Engineering and Environmental, and Contractor	Final Design and Construction
General construction activities	Wetland and aquatic areas	Potential loss of habitat for the northern leopard frog	A survey will be conducted between May 1 and September 1 prior to construction to determine if northern leopard frogs are present. If northern leopard frogs are found, coordination with CPW will occur. Proper erosion control and construction Best Management Practices (BMPs) will be used and identified in the SWMP to minimize erosion and sedimentation in frog habitat.	CDOT Engineering and Environmental, and Contractor	Pre-Construction and Construction
Water usage	Study Area	Endangered Species Act-listed species, South Platte River basin	Any water used for this project will be reported to USFWS at the end of the year after the completion of the project.	CDOT Engineering and Environmental, and Contractor	Construction and Post-Construction

Activity Triggering Mitigation	Location of Activity	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase that Mitigation will be Implemented
		water depletions			

8.0 Required Permits and Coordination

The following permits and coordination related to biological resources and WOTUS will 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 (NWP) will be used to permit the proposed work, including but not limited to, NWP 14 for linear transportation projects and NWP 3 for the repair, rehabilitation, or replacement of serviceable structures. Each NWP will constitute a separate and complete action, per the USACE definition. The project is 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.

- Colorado Dept of Public Health and Environment CDPHE Regulation 87 Authorization

Consultation with CDPHE will also be required for this project under Regulation 87. Depending on the impacts and construction timeline, a temporary or permanent authorization may be required.

- SB40 Wildlife Certification from CPW.

SB40 Wildlife Certification will be required for this project. Next steps include conducting a formal SB40 inventory (mapping SB40 trees and shrubs in riparian areas) and refining waters, wetlands, and riparian permanent and temporary impacts. Riparian impacts (both permanent and temporary) will be updated based on the formal SB40 inventory.

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Attachments

Attachment A. SWIFT Consultation Summary

SWIFT Consultation Summary

For tracking and report purposes, please email a copy of this sheet to the Wildlife Program Manager at HQ

Project Name: I-270 EIS **Project Number:** No Information Given.

Project SA Number: 25611 **Project Location:** Adams County

County: ADAMS **Summary Date:** 7/10/2024 4:24:08 PM

Project Description: I-270 Improvements.

CDOT Contact: Erik Schmude

Site Visit: Yes **Photos:** Yes

Elevation Range: 5000-5300 **Habitat:** Disturbed, riparian, wetland, upland grassland

Federally Listed Species

Federally listed species found within the county	Species which range is within the Project Area	Species which may be affected by the project
BLACK-FOOTED FERRET (BFF)		
EASTERN BLACK RAIL (EBR)		
GRAY WOLF (GW)		
MONARCH BUTTERFLY (MB)	x	MONARCH BUTTERFLY (MB)
PALLID STURGEON (PST)	x	PALLID STURGEON (PST)
PIPING PLOVER (PP)	x	PIPING PLOVER (PP)
PREBLES MEADOW JUMPING MOUSE (PMJM)		
TRICOLORED BAT (TCB)		
UTE LADIES-TRESSES (ULTO)	x	
WESTERN PRAIRIE FRINGED ORCHID (WPFO)	x	WESTERN PRAIRIE FRINGED ORCHID (WPFO)

Federally listed species found within the county	Species which range is within the Project Area	Species which may be affected by the project
BLACK-FOOTED FERRET (BFF)		
EASTERN BLACK RAIL (EBR)		
GRAY WOLF (GW)		
WHOOPING CRANE (WC)	x	WHOOPING CRANE (WC)

The four species which may be affected by depletion to the S. Platte River system (Pallid Sturgeon, Piping Plover, Western Prairie Fringed Orchid, and Whooping Crane), will be addressed through a separate consultation

Required Mitigation

Species	Action	Measure Number	Required Mitigation v1.1
Piping Plover (PP)	Any or All	PP-1	PP-1 Addressed through S.Platte water consultation
Pallid Sturgeon (PSt)	Any or All	PSt-1	PSt-1 Addressed through S.Platte water consultation
Whooping Crane (WC)	Any or All	WC-1	WC-1 Addressed through S.Platte water consultation
Western Prairie Fringed Orchid (WPFO)	Any or All	WPFO-1	WPFO-1 Addressed through S.Platte water consultation
Monarch Butterfly (MB)	Any or All	MB -1	MB -1 This project will not jeopardize the continued existence of the monarch butterfly

Determinations: Unless a valid explanation is given in the 'Notes' column above, all of the required mitigation actions listed in the table above are to be included in the project. If that is accomplished, the US Fish and Wildlife Service has agreed that the project may affect but is not likely to adversely affect the species listed, as per the SWIFT informal consultation. It is assumed that the project will have no effect on any other federally listed species. These determinations are valid for 1 year beyond the date of this summary.

Other Mitigation Requirements

OTHER MITIGATIONS:

SB40 Consultation will be required.

In order to avoid violating the Migratory Bird Treaty Act of 1918, if any trees or shrubs are to be removed or work on/under bridges is to be completed between April 1 and August 31, a survey must be completed for active nests. If an active nest(s) is found no work may be done within 50' of the nest(s) until the nest(s) becomes inactive. To avoid the survey requirement, it is recommended that all vegetation that needs to be removed, be removed after August 31 and before April 1. See spec 240 for details.

Equipment and gear that were previously used in another stream, river, lake, pond or wetland, and that are to be used in or near the waters on the project, shall be treated to prevent the spread of aquatic invasive species. These species include, but are not limited to:

- (1) New Zealand Mud Snails
- (2) Zebra Mussels
- (3) Quagga Mussels
- (4) Whirling Disease
- (5) All other aquatic invasive species

Equipment that shall be treated includes all parts of machinery and vehicles of all types and sizes that came into contact with the live water.

Gear that must be treated includes boots, waders, tools, and all other materials and attire used previously in the live water.

The Contractor shall use one of the following two treatments:

- a) Immerse tools and/or other equipment in a solution of a quaternary ammonium-based institutional cleaner and clean water (six ounces of Green Solutions High Dilution Disinfectant 256 or Super HDQ Neutral per gallon of clean water) for at least ten minutes prior to, and after, work within a waterway. Rinse with clean water, and dispose of chemicals properly, away from water bodies.
- b) Spray or soak tools and/or equipment with clean water (must be 140°F or warmer) for at least ten minutes prior to, and after, work within a waterway. Gear and equipment should be sprayed or soaked away from water bodies. All equipment should be completely drained of water and dried. Tools and/or equipment should be completely dried between each use.

If there are questions about these disinfection procedures, please contact CPW's Invasive Species Program at 303-291-7295 or invasive.species@state.co.us.

State List Species

Species	Status	Determination	Justification
Northern leopard frog (<i>Rana pipiens</i>)	Species of concern		
Burrowing Owl (<i>Athene cunicularia</i>)	State Threatened		
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	Species of concern		
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	species of concern		
Common garter snake (<i>Thamnophis sirtalis</i>)	species of concern		

Attachment B. Colorado's Conservation Data Explorer - Project Review Report

NOTE: This attachment is not able to be included with the EIS due to accessibility requirements. If you would like a copy of this attachment, please contact the project team at cdot_i270@state.co.us or 303-512-4270.