
**BIOLOGICAL RESOURCES
TECHNICAL REPORT**

FOR THE

**I-25 (US 36 to 104th Avenue)
Environmental Assessment**

Prepared for:



Colorado Department of Transportation
Region 1
2829 W. Howard Place
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List of Acronyms and Abbreviations

BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CatEx	Categorical Exclusion
CBC	concrete box culvert
CDA	Colorado Department of Agriculture
CDOT	Colorado Department of Transportation
CNHP	Colorado Natural Heritage Program
CPW	Colorado Parks and Wildlife
CRS	Colorado Revised Statutes
CVCP	Colorado Vegetation Classification Project
CWA	Clean Water Act
EA	Environmental Assessment
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FEIS	Final Environmental Impact Statement
FHU	Felsburg Holt & Ullevig
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	Geographic Information System
GNSS	Global National Satellite System
GPS	Geographical Positioning System
HUC	Hydrologic Unit Code
I-25	Interstate Highway 25
IPaC	Information, Planning, and Conservation
MBTA	Migratory Bird Treaty Act
MM	mile marker
NDIS	Natural Diversity Information Source
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NWI	National Wetland Inventory
OTIS	Online Transportation Information System
PBA/PBO	Programmatic Biological Assessment/Programmatic Biological Opinion
PEL	Planning and Environmental Linkage
PMJM	Preble's Meadow Jumping Mouse
ROD	Record of Decision
ROW	Right-of-Way
SB 40	Senate Bill 40
SGPI	Shortgrass Prairie Initiative
US 36	United States. Highway 36
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WUS	Waters of the U.S.



1.0 Project Description

A biological resources evaluation was completed for the Interstate 25 (I-25) North, United States Highway 36 (US 36) to 104th Avenue project. Colorado Department of Transportation (CDOT), in cooperation with the Federal Highway Administration (FHWA), is preparing a template Environmental Assessment (EA) for the I-25 North, US 36 to 104th Avenue project. The Regional Transportation District (RTD) is a cooperating agency.

The I-25 North, US 36 to 104th Avenue project includes improvements to relieve congestion and improve safety on I-25 from US 36 to 104th Avenue in Adams County and the City of Thornton, Colorado (Figure 1 and Figure 2). The project will provide improvements to an approximately 4-mile segment of I-25 between US 36 and 104th Avenue. The current cross section of I-25 between US 36 and 104th Avenue generally includes three general-purpose lanes and one Express Lane along the inside shoulder with an auxiliary lane between 84th Avenue and Thornton Parkway. The inside shoulder varies in size between 2 and 12 feet, and the outside shoulder varies between 10 and 12 feet. There is a 2-foot inside shoulder and a 2-foot buffer between the Express Lane and the nearest general-purpose lane.

Proposed improvements associated with this project are as follows:

- ▶ Adding a fourth general-purpose lane in each direction from 84th Avenue to Thornton Parkway with the northbound general-purpose lane extending to 104th Avenue,
- ▶ Constructing continuous acceleration and deceleration lanes between the I-25/84th Avenue interchange, and the I-25/Thornton Parkway interchange,
- ▶ Widening the inside and outside shoulders to a consistent 12-foot width,

- ▶ Accommodating a proposed median transit station and pedestrian bridge for the Thornton Park-n-Ride just south of 88th Avenue, and
- ▶ Replacing the 88th Avenue bridge.

The proposed typical section on I-25 will consist of four 12-ft general-purpose lanes, a 12-ft Express Lane along the inside traveled way, and a 12-ft outside auxiliary lane between each interchange. Additionally, the inside and outside shoulders will be widened to 12 feet, and the Express Lane buffer will be widened to 4 feet, and a 2-foot barrier will separate the northbound and southbound lanes of I-25. Surrounding the median station will be a 2-foot concrete barrier separating the Express Lanes from the bus station and bus lanes.

2.0 Affected Environment

This section describes the biological resources (special status species habitat, wetlands, noxious weeds, nesting migratory birds, Senate Bill 40 resources) and land cover types of the project area. Figure 1 and Figure 2 provide maps of the project area and vicinity.

This section also includes resources identified from federal, state, and local agencies. Lastly, information is included based on site conditions during field surveys conducted on February 14, 2017, and on July 2, 2018. A wetland delineation was also conducted as a part of this analysis (FHU, 2019a).

2.1 Previously Reported Environmental Resources

Biological resources along I-25 and adjacent areas within the project area have been previously evaluated and reported on (CDOT, FTA, and FHWA, 2008; CDOT and FHWA, 2010; CDOT and FHWA, 2011a; CDOT and FHWA, 2011b; CDOT and FHWA, 2014a).

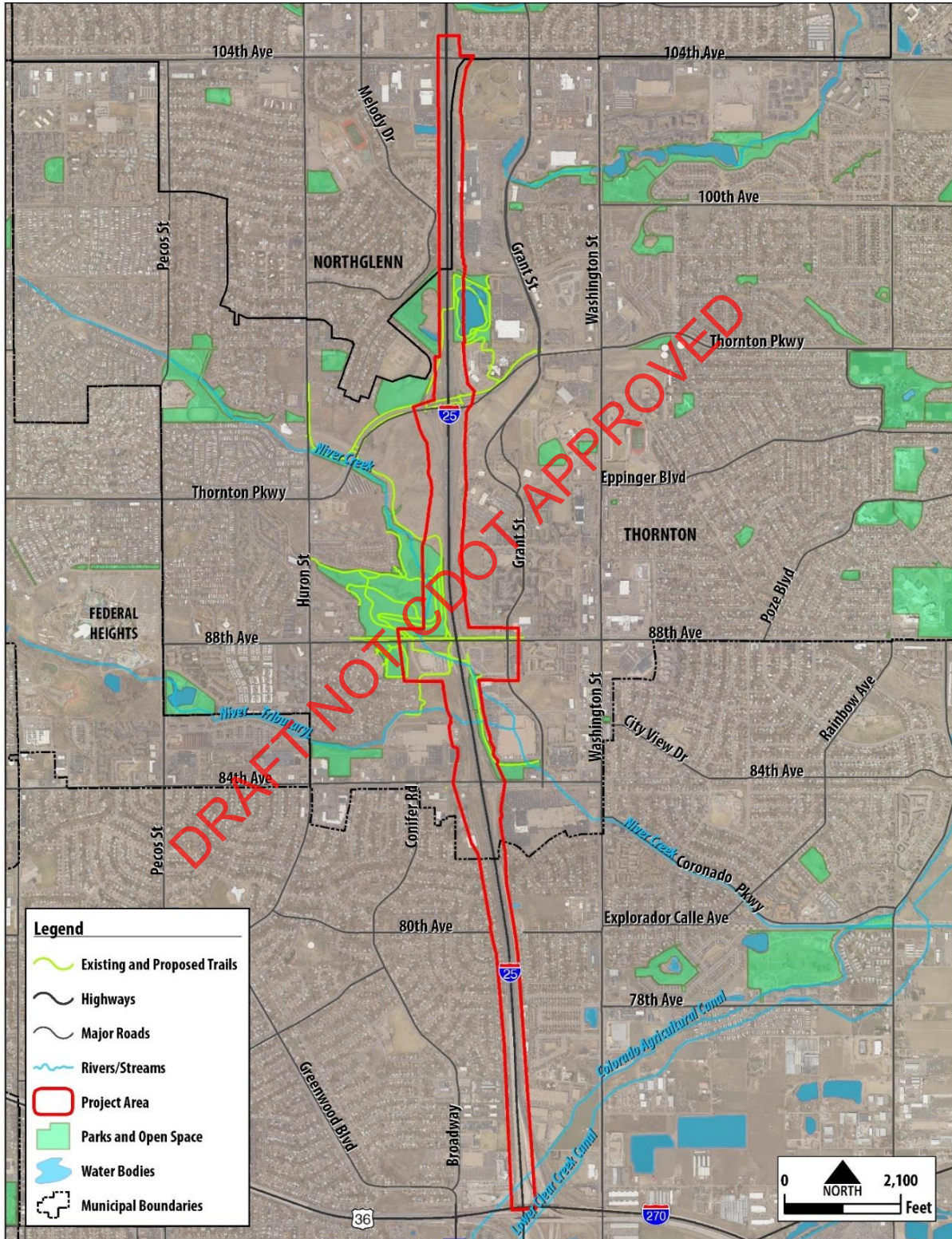


Figure 1. Project Vicinity



Source: FHU, 2019b

Figure 2. Project Area



Source: FHU, 2019b



I-25 (US 36 to 104th Avenue) Environmental Assessment

This report verifies the resources that were identified in those reports and identifies resource changes since those reports were completed. For additional details, refer to the following technical documents associated with those previous studies:

- ▶ *Wildlife Technical Report for North I-25 - Adams, Boulder, Broomfield, Denver, Larimer, and Weld Counties, Colorado* (CDOT, 2008a)
- ▶ *North I-25 EIS - Technical Memorandum Wetlands and Other Waters* (CDOT, 2008b)
- ▶ *Wildlife Technical Report Addendum for North I-25 - Adams, Boulder, Broomfield, Denver, Larimer, and Weld Counties, Colorado* (CDOT, 2011a)
- ▶ *Final Programmatic Biological Assessment for North I-25 - Adams, Boulder, Broomfield, Denver, Larimer, and Weld Counties, Colorado* (CDOT, 2011b)
- ▶ *North I-25 EIS - Technical Memorandum Addendum Wetlands and Other Waters of the U.S.* (CDOT, 2011a)
- ▶ *I-25/84th Avenue Bridge Reconstruction Project - Ecological Assessment* (CDOT, 2010b)
- ▶ *North I-25 PEL: Corridor Conditions Report* (CDOT, 2014)

2.2 Applicable Statutes and Regulations

The National Environmental Policy Act (NEPA) requires projects with federal oversight or projects pursuing federal funding assistance to evaluate the environmental consequences of proposed actions. Other federal regulations and state statutes also require coordination with federal and state agencies to identify impacts on other sensitive biological resources. The other federal regulations and state statutes that are applicable to this specific project include:

- ▶ The Clean Water Act (CWA) of 1972, which protects wetlands, open waters, and other Waters of the U.S. (WUS)
- ▶ Federal Executive Order (EO) 11990 - Protection of Wetlands, which directs lead federal agencies, in this instance FHWA, to protect wetlands by avoiding direct or indirect support of construction in wetlands when a practicable alternative is available
- ▶ The Fish and Wildlife Coordination Act of 1934, as amended

- ▶ The Endangered Species Act (ESA) of 1973, which protects threatened and endangered species and their habitat
- ▶ The Migratory Bird Treaty Act (MBTA) of 1918, which protects most birds found in Colorado and their active nests
- ▶ EO 13186 - Protection of Migratory Birds, which directs executive departments and agencies to take certain actions to further implement the MBTA
- ▶ The Federal Noxious Weed Act of 1974, which established a program to control the spread of noxious weeds
- ▶ EO 13112 - Invasive Species, which prevents the introduction of invasive species, provides for their control, and minimizes the economic, ecological, and human health impacts caused by invasive species
- ▶ Colorado Department of Agriculture (CDA), Plant Industry Division, Colorado Noxious Weed Act, 35-5.5-101 to 119, Colorado Revised Statutes (CRS), including species on the Colorado Noxious Weed List
- ▶ Colorado Senate Bill 40 (SB 40) Wildlife Certification for impacts on streams, streambanks, or stream tributaries (CDOT & CPW, 2013)
- ▶ CDOT's NEPA Manual (CDOT, 2017a)

2.3 Agency Coordination

The lead agencies for the I-25 North: US 36 to 104th Avenue EA, CDOT and FHWA, have coordinated with Colorado Parks and Wildlife (CPW), the United States Fish and Wildlife Service (USFWS), and the United States Army Corps of Engineers (USACE). CDOT and FHWA have obtained a Section 404 Individual Permit from the USACE for wetland and other WUS impacts identified in the North I-25 FEIS for the Proposed Action. CDOT and FHWA have also obtained a Biological Opinion (BO) from the USFWS for impacts on federally listed special status species for the Proposed Action.

However, while the I-25 North: US 36 to 104th Avenue EA project falls within the North I-25 FEIS Proposed Action footprint, this project includes elements that were not previously cleared by the USFWS and USACE as part of the FEIS. Therefore, this project will acquire new permits and clearances from these agencies.



2.4 Method of Evaluation

The information in this report incorporates resource information from previous studies, publicly available information, and field surveys.

Publicly available information was compiled from the following sources:

- ▶ USFWS National Wetland Inventory (NWI) (USFWS, 2017a)
- ▶ USGS National Hydrography Dataset (NHD) (USGS, 2017)
- ▶ United States Environmental Protection Agency (EPA) Eco-Regions (USEPA, 2006)
- ▶ Colorado Natural Heritage Program (CNHP) Terrestrial Ecological System Patches (CNHP, 2005)
- ▶ Colorado Vegetation Classification Project (CVCP) (CPW, 2007)
- ▶ CDOT Online Transportation Information System (OTIS) (CDOT, 2017b)
- ▶ USFWS Information, Planning, and Conservation (IPaC) (USFWS, 2017b)
- ▶ Colorado Parks and Wildlife (CPW, 2017a)

Field Survey

Keith Hidalgo and Brian Fauver, Felsburg Holt and Ullevig (FHU) environmental scientists, conducted field surveys on February 14, 2017, to evaluate and reassess resources previously documented during other studies to verify previous information and to collect information on any new resources present within the project area. Neal Goffinet and Haley Stratton, FHU environmental scientists, conducted a follow-up visit on July 2, 2018. Photographs in **Appendix A** show site conditions. **Appendix B** includes a list of flora and fauna observed on February 14, 2017, and on July 2, 2018.

FHU staff also verified previously delineated wetlands, delineated new wetlands, and captured SB 40 vegetation information with a Trimble® global national satellite system (GNSS) (also known as a geographical positioning system (GPS)) unit with sub-meter level of accuracy using ESRI® ArcPad™ 10x. This information was then incorporated into a geographic information system (GIS). Data were then incorporated in ESRI® ArcMap™ 10x.

2.5 Vegetative and Other Land Cover Types

Most of the land surrounding the project area consists of urban development with a few areas of open space or landscaped parks. These more natural areas are concentrated toward the northern end of the project corridor. The bulk of urban development includes residential and commercial zoning, along with local, arterial, and highway roadways.

The project area is located in the Flat to Rolling Plains sub-ecoregion within the High Plains Ecoregion (USEPA, 2006). The High Plains Ecoregion consists of dry grassland across smooth or slightly irregular plains with a high percentage of cropland. The Flat to Rolling Plains sub-ecoregion is considered more level with soils being silty with a layer of loess.

Table 1 identifies land cover types present in the project area and their estimated quantities.

Table 1. Land Cover Types and Percent Cover in the Project Area

Land Cover Type	Area (acres)	Percent of Total
Mixed-grass Open Space	92.5	33.7%
Riparian/Wetland	8.6	3.1%
Landscaped	35.7	13.0%
Commercial	4.1	1.5%
Residential	14.1	5.1%
Roadways, Trails, Parking Lots	117.5	42.9%
Open Water	1.6	0.6%
TOTAL	274	100.0%

Source: FHU, 2019b



FHU environmental scientists observed the vegetation present during the field surveys on February 14, 2017, and on July 2, 2018, to include landscaped lawns, ornamental trees and shrubs, native mixed-grass open space areas, riparian vegetation, and wetland areas (**Figure 4**). Noxious weeds were dispersed throughout the project area and are described in more detail in **Section 2.6**.

Areas containing the highest concentrations of native vegetation include Niver Open Space, Niver Creek Open Space Trail, Niver Creek Tributary L Trail, Badding Open Space (**Figure 2**), and a parcel containing Badding Reservoir and referred to as a wildlife habitat area (**Figure 3**).

Figure 3. Badding Reservoir Property Sign



Two field surveys were conducted, one in February and one in July. Therefore, the species identified represent only the collection of plant species easily visible during those times and should not be considered comprehensive. Further field studies later in the growing season would reveal other species. **Appendix B** documents flora and fauna observed during the field survey.

Impacts and Mitigation

No Action Alternative

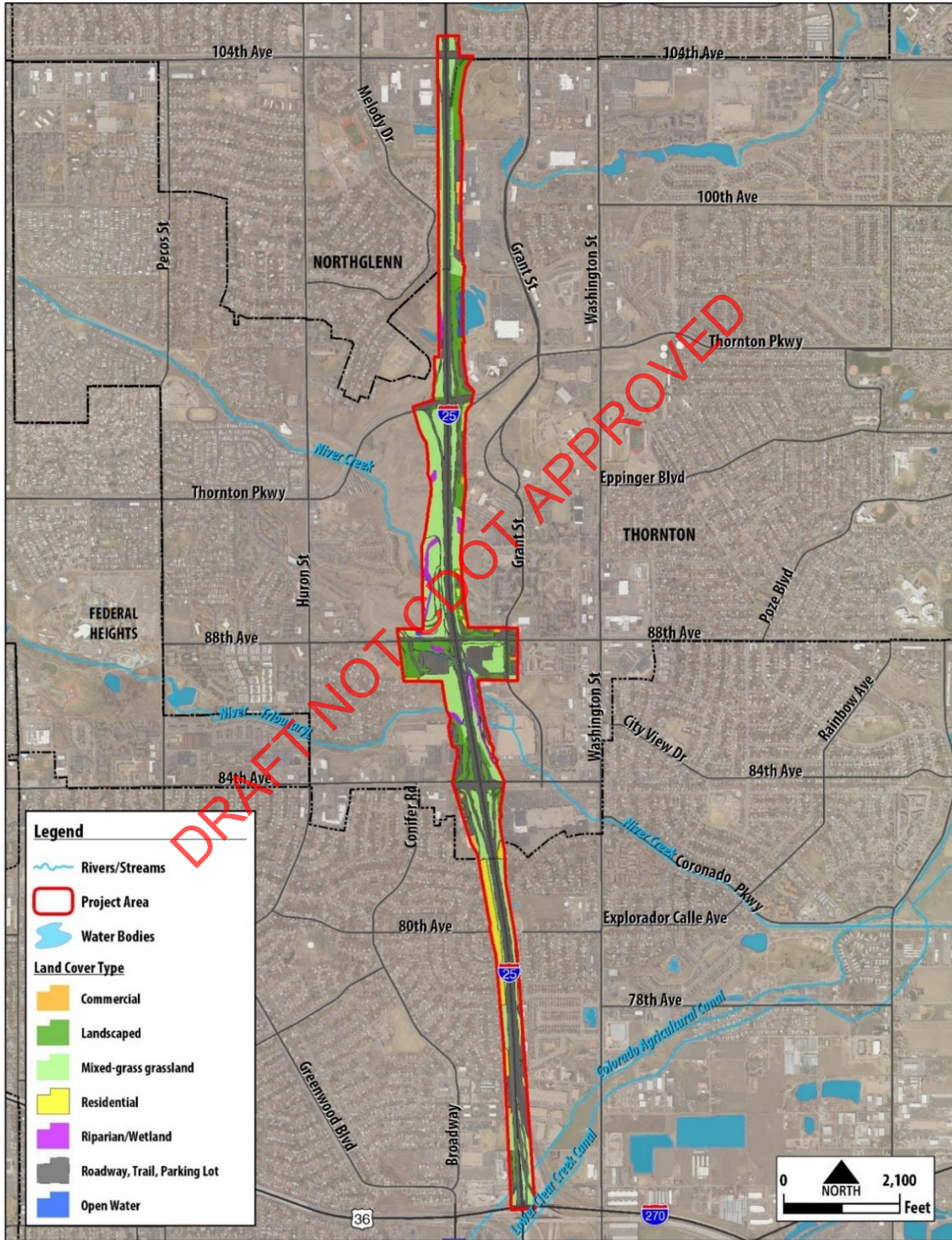
The No Action Alternative would have the potential to degrade natural land cover due to nearby development.

Proposed Action

The Proposed Action would have an impact on 33.4 acres of mixed-grass open space; 1.2 acres of riparian/wetland; 8.8 acres of landscaped; 0.1 acre of residential; and 53.1 acres of roadways, trails, and parking lots.

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Figure 4. Land Cover Types in the Project Area



Source: FHU, 2019b



2.6 Noxious Weeds

The Colorado Noxious Weed Act requires the control of 77 plant species designated as “noxious weeds.” According to the CDA, noxious weeds are plants that reduce agricultural productivity, lower real estate values, endanger human health and well-being, and damage scenic values (CDA, 2003; CDA, 2016; CWMA, 2013). The state has divided the 77 noxious weeds into three groups: Lists A, B, and C.

List A includes 25 plant species with limited to no distribution in Colorado and designated for immediate eradication. List B includes 36 species locally common but managed to stop continued spreading. List C includes 16 generally widespread species that are not managed to stop spreading but identified for additional education, research, and biological control. The Watch List contains 24 plant species; this Watch List is intended to serve advisory and educational purposes only and is used to locate and report distributions of these species for future designation as noxious weeds.

The project team reviewed preliminary data from CDOT’s OTIS for available information on mapped roadside noxious weeds. CDOT regularly maps noxious weeds as part of maintenance activities. Based on available information from 2010 through 2015, many List B and List C species are found along I-25 within the project area. Both List B and List C species were identified in the field and from OTIS, as indicated in Table 2 and shown on Figure 5. Only List B species require management actions to stop the continued spread of these species.

Table 2. List of Observed Noxious Weeds

Common Name	Species Name	CDA List	Density
Canada Thistle	<i>Cirsium arvense</i>	List B	Scattered
Russian Olive	<i>Elaeagnus angustifolia</i>	List B	Scattered
Common Teasel	<i>Dipsacus fullonum</i>	List B	Common along drainages
Chicory	<i>Cichorium intybus</i>	List C	Scattered
Field Bindweed	<i>Convolvulus arvensis</i>	List C	Common

Source: CDA, 2016; CDOT, 2017b

Because field surveys for the project occurred outside the active growing season for plants, not all noxious weeds were identified. Based on a field survey conducted late in the season, noxious weeds were primarily found within road right-of-way (ROW), in drainages, on open space lands, and are consistent with the areas identified by CDOT (CDOT, 2017). Due to the ability of noxious weed populations to fluctuate greatly from year to year, the project team identified areas where noxious weeds were the dominant vegetation and where they would readily become reestablished.

Impacts and Mitigation

No Action Alternative

The No Action Alternative has the potential to degrade habitat due to the presence and expansion of noxious weeds.

Proposed Action

The Proposed Action would result in soil disturbance from construction equipment. This disturbance would create favorable conditions for introducing and further spreading noxious weeds.

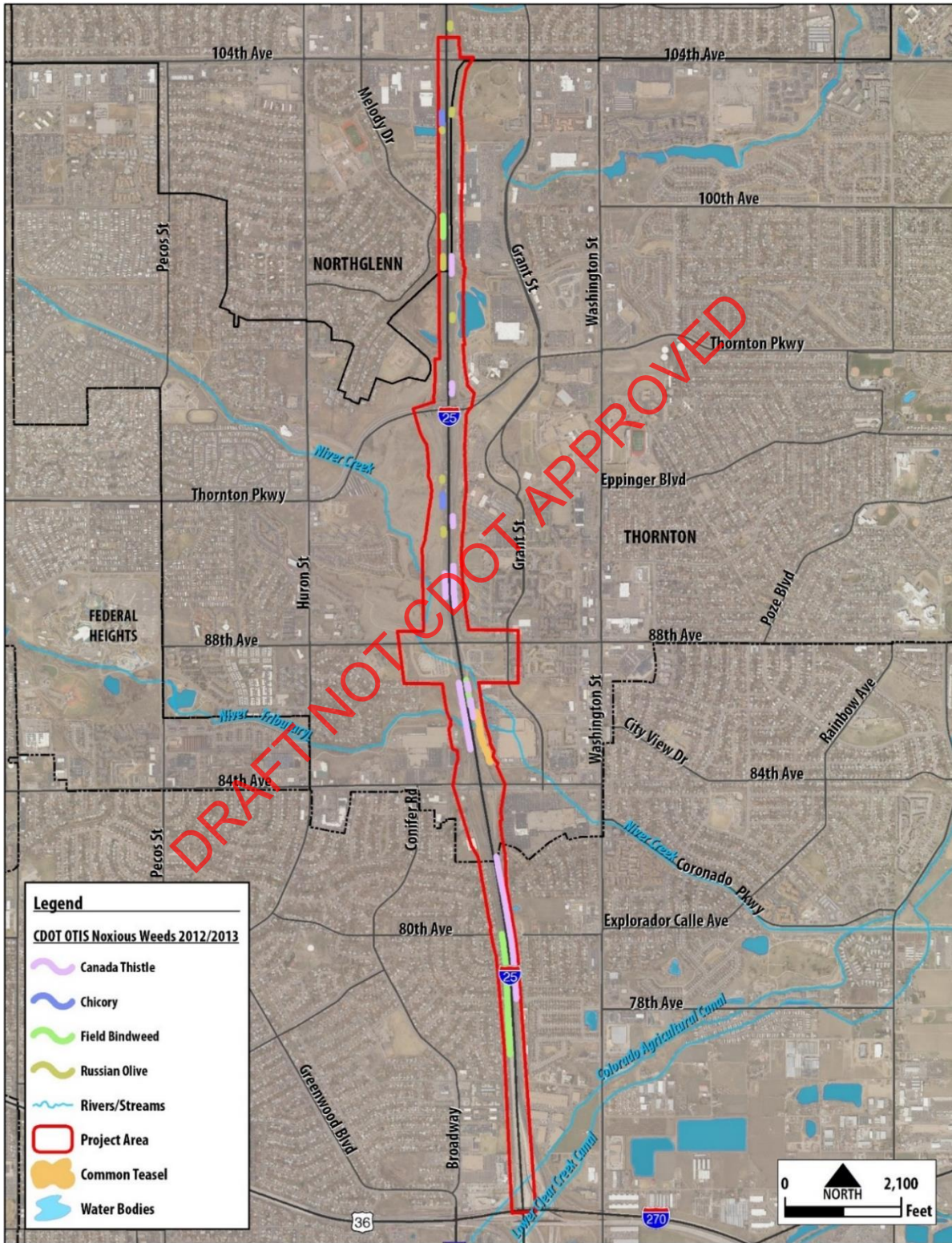
A separate noxious weed survey must be conducted, and mitigation activities must be identified (as either a CDOT Specification 217 or a Noxious Weed Management Plan) before any construction activities begin.

CDOT’s OTIS and FHU staff identified three “List B” plant species and two “List C” plant species designated as noxious weeds. No “List A” species were found. Also, most species are found throughout the open, native seeding areas throughout the roadway ROW and adjacent to drainages that cross the project area.

Noxious weed management is intended to follow these regulations and guidelines:

- ▶ CDA, Plant Industry Division, Colorado Noxious Weed Act, 35-5.5-101 119, CRS (2003)
- ▶ EO 13112 - Invasive Species
- ▶ FHWA Guidance on Invasive Species (FHWA, 1999)

Figure 5. Noxious Weeds Identified in the Field and from OTIS



Source: FHU, 2019b



2.7 Senate Bill 40 Resources

Senate Bill 40 (SB 40) is a regulatory vehicle requiring CDOT to obtain an SB 40 Wildlife Certification from CPW when “...any stream or its bank or tributaries...” in a SB 40 jurisdictional area are affected due to a state action. The level of SB 40 Wildlife Certification required on projects varies from programmatic to formal and depends on 13 specific criteria.

Based on Section III(A) of the *Guidelines for Senate Bill 40 Wildlife Certification* (CPW & CDOT, 2013), several streams meet the jurisdictional criteria under SB 40. These features include Badding Creek, Niver Creek, Niver Creek Tributary L, and ephemeral and intermittent tributaries to these features as identified by the USGS NHD (USGS, 2017).

This project will affect many trees and shrubs in the project area. SB 40 trees and shrubs must be inventoried before project construction begins as required by the SB 40 Wildlife Certification process. Any SB 40 trees or SB 40 shrubs affected by project construction must be mitigated. Mitigation requirements will be based on CPW requirements.

A survey of SB 40 resources within the project area was completed in October 2018. The survey identified two SB 40 trees within the limits of disturbance for the project. Additionally, the survey identified 0.41 acre of SB 40 shrubs within the limits of disturbance. **Figure 6** shows the SB 40 resources impacted by this project.

Impacts and Mitigation

No Action Alternative

The No Action Alternative has the potential to degrade SB 40 resources due to nearby development.

Proposed Action

The Proposed Action would result in the removal of 0.41 acre of riparian shrubs protected by SB 40 and 2 trees protected by SB 40.

Any SB 40 trees that the Proposed Action would affect will be mitigated on either a 1:1 basis or a shrub to tree replacement ratio depending on project-specific mitigation ratios identified by CPW during the SB 40 Wildlife Certification

process. Affected shrubs will be mitigated on an aerial square-footage basis.

The exact location of SB 40 tree and SB 40 shrub removals will be determined before the final design plan set is completed. Replacement vegetation will be shown on either final design plan sets and/or construction documents or as part of the SWMP. It is likely that the Proposed Action would fall under a Formal SB 40 Wildlife Certification approval, which will be required before beginning project construction activities.

2.8 Upland Tree and Shrub Resources

During the October 2018 survey, FHU staff also identified several areas within the project area containing landscaped or naturally occurring upland tree and shrubs. This includes landscaped vegetation present in the following areas: adjacent to the RTD park-N-Ride at 88th Avenue, in the I-25/84th Avenue interchange, in the I-25/Thornton Parkway interchange, and in other areas of CDOT’s ROW. **Figure 6** shows the locations of native and ornamental trees that would be affected by this project.

Impacts and Mitigation

No Action Alternative

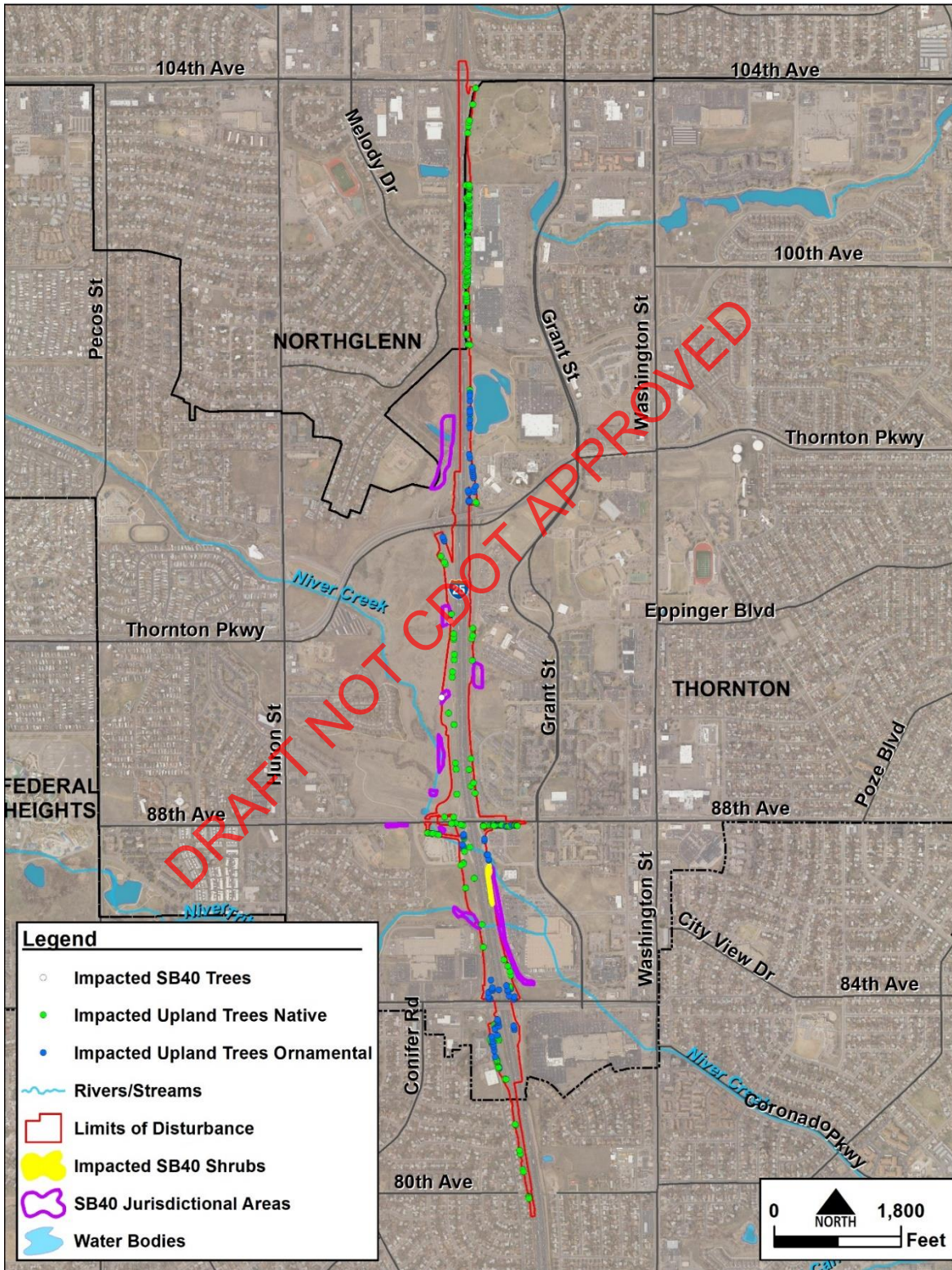
The No Action Alternative has the potential to degrade upland tree and shrub resources due to nearby development.

Proposed Action

The Proposed Action would result in the removal of 203 native upland trees and 84 ornamental trees. These trees and shrubs must be reviewed to identify which government entity will be required to mitigate for impacts on these resources.



Figure 6. Senate Bill 40 Trees/Shrubs and Upland Trees



Source: FHU, 2019b



2.9 Wildlife Resources

As an important public resource, wildlife warrants consideration during federally funded projects and is documented during transportation project development. Various federal laws have been established to protect wildlife, including the ESA, MBTA, the Bald and Golden Eagle Protection Act (BGEPA), and provisions of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

This section discusses the wildlife species known or potentially present in or near the project area. Information on species distribution was obtained from existing literature (CDOT, 2008a; CDOT & FHWA, 2010b; CDOT, 2011a; CDOT, 2011b; CDOT, 2014b); CPW data; USFWS data; CPW Natural Diversity Information Source (NDIS) data; and species information collected during the field surveys on February 14, 2017, and on July 2, 2018. The site visits also included a survey for potential raptor nests.

Based on the habitats present in the project area (Section 2.5), many species of mammals, birds, reptiles, and amphibians could occur within the project area. The following section briefly describes species that were observed during field visits, are likely to occur based on the presence of suitable habitat, or were identified in previous reports. Appendix B contains a full list of wildlife observed at the time of the field surveys.

While the CPW NDIS website used in previous studies is no longer available, the previous information on species occurrence in Adams County still applies.

Observed and potential terrestrial species include ungulates, carnivores, lagomorphs, rodents, and bird species. Table 3, which is similar to the table in Section 3.12.2.5 of the North I-25 Final Environmental Impact Statement (FEIS), identifies the most common wildlife found in the habitats associated with the project area. Figure 7 and Figure 8 provide examples of wildlife observed during the field surveys.

Table 3. Common Wildlife Species in the Project Area[†]

Habitat	Wildlife Species
Urban and Developed Areas	Red fox, raccoon, striped skunk, big brown bat, fox squirrel, deer mouse, house mouse, House Sparrow, European Starling, Common Grackle, House Finch, Mourning Dove, Rock Dove, Canada Goose, American Robin, and Barn Swallow
Streams, Riparian, and Wetland	Mule deer, white-tailed deer, coyote, red fox, raccoon, striped skunk, eastern cottontail, big brown bat, meadow vole, prairie vole, deer mouse, house mouse, Red-tailed Hawk, Cooper's Hawk, Swainson's Hawk, Northern Harrier, Great Horned Owl, American Kestrel, Great Blue Heron, Red-Winged Blackbird, Song Sparrow, Common Yellowthroat, Common Snipe, Northern Oriole, American Goldfinch, Yellow Warbler, Canada Goose, plains garter snake, western painted turtle, bullfrog, western chorus frog, Woodhouse's toad, and tiger salamander
Grassland and Open Space	Mule deer, coyote, striped skunk, red fox, white-tailed jackrabbit, eastern cottontail, black-tailed prairie dog, deer mouse, meadow vole, prairie vole, house mouse, Rough-legged Hawk, Red-Tailed Hawk, Swainson's Hawk, Northern Harrier, Great Horned Owl, American Kestrel, Vesper Sparrow, Western Meadowlark, House Sparrow, European Starling, Common Grackle, Mourning Dove, Canada Goose, Killdeer, Black-Billed Magpie, and bull snake

[†]This is a list of common wildlife in these habitats and should not be considered comprehensive nor should these species be considered present in the project area.

Figure 7. Black-tailed Prairie Dog Colony



Figure 8. Fresh Raccoon Tracks in Niver Creek



for many wildlife species. Permanent impacts on existing wildlife will be avoided and minimized to whatever extent possible through project design and implementation of the best management practices (BMPs) identified in the Central Shortgrass Prairie Programmatic BO. There are currently no plans to mitigate permanent impacts on wildlife due to the construction of this project.

2.10 Migratory Birds and Raptors

As identified in the *North I-25 Final EIS* (CDOT and FHWA 2011a), the *North I-25 PEL Corridor Conditions Report* (CDOT and FHWA, 2014), and the *I-25 and 84th Avenue Ecological Assessment* (CDOT & FHWA, 2010b), the MBTA protects many migratory birds and raptors found in or near the project area, which also contains several birds that are invasive and not protected under the MBTA. Because the field survey was conducted outside the normal nesting season for migratory birds (April 1 to August 31), the list of bird species identified during the field survey is expanded to include species from these previous studies for reporting on migratory birds and raptors potentially present within the project area. A review of the CPW Species Activity Mapping (SAM) data did not indicate the presence of known Bald Eagle (*Haliaeetus leucocephalus*) nests in or near the project area.

It is important to note that raptors found in Colorado have earlier nesting seasons than other migratory birds in Colorado. Great Horned Owls (*Bubo virginianus*) and Bald Eagles start courtship and nest-building as early as November, while the Burrowing Owl (*Athene cunicularia*) migrates into Colorado in March and can be present until October 31. Surveys for nesting raptors and other migratory birds must occur before construction.

Table 4 shows bird species identified in the field and in previous studies that are likely to occur in the project area.

Impacts and Mitigation

No Action Alternative

The No Action Alternative has the potential to degrade wildlife habitat due to loss and fragmentation from nearby development.

Proposed Action

Effects on wildlife from the Proposed Action would include permanent habitat loss and degradation/disruption of habitat (noise effects). Temporary impacts would include loss of low-quality foraging habitat for general wildlife species.

Temporary impacts on wildlife from loss of vegetation will be mitigated by revegetating temporarily impacted areas post-construction and incorporating seed mixes and plantings of native species. The seed mix will create foraging habitat



Table 4. Migratory Birds and Raptors within the Project Area

Common Name	Species Name	Previous Study
Common Grackle	<i>Quiscalus quiscula</i>	<ul style="list-style-type: none"> • North I-25 FEIS
House Finch	<i>Carpodacus mexicanus</i>	<ul style="list-style-type: none"> • Field Survey • North I-25 FEIS
Mourning Dove	<i>Zenaida macroura</i>	<ul style="list-style-type: none"> • Field Survey • North I-25 FEIS
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	<ul style="list-style-type: none"> • Field Survey
Canada Goose	<i>Branta canadensis</i>	<ul style="list-style-type: none"> • Field Survey • North I-25 FEIS
American Robin	<i>Turdus migratorius</i>	<ul style="list-style-type: none"> • Field Survey • North I-25 FEIS
Barn Swallow	<i>Hirundo rustica</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Vesper Sparrow	<i>Poocetes gramineus</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Western Meadowlark	<i>Sturnella neglecta</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Horned Lark	<i>Eremophila alpestris</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Killdeer	<i>Charadrius vociferous</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Black-billed Magpie	<i>Pica</i>	<ul style="list-style-type: none"> • Field Survey • North I-25 FEIS
Red-tailed Hawk	<i>Buteo jamaicensis</i>	<ul style="list-style-type: none"> • Field Survey • North I-25 FEIS
Great Horned Owl	<i>Bubo virginianus</i>	<ul style="list-style-type: none"> • North I-25 FEIS
American Kestrel	<i>Falco sparverius</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Cooper's Hawk	<i>Accipiter cooperii</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Swainson's Hawk	<i>Buteo swainsoni</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Northern Harrier	<i>Circus cyaneus</i>	<ul style="list-style-type: none"> • North I-25 FEIS
Rough-legged Hawk	<i>Buteo lagopus</i>	<ul style="list-style-type: none"> • North I-25 FEIS

Impacts and Mitigation

No Action Alternative

The No Action Alternative has the potential to impact migratory birds and raptors due to nearby development.

Proposed Action

Nineteen migratory bird species were observed within the project area as identified in **Table 4**. It is likely that other migratory birds occupy the project area but were not detected during surveys. Impacts on these species could range from removal of nests in the inactive season to habitat loss associated with the permanent removal of shortgrass prairie, riparian habitat, and wetlands.

To avoid impacts on migratory birds, the Proposed Action will incorporate a CDOT Special Specification 240 (Protection of Migratory Birds) as part of the final plan set. Specification 240 will be modified, as needed, to provide protections for any migratory birds that may be present outside the typical nesting season, specifically Great Horned Owls and Red-Tailed Hawks, as they were observed within the project area. A qualified biologist will conduct a survey for any active MBTA nests if construction occurs within the nesting season of birds (April 1 to August 31). A biologist is considered qualified if they have a bachelor's degree in the field of environmental science and two years of relevant work experience. A qualified wildlife biologist will conduct a survey for nesting Great Horned Owls if construction occurs within its typical nesting season (January 1 to July 31). A qualified wildlife biologist will also conduct a survey for nesting Red-tailed Hawks if construction occurs within its typical nesting season (February 15 to July 15).

2.11 Wildlife Corridors

The North I-25 FEIS identified several drainages that are primary wildlife corridors in the overall project area of the FEIS and that focused on big game or large mammals such as deer (*Odocoileus* spp.), elk (*Cervus elaphus*), black bears (*Ursus americanus*), and mountain lions (*Felis concolor*). However, no such wildlife corridor was identified in this section of the FEIS.

During the field survey on February 14, 2017, FHU staff identified several wildlife corridors that exist within the project area. These corridors were based on evidence (tracks and scat) observed near, or in,



the drainages in the project area. Most of the continuous movement evidenced by tracks was focused at the Niver Creek and Niver Creek Tributary L drainages, including concrete box culverts (CBCs) and the corrugated metal pipes that exist under I-25 and adjacent roadways associated with these drainages, as shown on **Figure 9**. The existing CBC at Niver Creek Tributary L measures 8 feet high by 8 feet wide.

FHU staff did not observe any tracks or scat of any animals larger than a coyote during the field survey.

FHU staff also reviewed available information from Colorado State Patrol vehicle collision records for domestic and wild animal collisions from January 1, 2012, to June 30, 2016 (most recent crash information). Records show that no domestic or wild animal vehicle collisions were reported between mile marker (MM) 217 and 220.

However, based on animal carcass collection information collected by CDOT maintenance crews and provided to CDOT Environmental Programs Branch (CDOT, 2018), three mule deer carcasses were removed in/adjacent to the project limits. This includes one carcass at MM 217.1 in May 2017 and two carcasses at MM 219 in June 2017. One raccoon carcass was found in January 2018 at MM 217, and an unknown carcass was recorded in May 2018 at MM 218.5.

Drainages near MM 217.1 include the Colorado Agricultural Canal and the Lower Clear Creek Canal. Both canals are placed in pipes underground through the CDOT ROW at the I-25/US 36 interchange. MM 217.1 is also approximately 0.50 mile north of Clear Creek.

Drainages near MM 219 include Niver Creek and the Niver Creek Open Space. Niver Creek is redirected to an underground pipe through the CDOT ROW near MM 219. The 88th Avenue Bridge is also near MM 219, along with a pedestrian underpass that the deer may have been attempting to use. As identified previously, the only medium-to-large mammal usable wildlife underpass structure is the Niver Creek Tributary L CBC (**Figure 9**).

Impacts and Mitigation

No Action Alternative

The No Action Alternative would have no direct impacts on wildlife corridors.

Figure 9. Niver Creek Tributary L Concrete Box Culvert



Proposed Action

The Proposed Action should have limited impact on wildlife corridors. The existing pedestrian underpass will temporarily be closed during construction for safety but shall reopen post-construction providing a potential crossing point for wildlife. The CBC at Niver Creek Tributary L will be replaced during construction with a 20-ft by 10-ft culvert. There would be no changes to the current alignment crossing locations near MM 217.

2.12 State and Federal Special Status Species

Previous studies that include or overlap with the project area identified all potential state and federally protected species. A Programmatic Biological Assessment/Biological Opinion (PBA/PBO) was also completed for the North I-25 FEIS, which overlapped with this project area.

However, due to the amount of time that has passed since the completion of the initial PBA/PBO, FHU staff acquired an updated federal threatened and endangered (T&E) species list through the USFWS IPaC website to confirm that no new species have been listed with habitat present in the project area since the PBA/PBO was obtained (USFWS, 2017b). As identified in **Table 5**, no new federal T&E species were identified to have suitable habitat in the project area (USFWS, 2017b).



Table 5. Threatened and Endangered Species and State Species of Concern in the Project Area

Common Name	Status	Habitat	Presence
MAMMALS			
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	SC	Black-tailed prairie dogs form large colonies or "towns" in shortgrass or mixed prairie.	Many active prairie dog colonies are present in the highway ROW and in adjacent open space and vacant parcels. The February 2017 field survey identified 34.02 acres of prairie dog colonies in and around the project area. The Proposed Action would affect approximately 3.7 acres of active prairie dog colonies.
Northern pocket gopher (<i>Thomomys talpoides</i>)	SC	Northern pocket gophers are found in many habitat types, including agricultural and pasture lands, semidesert shrublands, and grasslands at lower elevations upwards into alpine tundra.	Not Present: Marginal to no suitable habitat is left in the project area; therefore, this project will have no effect on the northern pocket gopher.
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	FT/ST	Preble's meadow jumping mouse (PMJM) inhabit well-developed riparian habitat with adjacent relatively undisturbed grassland communities and a nearby water source. Well-developed riparian habitat includes a dense combination of grasses, forbs, and shrubs; a taller shrub and tree canopy may be present. PMJM have been found to regularly use uplands at least as far out as 100 meters beyond the 100-year floodplain. PMJM typically enter hibernation nests between September and October and emerge the following May.	Because this project is located within the Denver Metro Block Clearance Zone, no effects are expected and no additional consultation is required with the USFWS.
Townsend's big-eared bat (<i>Corynorhinus townsendii pallascens</i>)	SC	Townsend's big-eared bat is a western species occupying semidesert shrublands, pinon-juniper woodlands, and open montane forests. Townsend's big-eared bat can be found throughout Colorado, except on the eastern plains. Its distribution seems to be determined by availability of roosts, such as caves, mines, tunnels, crevices, and masonry structures with suitable temperatures, making the conservation of suitable roosts essential to the management of this species.	Not Present: This project does not contain any of the identified vegetation and roosting components that are required. Therefore, this project will have no effect on Townsend's big-eared bat.



I-25 (US 36 to 104th Avenue) Environmental Assessment

Common Name	Status	Habitat	Presence
BIRDS			
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	BGEPA, ST	Bald Eagles are seldom seen far from water, such as large rivers, lakes, and seacoasts. In Colorado, they are often found near reservoirs and along major rivers during both the summer and winter. During the breeding season, Bald Eagles defend territories and most frequently can be found nesting in large cottonwood trees. In the winter, Bald Eagles communally roost in large trees for warmth and protection and forage occasionally over prairie dog colonies.	Suitable nesting habitat is present near Badding Reservoir; however, no nest sites or roost areas have been identified for Bald Eagles at that location or anywhere else in the project area. Therefore, this project will have no effect on Bald Eagles. Additionally, the CPW SAM data did not indicate the presence of known Bald Eagle nests near the project area.
Least Tern† (<i>Sterna antillarum</i>) Interior population	FE/SE	Breeding birds nest on bare sandy shorelines of islands in reservoirs. Migrants occur at reservoirs, lakes, and rivers with bare sandy shorelines.	Not Present: No large waterbodies or reservoirs are nearby and no known nesting locations are present. CDOT will report water usage to the USFWS to address downstream water depletions.
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	FT/ST	Mexican Spotted Owls inhabit forested mountains and canyons with mature trees that create high, closed canopies, which are good for nesting.	Not Present
Piping Plover† (<i>Charadrius melodus</i>)	FT/ST	Piping Plovers occur as migrants, arriving around April 1. Most have passed through by the end of May. They can be found in the eastern part of the state. Nesting habitat in Colorado is on sandy lakeshore beaches, sandbars within riverbeds, or even sandy wetland pastures. An important aspect of this habitat is that of sparse vegetation.	Not Present: CDOT will report water usage to the USFWS to address downstream water depletions.
Western Burrowing Owl (<i>Athene cunicularia</i>)	SC	Western Burrowing Owls are primarily found in grasslands and mountain parks, usually in or near prairie dog towns. The Burrowing Owl also uses well-drained steppes, deserts, prairies and agricultural lands. This species also favors well-grazed early successional grasslands with soils having substantial sand content. Openness, short vegetation, and burrow availability are also essential.	The presence of prairie dog colonies and open space lands provides potential habitat for the Burrowing Owl.
Whooping Crane† (<i>Grus americana</i>)	FE	Whooping Cranes live in mudflats around reservoirs and in agricultural areas. While wintering, they live on salt flats dominated by coastal salt grass. Their nesting grounds are wetland communities dominated by bulrush. Whooping Cranes have not been seen in Colorado since 2002.	Not Present: CDOT will report water usage to the USFWS to address downstream water depletions.

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I-25 (US 36 to 104th Avenue) Environmental Assessment

Common Name	Status	Habitat	Presence
FISH			
Pallid Sturgeon† (<i>Scaphirhynchus albus</i>)	FE	Pallid sturgeon requires turbid water, diverse habitat types, and flow rates afforded by large free-flowing rivers.	Not Present: CDOT will report water usage to the USFWS to address downstream water depletions.
REPTILES AND AMPHIBIANS			
Common Garter snake (<i>Thamnophis sirtalis</i>)	SC	Garter snakes inhabit streams, ditches, ponds, and associated adjacent vegetation.	Present
Northern Leopard Frog (<i>Rana pipiens</i>)	SC	Northern leopard frogs inhabit streams, lakes, ponds, marshes, and wet meadows.	Habitat is present at Niver Creek and its tributaries and at Badding Reservoir, Badding Reservoir Wildlife Habitat Area. However, no confirmed records could be found.
FLOWERING PLANTS			
Colorado Butterfly Plant (<i>Oenothera coloradensis coloradensis</i>)	FT	The Colorado butterfly plant, a perennial terrestrial orchid, occurs along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams.	Not Present: Niver Creek and Niver Creek Tributaries are heavily incised channels with dense overstories of cattail and willow, contain large amounts of soil-layered riprap, or are heavily grazed by isolated prairie dogs. These areas are degraded and lack the quality of habitat seen in more suitable locations. Therefore, this project is expected to have no effect on the Colorado butterfly plant.

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Common Name	Status	Habitat	Presence
Ute ladies'-tresses orchid (<i>Spiranthes diluvialis</i>)	FT	Ute ladies'-tresses orchids are known primarily from moist meadows associated with perennial stream terraces, floodplains, and oxbows at elevations between 4,300 and 6,850 feet. Additional vegetation and hydrology types occupied include seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, and lakeshores. In addition, 26 populations have been discovered along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, reservoirs, and other human-modified wetlands. New surveys have also expanded the elevational range of the species from 720 to 1,830 feet in Washington to 7,000 feet in northern Utah. Over one-third of all known Ute ladies'-tresses populations are found on alluvial banks, point bars, floodplains, or oxbows associated with perennial streams.	Not Present: Habitat associated with drainages is degraded or overgrown with sandbar willow and unsuitable.
Western prairie† fringed orchid (<i>Platanthera praeclara</i>)	FT	The western prairie fringed orchid is a perennial orchid of the tallgrass prairie and is found most often on unplowed, calcareous prairies and sedge meadows. Soil moisture is a critical determinant of growth, flowering, and distribution of western prairie fringed orchids.	Not Present: No tallgrass prairies or sedge meadows are present. CDOT will report water usage to the USFWS to address downstream water depletions.

FE = Federally Endangered
FT = Federally Threatened

ST = State Threatened
SE = State Endangered

SC = State Species of Special Concern

† This project has elements that will cause a depletion to the South Platte River basin. In order to address the effects this depletion will have on federally listed species downstream that depend on the river for their survival, CDOT, as a state agency, is participating in the South Platte Water Related Activities Program (SPWRAP). CDOT is cooperating with FHWA, which provides a federal nexus for the project. In response to the need for formal consultation for the water used from the South Platte basin, FHWA has prepared a Programmatic Biological Assessment (PBA) dated February 22, 2012, estimating total water usage until 2019. The PBA has since been extended through 2032 and addresses the following species: Least Tern (interior population) (*Sternula antillarum*), pallid sturgeon (*Scaphirhynchus albus*), Piping Plover (*Charadrius melodus*), western prairie fringed orchid (*Platanthera praeclara*), and the Whooping Crane (*Grus americana*). On April 4, 2012, the USFWS signed a Biological Opinion that concurs with this approach and requires a yearly reporting of water usage. The extension, which has the same reporting requirements, was signed by the USFWS on March 29, 2019. The water used for this project will be reported to the USFWS at the year's end after the completion of the project as per the aforementioned consultation. Effects on species not addressed in the PBA or affected by causes other than water depletions to the South Platte will be analyzed separately.

References:

- CPW Species Profiles - Accessed February 2017
- USFWS Species Profiles - ECOS, IPaC February 2017
- CPW SAM Data - Accessed November 2018

2.12.1 Shortgrass Prairie Initiative

In January 2004, CDOT, CPW, FHWA, USFWS, and public and private partners agreed on a "Shortgrass Prairie Initiative" (SGPI) as an alternative way to address species impacts in the eastern third of the state. The SGPI provides programmatic clearance for CDOT activities on the existing road network in the eastern third of Colorado until 2024.

Covered transportation projects include (1) bridge repairs for all existing bridges; (2) approximately 4,310 miles of resurfacing/overlays and

accompanying shoulder improvements; (3) maintenance along existing transportation corridors; and (4) safety, reconstruction, capacity, and other transportation improvements (USFWS, 2004; Venner, 2001). The initiative covers three federally listed threatened, endangered, and candidate species, as well as 29 species of concern.

The project area contains approximately 53 acres of shortgrass prairie land.

Species covered by the SGPI that potentially occur within the project area include the Bald Eagle, black-tailed prairie dog, Western Burrowing Owl, and northern leopard frog.



2.12.2 Black-Tailed Prairie Dog

The project area includes and is within the vicinity of several areas of black-tailed prairie dog colonies (**Figure 10**). These areas include small colonies within the I-25 highway ROW and small-to-medium-sized colonies found in vacant lots and open space lands adjacent to I-25. Based on the survey on February 14, 2017, a recent grass fire has potentially affected the prairie dog colony at Badding Open Space. FHU staff observed that recent removal activities have occurred east of the 88th Avenue park-N-Ride, east of I-25. For all other prairie dog colonies, no other activities (fire, removal, bubonic plague, etc.) were observed causing impacts on the colonies.

This project must follow CDOT's prairie dog policy, which applies to all CDOT projects. The prairie dog policy must be incorporated into a Project Special Specification 240 and typically requires a prairie dog management plan during construction. Coordination must occur with the CDOT Region 1 biologist during the preparation of the prairie dog management plan.

2.12.3 Western Burrowing Owl

Western Burrowing Owls are primarily found in grasslands and mountain parks, usually in or near prairie dog towns. The presence of prairie dog colonies and open space lands within and near the project area provides potential habitat for the Burrowing Owl. A survey for nesting Burrowing Owls would be conducted if construction occurs within their typical nesting season (March 15 to October 31).

2.12.4 Common Garter Snake

Common garter snakes inhabit wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches. The common garter snake may roam far from water during wet, mild weather.

Suitable habitat for the common garter snake is present in the project area in areas associated with Badding Creek, Niver Creek, Niver Creek Tributary L, and associated tributaries to these drainages.

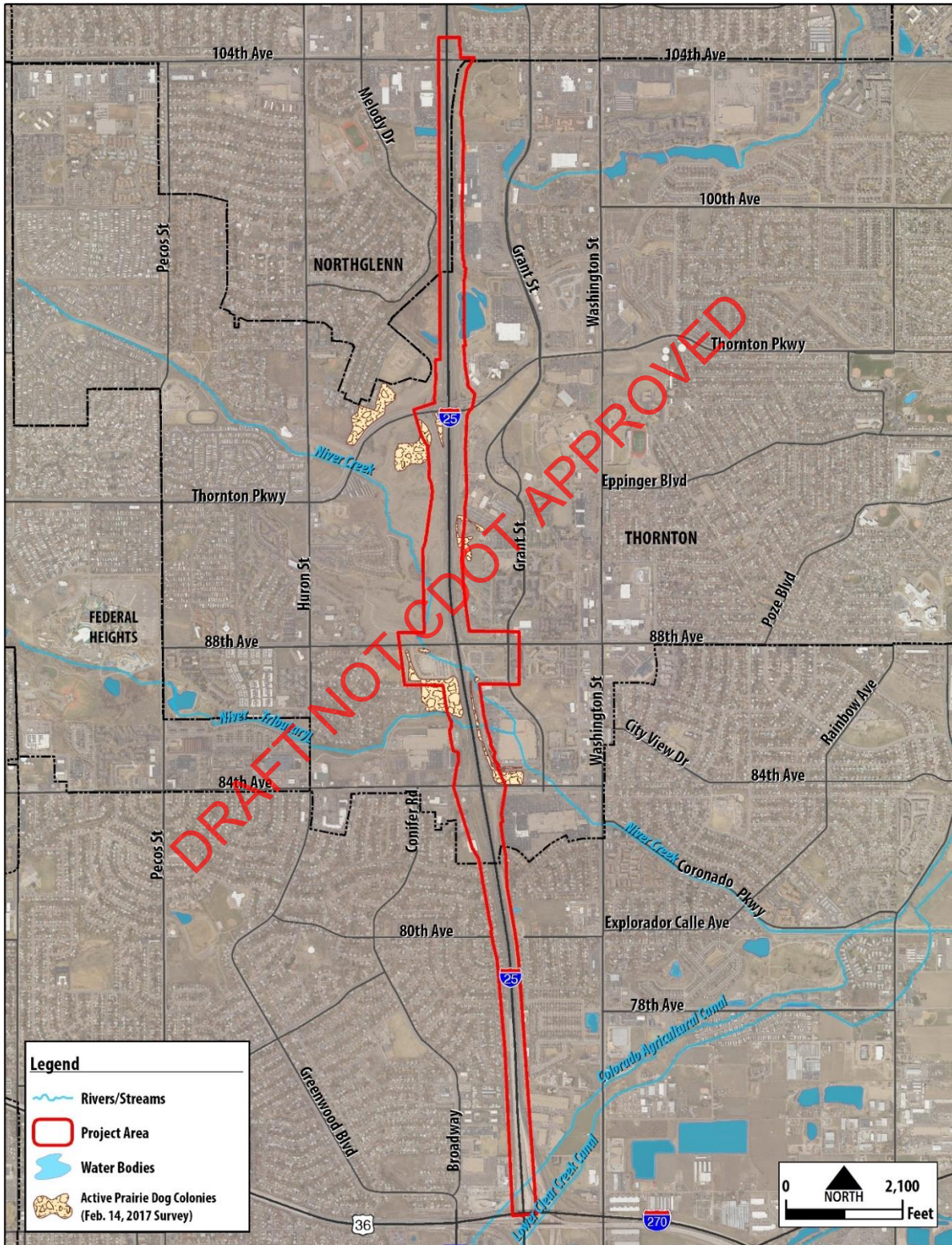
Project construction must use BMPs to avoid and minimize any unnecessary impacts (erosion and sediment deposit) on wildlife habitat (wetland, riparian, prairie dog colonies, and grassland areas).

2.12.5 Northern Leopard Frog

Northern leopard frogs inhabit wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches. Northern leopard frogs inhabit elevations ranging from below 3,500 feet to above 11,000 feet (CPW, 2017b). Potential suitable habitat for the northern leopard frog is present in the project area in areas associated with Badding Creek, Niver Creek, Niver Creek Tributary L, and associated tributaries to these drainages. However, based on the February 2017 field survey, these drainages are in incised channels with soil layered riprap.

Because of the presence of the aquatic resources identified previously, project construction must use BMPs to avoid and minimize any unnecessary impacts (erosion and sediment deposit) on wildlife habitat (wetland, riparian, prairie dog colonies, and grassland areas).

Figure 10. Observed Active Prairie Dog Colonies



Source: FHU, 2019b



2.12.6 Impacts and Mitigation

No Action Alternative

The No Action Alternative has the potential to degrade habitat due to loss and fragmentation of habitat from nearby development.

Proposed Action

The only potential impact on federally threatened and endangered species from this project is on those species affected by downstream depletions to the South Platte River, including the Least Tern (interior population), Piping Plover, Whooping Crane, pallid sturgeon, and western prairie fringed orchid.

Potential impacts on state listed species include the black-tailed prairie dog, Western Burrowing Owl, common garter snake, and northern leopard frog.

Black-tailed prairie dogs are considered a “keystone” species because they benefit up to 150 other wildlife species, including plants and insects. The loss of black-tailed prairie dogs would have long-term indirect impacts on several other wildlife species that reside year-round in the project area or that use the project area seasonally (migration). Many species use the project area and depend on black-tailed prairie dogs and may not return due to loss of habitat.

Removing the prairie dog colonies would remove potential habitat for the Western Burrowing Owl. Temporary impacts that could occur would include disturbance of Burrowing Owl habitat due to noise and activity.

There is a potential for permanent impacts on the common garter snake and northern leopard frog due to loss of habitat. Temporary impacts would include direct mortality from construction activities associated with construction vehicle use.

A PBA/PBO was completed for the North I-25 FEIS, which overlapped with this project area. Because no new state or federally protected species habitat was found within the project area, impacts of the Proposed Action are covered under the existing PBA/PBO.

Shortgrass Prairie Initiative

Permanent impacts on existing resources will be avoided and minimized to whatever extent possible through project design and implementation of BMPs identified in the Central

Shortgrass Prairie Programmatic BO. Impacts to the shortgrass prairie have been previously mitigated through the SGPI.

Black-Tailed Prairie Dog

CDOT’s prairie dog policy, which applies to all of its projects, must be followed for this project. The prairie dog policy must be incorporated into a Project Special Specification 240 and typically requires a prairie dog management plan during construction. Coordination must occur with the CDOT Region 1 biologist during the preparation of the prairie dog management plan.

Western Burrowing Owl

A qualified wildlife biologist will conduct a survey for nesting Western Burrowing Owls if construction occurs within the typical nesting season for Western Burrowing Owls (March 15 to October 31). If Burrowing Owl nests are found within the project area, no construction activity will occur within 225 feet of the nest.

Common Garter Snake and Northern Leopard Frog

Due to the presence of the aquatic resources listed previously, project construction must use BMPs to avoid and minimize any unnecessary impacts (erosion and sediment deposit) on wildlife habitat (wetland, riparian, prairie dog colonies, and grassland areas).

2.13 Aquatic Resources

The project area is located within the Middle South Platte River-Cherry Creek Hydrologic Unit Code (HUC) 8 subwatershed (10190003) and more specifically, an un-named HUC 12 subwatershed identified as 101900030608.

Surface water resources within the project area include Badding Creek, Badding Reservoir, Croke Lake, Niver Creek, Niver Creek Tributary L, associated tributaries to these drainages, and several water quality/detention basins.

Badding Creek and Niver Creek are perennial waterways; however, several ephemeral and intermittent tributaries to these two creeks are present within or adjacent to the project area. While the tributaries are too intermittent to provide direct spawning habitat, they do provide water, leaf litter, debris, and sediment for fish spawning downstream.



Impacts and Mitigation

No Action Alternative

The No Action Alternative would have no direct impacts on aquatic resources.

Proposed Action

The Proposed Action would result in no permanent impacts on aquatic resources, such as impeding fish movement. There is the potential for temporary impacts, including erosion and sediment deposits to bodies of water within the project area.

Water quality BMPs will treat most runoff and potentially improve water quality in other areas (capturing runoff from agricultural lands).

2.14 Aquatic Species

As identified in the *North I-25 FEIS*: “Ditches, streams, and water bodies in the project area potentially support a variety of aquatic insects, macroinvertebrates, and fish” (CDOT & FHWA, 2011a).

Several common fish species may potentially be present in creeks and streams in the project area. The list of fish potentially present includes common carp (*Cyprinus carpio*), creek chub (*Semotilus atromaculatus*), fathead minnow (*Pimephales promelas*), Johnny darter (*Etheostoma nigrum*), longnose sucker (*Catostomus catostomus*), longnose dace (*Rhinichthys cataractae*), green sunfish (*Lepomis cyanellus*), and white sucker (*Catostomus commersoni*).

Impacts and Mitigation

No Action Alternative

The No Action Alternative would have no direct impacts on aquatic species.

Proposed Action

The Proposed Action would result in the temporary loss of potential cover for aquatic species, including riparian vegetation along the stream channel that provides shading, cover, nutrients, and potential forage habitat.

All SB 40 trees that are removed would be replaced because these trees could create cover for aquatic species.

2.15 Wetlands and Other Waters of the U.S.

In recognition of the importance of clean water and the ecological value of wetlands, in 1977, the U.S. Congress passed the CWA to protect the physical, biological, and chemical quality of WUS, including adjacent wetlands. Section 404 of the CWA defines WUS as all traditional navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. The USACE Regulatory Program administers and the EPA enforces Section 404 of the CWA.

As identified in **Section 2.0** of this report, wetlands have been previously reported by several studies, including a formal delineation completed by the North I-25 FEIS project team and by the I-25 and 84th Avenue Categorical Exclusion project team.

FHU staff conducted a wetland verification and delineation on February 14, 2017, and on July 2, 2018, to identify any changes in previously delineated wetlands, delineate any new wetlands, and remove any previously delineated wetlands that were no longer present.

For further information on wetlands in the project area, refer to the *I-25 (US 36 to 104th Avenue) Environmental Assessment - Wetland Delineation Technical Report* (FHU, 2019a). **Table 6** summarizes wetlands delineated from the February 2017 and July 2018 surveys. **Figure 11** through **Figure 17** show the locations of wetlands.

As identified in **Table 6**, the project area included 64 previously delineated wetlands and open water areas, one of which was removed next to the Thornton Parkway on-ramp to northbound I-25.

FHU staff delineated five new wetlands in the project area during the field survey. **Figure 11**, **Figure 12**, and **Appendix A** provide examples of the vegetation that was present at these locations.

This project will require the completion of a Wetland Finding Report for project permanent wetland impacts exceeding 500 square feet. This project may require that a Functional Assessment of Colorado Wetlands (FACWet) be completed as part of the Wetland Finding if project permanent



wetland impacts exceed 0.10 acre. The Wetland Finding Report is a requirement for completing Form 128, a key element of the CDOT and FHWA NEPA process.

A Section 404 Individual Permit was acquired as part of the *North I-25 FEIS*, which covered this project area. However, due to the substantial changes of the project design and project elements, the Section 404 Individual Permit will not be applied to this project for wetland impacts. Instead, a separate Section 404 permit will be acquired from the USACE for project impacts. Coordination between CDOT and USACE is ongoing to establish independent utility for the Proposed Action from the *North I-25 FEIS* Section 404 permit.

Impacts and Mitigation

No Action Alternative

The No Action Alternative would have no direct impacts on wetlands and other WUS.

Proposed Action

The Proposed Action would result in approximately 0.4 acre of permanent wetland impacts, including

impacts on 0.344 acre of wetlands previously delineated in the FEIS and 0.021 acre of new wetlands delineated for this report. **Figure 18**, **Figure 19**, and **Figure 20** identify the locations of impacted wetlands.

The 0.344 acre of wetlands previously delineated in the FEIS was permitted and mitigated for. The 0.021 acre of impacts to new wetlands delineated for this report will require a Wetland Finding Report and FACWet analysis (if wetland permanent impacts are 0.10 acre or greater), as well as a CWA Section 404 Pre-Construction Notification/Permit Request.

Impacts on wetlands and jurisdictional open water will be avoided and minimized to the greatest extent possible during final design. Mitigation for temporary and permanent wetland impacts will be accomplished through onsite mitigation, offsite mitigation, purchase of wetland bank credits, or use of a separate strategy approved by the USACE, to both jurisdictional and non-jurisdictional wetlands on a 1:1 basis.

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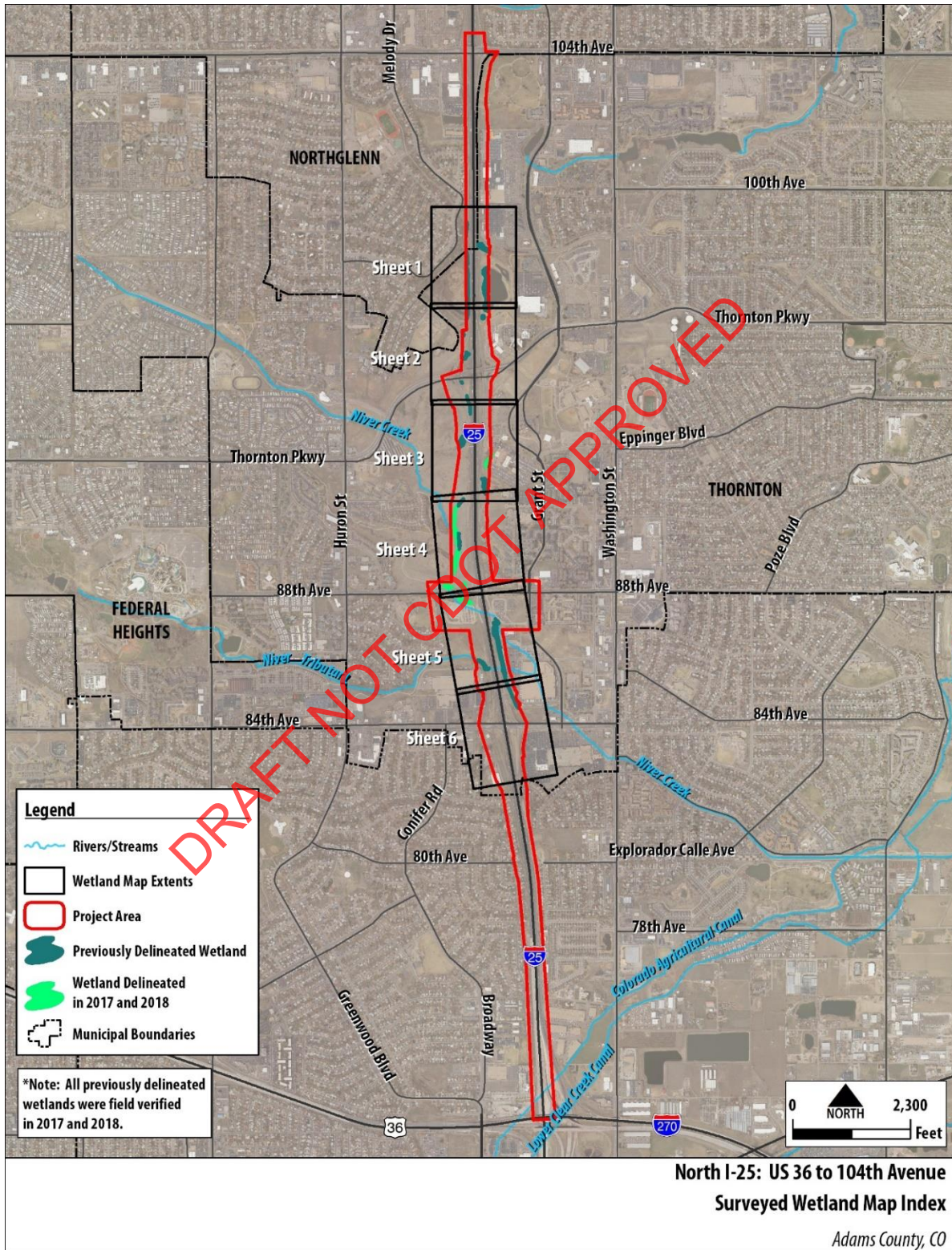
Table 6. Summary of Wetlands in the Project Area

Wetland IDs	Newly or Previously Delineated	Cowardin Classification and Jurisdictional Status	Total Acreage
127, 848, 849, 850, 223, 225, 226, 229, 230, 234, 493, 496, 497, 498, 499, 500, 501, 526, 574, 674, 677, 679, 681, 721, 723, 725, 727, 731, 732, 735, 784, **	Previously Delineated	PEM	1.81
126, 845, 847, 224, 227, 228, 231, 232, 233, 494, 495, 525, 573, 675, 676, 678, 680, 719, 720, 722, 724, 726, 728, 729, 730, 733, 734, 736, 777, 781, 782, 783	Previously Delineated	PSS	2.80
504	Previously Delineated	Open Water (PUB/PAB - commonly referred to as a pond)	1.49
21180-01, 21180-02, 21180-03, 21180-05	Newly Delineated	PEM	0.49
21180-04	Newly Delineated	PSS	0.05

**One previously delineated wetland was determined to no longer have wetland characteristics during visual inspection.
 PEM = Palustrine Emergent PUB/PAB = Palustrine Unconsolidated Bottom, commonly referred to as a pond
 PSS = Palustrine Scrub/Shrub

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Figure 11. Wetland Index Map



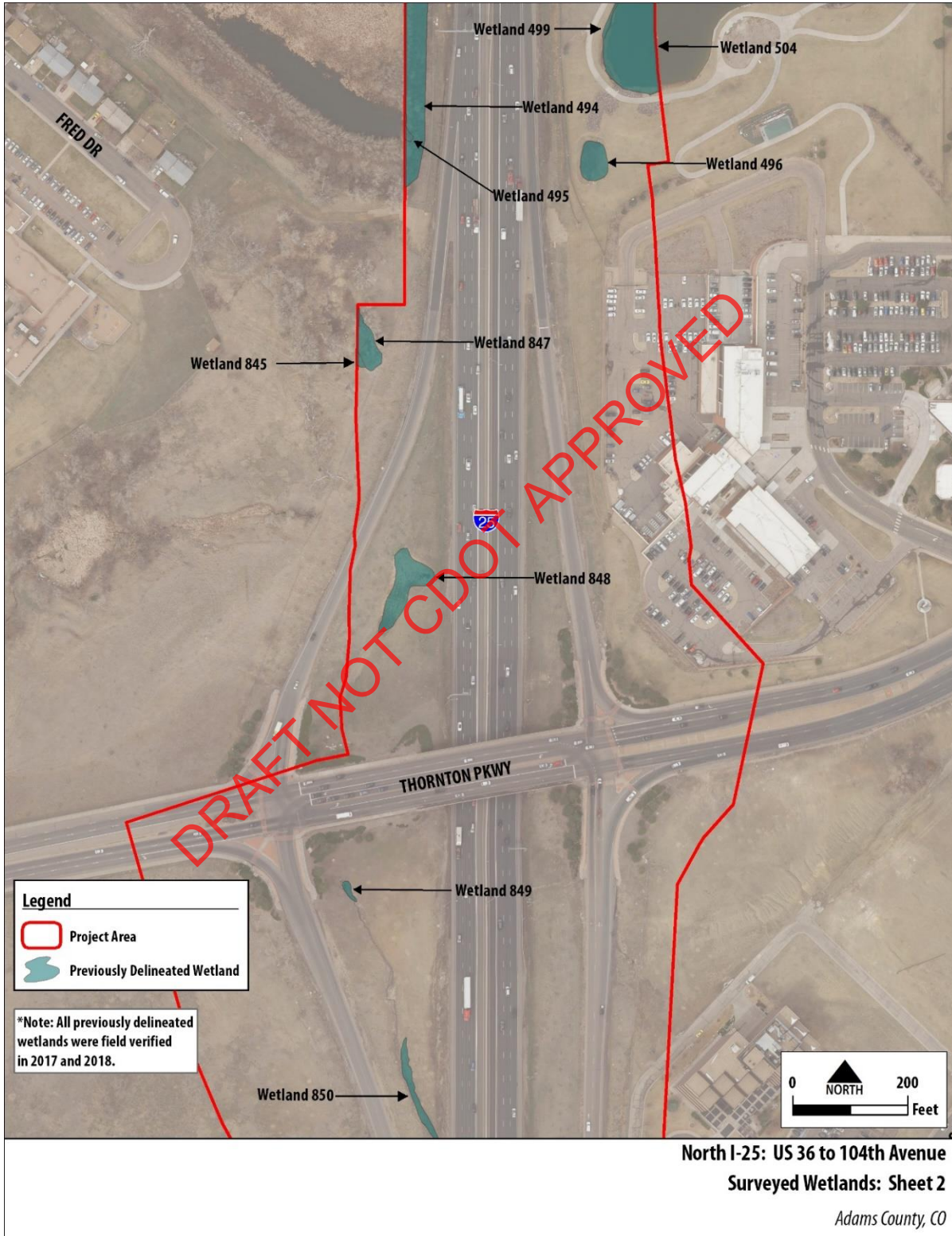
Source: FHU, 2019b

Figure 12. Wetland Map Sheet 1



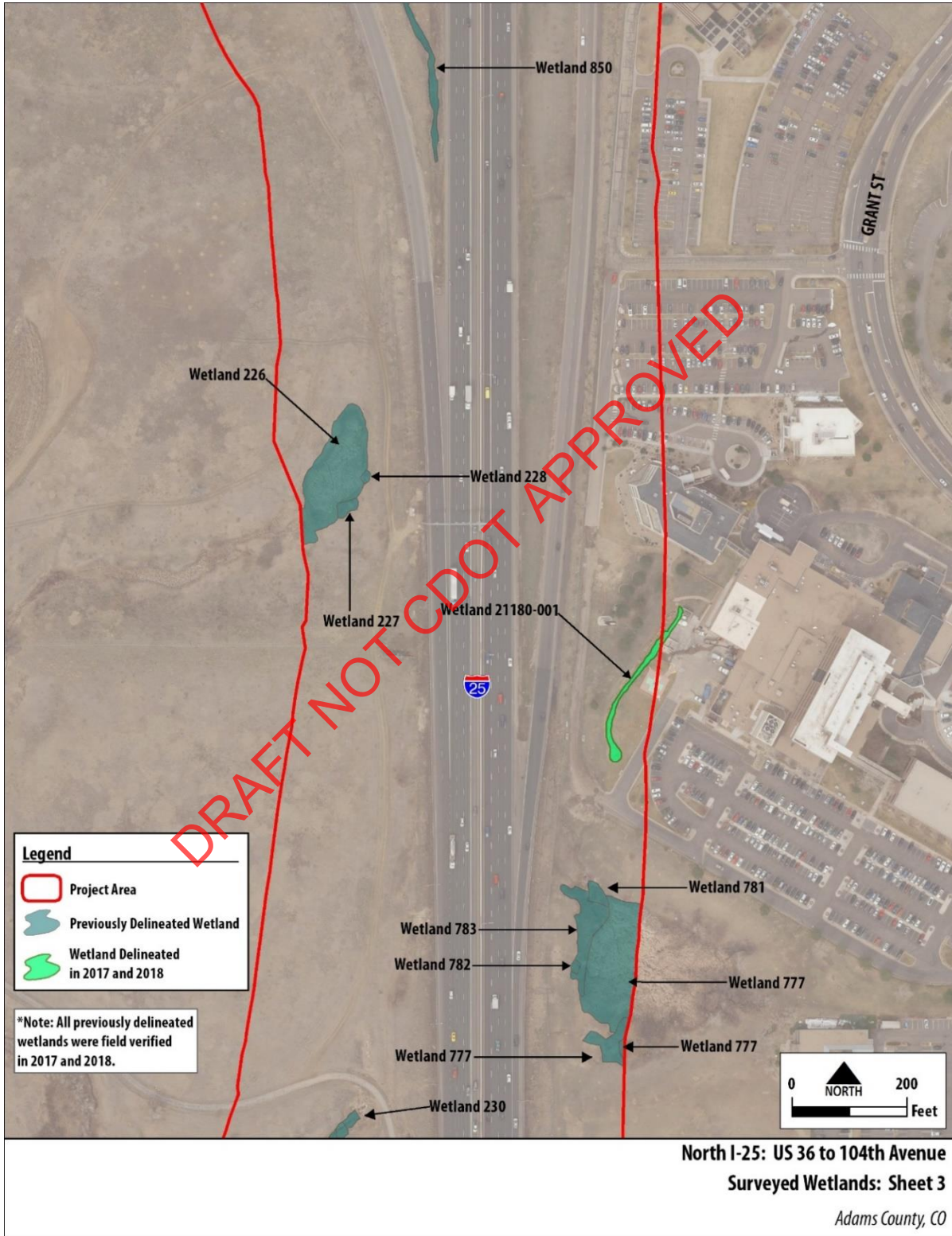
Source: FHU, 2019b

Figure 13. Wetland Map Sheet 2



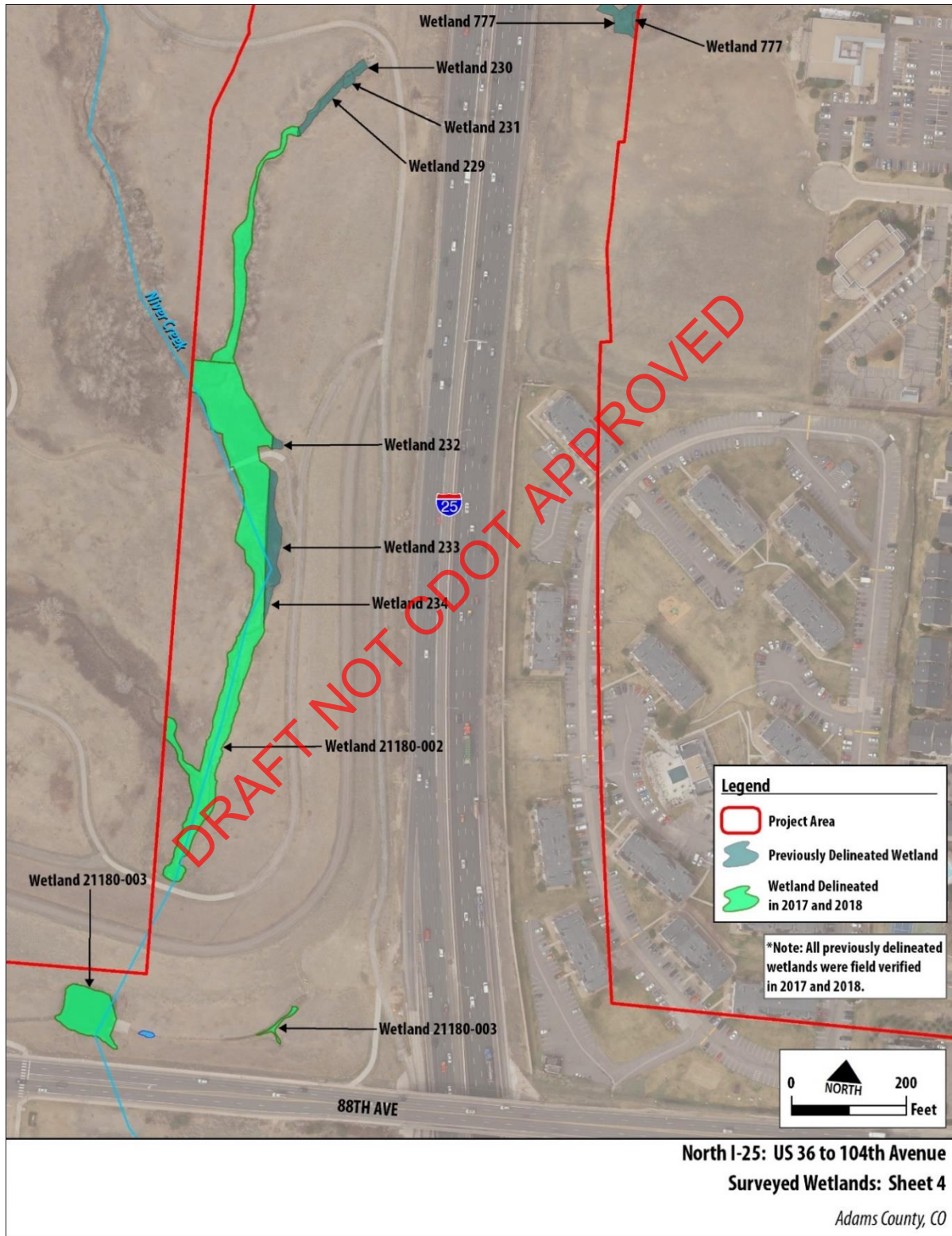
Source: FHU, 2019b

Figure 14. Wetland Map Sheet 3



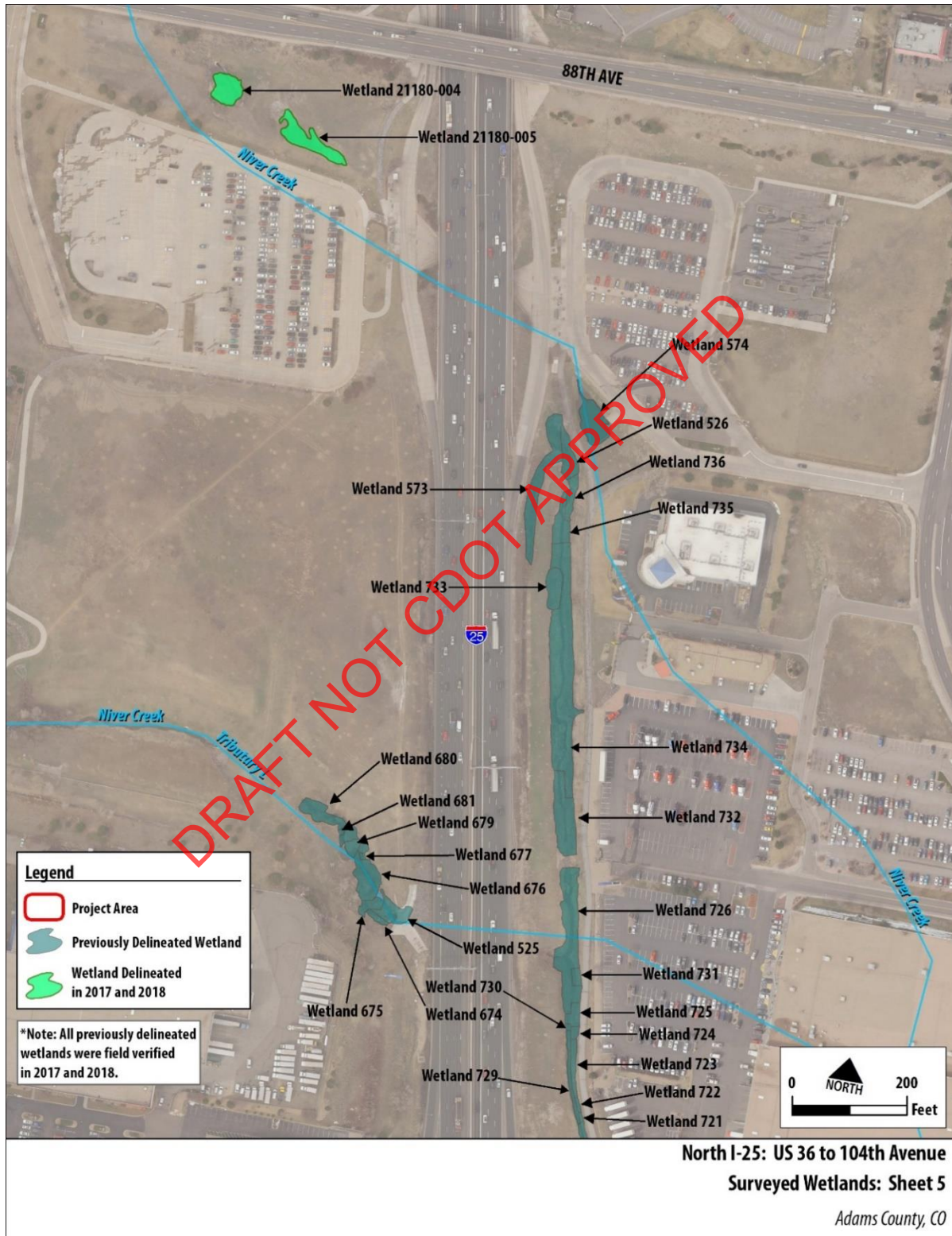
Source: FHU, 2019b

Figure 15. Wetland Map Sheet 4



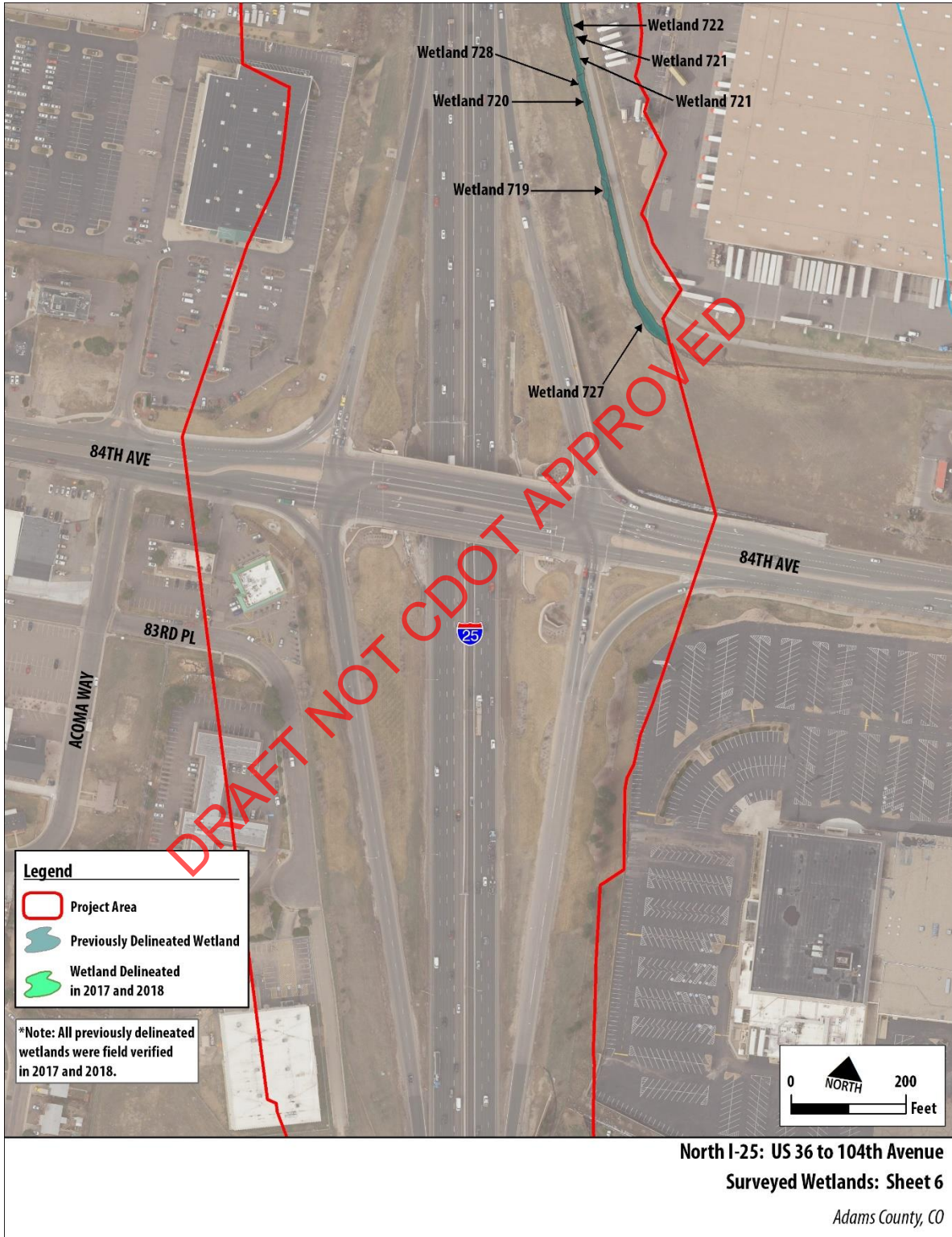
Source: FHU, 2019b

Figure 16. Wetland Map Sheet 5



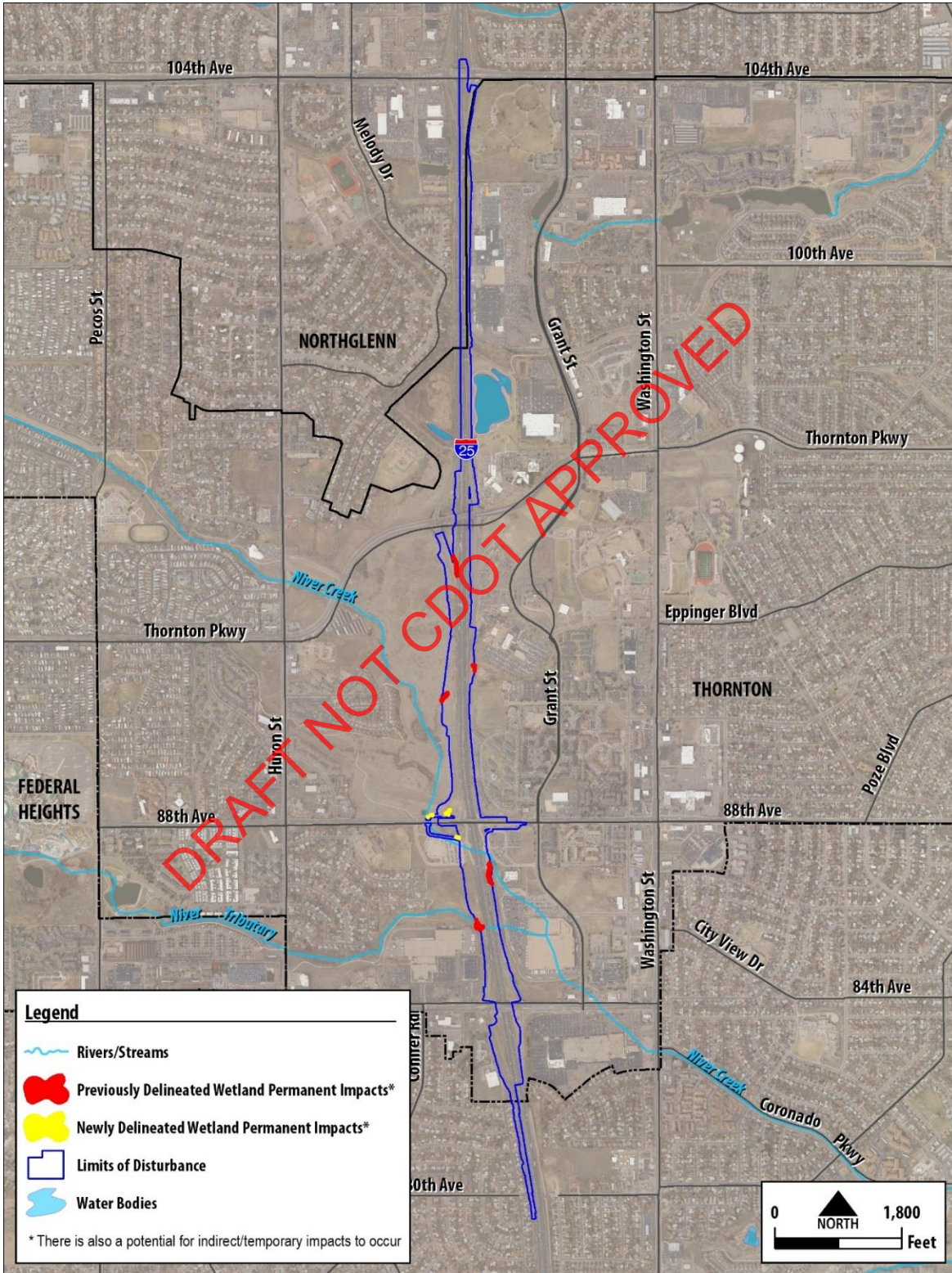
Source: FHU, 2019b

Figure 17. Wetland Map Sheet 6



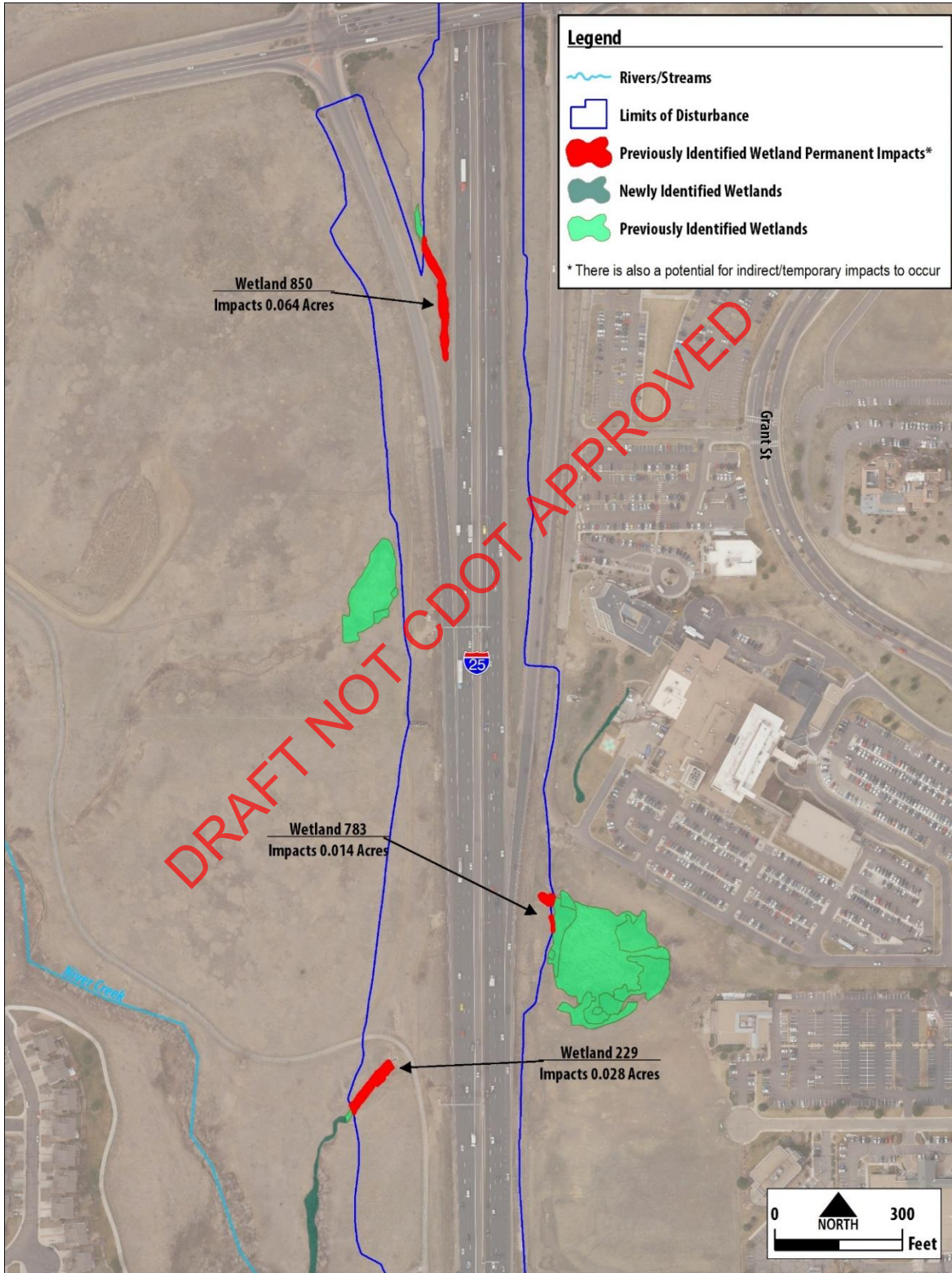
Source: FHU, 2019b

Figure 18. Wetland Impacts



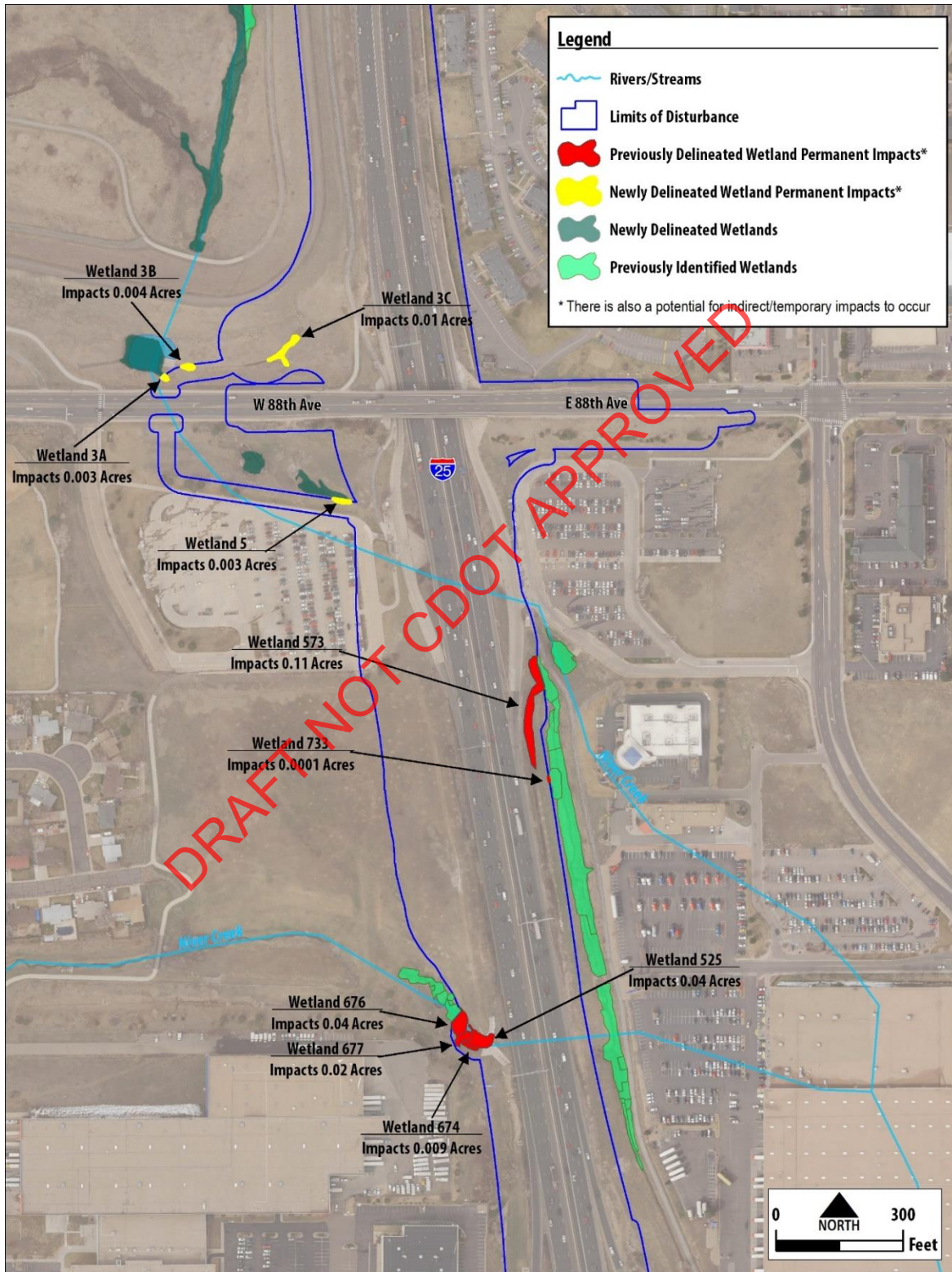
Source: FHU, 2019b

Figure 19. Northern Wetland Impacts



Source: FHU, 2019b

Figure 20. Southern Wetland Impacts



Source: FHU, 2019b



3.0 Conclusions and Next Steps

Based on the information provided in this report, the project area contains wetlands, state species of concern and associated habitat, SB 40 resources, and noxious weeds. No federal T&E species are present in the project area.

Impacts on all resources present will be analyzed and identified, along with required mitigation in the final *I-25 (US 36 to 104th Avenue) EA*, associated project plans, and the materials listed below.

Once project design is sufficient to identify impacts, the appropriate documentation will be provided and will include the following documents:

- ▶ Either a Programmatic or Formal SB 40 Wildlife Certification document
- ▶ A Wetland Finding Report and FACWet Analysis (if wetland permanent impacts are 0.10 acre or greater)

- ▶ A Federal T&E Species Clearance Request Letter
- ▶ A CWA Section 404 Pre-Construction Notification/Permit Request
- ▶ Environmental plans, general notes, details, and specifications
- ▶ Specification 240 for migratory birds and prairie dogs
- ▶ Specification 217 for noxious weed treatments
- ▶ Native plant seed mix for CDOT ROW, including pollinator-friendly plants per CDOT’s Pollinator Initiative, and appropriate plantings for temporarily affected wetland areas
- ▶ Documentation identifying responsible jurisdictional entities to replace ROW or adjacent landscaping.

Table 7 documents the expected impacts for biological resources associated with the Proposed Action, and **Table 8** documents the mitigation commitments for biological resources associated with the Proposed Action.

Table 7. Impacts on Biological Resources

Resource	Context	No Action Alternative	Proposed Action
Vegetation	The project area contains little high-quality vegetation. Land use along the project area has transitioned from farmland to residential and commercial development.	<p>Permanent Impacts</p> <p>Would result in no impacts on land cover and vegetation.</p>	<p>Permanent Impacts</p> <p>Would have the following impacts on land cover:</p> <ul style="list-style-type: none"> • Impacts on 33.4 acres of mixed-grass open space • Impacts on 1.2 acres of riparian/wetland vegetation <p>Some of the impacted vegetation will only be temporarily impacted during construction; however, the amount of permanent and temporary impacts can't be determined until further design occurs.</p> <p>Construction of impervious surfaces would increase runoff exposing the surrounding vegetation to higher levels of pollutants. Increased runoff may lead to increased soil erosion.</p> <p>Temporary Impacts</p> <p>Vegetation removal and ground disturbance during construction.</p>



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Resource	Context	No Action Alternative	Proposed Action
Noxious Weeds	Noxious weeds are present in the project area and have the ability to spread into adjacent areas.	<p><u>Permanent Impacts</u> The No Action Alternative would not contribute to the potential spread of noxious weeds.</p>	<p><u>Permanent Impacts</u> Soil disturbance from construction equipment would create favorable conditions for noxious weeds to be introduced, to become established, or to further spread. Materials being brought on site, such as soil fill, may introduce noxious weeds to the area and contribute to their spread.</p> <p><u>Temporary Impacts</u> Soil disturbance from construction equipment would create favorable conditions for noxious weeds to be introduced, to become established, or to further spread.</p>
Fish	Several common fish species may potentially be present in creeks and streams in the project area.	<p><u>Permanent Impacts</u> Would result in no impacts on aquatic resources.</p>	<p><u>Permanent Impacts</u> The Proposed Action would result in the permanent loss of potential cover for aquatic species, including riparian vegetation along the stream channel that provides shading, cover, nutrients, and potential forage habitat.</p> <p><u>Temporary Impacts</u> No temporary impacts are anticipated.</p>
Wildlife	The project area is located within the Shortgrass Prairie Ecoregion, which encompasses eastern Colorado from I-25 east to the Kansas border. Based on the individual habitats present in the project area, many species of mammals, birds, reptiles, and amphibians could occur within the project area. Many migratory birds and raptors have been observed in and around the project area, including Great Horned Owls.	<p><u>Permanent Impacts</u> Would result in no impacts on land cover and wildlife habitat.</p>	<p><u>Permanent Impacts</u> Wildlife foraging and nesting habitat would be directly impacted by the 33.4 acres of mixed-grass open space and 1.2 acres of riparian/wetland habitat loss due to the construction of the Proposed Action. The loss of existing black-tailed prairie dog colonies would also result in a reduction in available prey to raptors and other predators.</p> <p><u>Temporary Impacts</u> Wildlife species sensitive to indirect human disturbance (noise and visual disturbance) would be impacted most during the duration of construction. Because of the mobility of many species, they are generally capable of avoiding activities causing disturbance. Some types of erosion control measures could entangle animals.</p>

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Resource	Context	No Action Alternative	Proposed Action
Special Status Species	The project area contains existing colonies of black-tailed prairie dogs (<i>Cynomys ludovicianus</i>), a state species of special concern.	<p><u>Permanent Impacts</u> Would result in no impacts on the black-tailed prairie dog.</p>	<p><u>Permanent Impacts</u> Would result in the direct loss of 3.7 acres of known prairie dog colonies due to roadway construction. The loss of existing black-tailed prairie dog colonies also results in a reduction in available prey to raptors and other predators.</p> <p><u>Temporary Impacts</u> Wildlife mortality due to construction activities and habitat loss could also occur.</p>
Special Status Species	The project area contains existing colonies of black-tailed prairie dogs, which is preferred habitat by the Western Burrowing Owl (<i>Athene cunicularia</i>), a state threatened species.	<p><u>Permanent Impacts</u> Would result in no impacts to the Western Burrowing Owl.</p>	<p><u>Permanent Impacts</u> Would result in the direct loss of known prairie dog colonies due to the construction of the roadway. While no Burrowing Owls have been observed, this species may still be affected through the permanent loss of 3.7 acres of potential habitat.</p> <p><u>Temporary Impacts</u> Temporary impacts that could occur would include disturbance of Burrowing Owl habitat due to noise and activity.</p>
Special Status Species	The project area contains existing habitat for the northern leopard frog and common garter snake, state threatened species.	<p><u>Permanent Impacts</u> Would result in no impacts on the northern leopard frog or common garter snake.</p>	<p><u>Permanent Impacts</u> Direct impacts to the northern leopard frog and common garter snake could occur due to the loss of approximately 1.2 acres of potential habitat.</p> <p><u>Temporary Impacts</u> Wildlife mortality due to construction activities and habitat loss could also occur.</p>

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Resource	Context	No Action Alternative	Proposed Action
Wetlands and other Waters of the U.S.	Wetlands within the project area are associated with water quality ponds, Niver Creek, and roadside swales. There are 69 wetlands, with a total of 6.64 acres, delineated within the project area.	Permanent Impacts Would result in no impacts on wetlands or other WUS.	Permanent Impacts The Proposed Action would likely have a permanent impact on approximately 0.4 acre of wetlands within the project area. Temporary Impacts Construction of impervious surfaces has the potential for indirect impacts by increasing runoff, exposing the surrounding vegetation, including wetlands and other WUS, to higher levels of pollutants during construction. Increased runoff may also lead to increased soil erosion during construction.

Table 8. Mitigation Commitments for Biological Resources

Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase That Mitigation Will Be Implemented
Special Status Species – Colorado State Threatened/ Endangered Species	Disruption and loss of existing habitat for the black-tailed prairie dog	Project construction must use BMPs to avoid and minimize impacts to prairie dog colonies. CDOT's prairie dog policy must be followed. The prairie dog policy must be incorporated into a Project Special Specification 240 and typically requires a prairie dog management plan during construction. Coordination must occur with the CDOT Region 1 biologist during the preparation of the prairie dog management plan.	CDOT / Contractor	Pre-construction Construction
Special Status Species – Colorado State Threatened/ Endangered Species	Potential loss of Western Burrowing Owl habitat associated with black-tailed prairie dog colonies	A qualified biologist will conduct a survey before construction for nesting Western Burrowing Owls in prairie dog colonies if construction occurs between March 15 and October 31. If nesting Burrowing Owls are found, then coordination with CPW and USFWS must take place to identify mitigation. Mitigation will include providing a 150-foot buffer around any active Burrowing Owl burrows.	CDOT / Contractor	Pre-construction Construction



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Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase That Mitigation Will Be Implemented
Special Status Species – Colorado State Threatened/ Endangered Species	Potential loss of habitat for the northern leopard frog and common garter snake	Due to the presence of aquatic resources, project construction must use BMPs to avoid and minimize any unnecessary impacts (erosion and sediment deposit) on wildlife habitat (wetland, riparian, and grassland areas).	CDOT / Contractor	Pre-construction Construction
Wildlife	Erosion control measures could entangle animals	Temporary erosion control blankets will have flexible natural fibers.	Contractor	Construction
Wildlife	Disruption and loss of existing habitats	A revegetation plan will be developed in the final design plan set and/or construction documents for vegetation restoration in areas disturbed by construction activities.	CDOT	Pre-construction
Wildlife	Disruption to nesting birds habitat	<p>If construction begins between January 1 and October 31, to avoid impacts on nesting raptors and migratory birds in accordance with the Migratory Bird Treaty Act, the project will incorporate a CDOT Special Specification 240 (Protection of Migratory Birds) as part of the final plan set. Specification 240 will be modified, as needed, to provide protections for any migratory birds that may be present outside the typical nesting season. A qualified biologist will conduct a nest survey before construction. If active nests are found, coordination with CPW and the USFWS is required to determine an appropriate course of action, which may include, but is not limited to, a delay in construction to avoid the breeding season.</p> <p>In addition, due to the presence of one known active Great-horned Owl (<i>Bubo virginianus</i>) nest in the project area, a qualified biologist will conduct a nest survey before construction if construction occurs between January 1 and July 31.</p>	CDOT / Contractor	Pre-construction Construction
Fish	Loss of potential cover for aquatic species	All SB 40 trees and shrubs that are removed would be replaced to create cover for aquatic species.	Contractor	Construction

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Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase That Mitigation Will Be Implemented
Vegetation	Removal of vegetation (clearing and grubbing)	The SWMP will outline methods to limit the amount and time of disturbance so that revegetation of disturbed areas can occur without delay.	Contractor	Construction
Vegetation	Removal of vegetation (clearing and grubbing)	All disturbed areas will be revegetated with native grass and forb species. Seed, mulch, and mulch tackifier will be applied in phases throughout construction. Native trees and shrubs will be planted where appropriate. These items will be detailed in either the SWMP or the final design plan set and deviations from the plan must be submitted to and approved by CDOT Environmental.	CDOT Environmental / Contractor	Throughout
Vegetation	Removal of vegetation in riparian areas	A Programmatic or Formal SB 40 Wildlife Certification will be required during final design, prior to project construction. The SB 40 certification will identify the total number of SB 40 trees and aerial square footage of SB 40 shrubs that will be removed as part of project construction. A proper mitigation ratio of trees and shrubs will be identified and planted onsite. These planting locations will be identified in either the SWMP or the final design plan set.	CDOT Environmental	Design
Noxious Weeds	Spread of noxious weeds	Detailed weed mapping of the project area will be updated and included in the final design plan set and construction documents or SWMP. A CDOT Standard Specification Section 217 (Herbicide Treatment) will be incorporated into project design and implemented during construction which shall identify appropriate herbicides and timing of treatments. Cleaning and disposal of weed infested soil shall be included in the cost of Item 626 Mobilization.	CDOT / Contractor	Design Pre-construction Construction
Noxious Weeds	Spread of noxious weeds	Certified weed-free hay and/or mulch will be used in all revegetated areas.	Contractor	Construction

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Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase That Mitigation Will Be Implemented
Noxious Weeds	Spread of noxious weeds	Project design and construction engineer will coordinate with the Adams County weed supervisor, CDOT, local governing bodies, and landowners to assure proper noxious weed management activities.	CDOT / Contractor	Pre-construction Construction
Noxious Weeds	Spread of noxious weeds	No fertilizers will be used on the project site.	Contractor	Construction
Wetlands and other Waters of the U.S.	Direct and/or indirect impacts on wetlands and other WUS	Impacts on wetlands and jurisdictional open water will be avoided and minimized to the greatest extent possible during final design.	CDOT	Design
Wetlands and other Waters of the U.S.	Direct and/or indirect impacts on wetlands and other WUS	Prepare a Clean Water Act Section 404 permit for CDOT review, approval, and submittal to USACE.	CDOT / Contractor	Design
Wetlands and other Waters of the U.S.	Direct and/or indirect impacts on wetlands and other WUS	Mitigate for temporary impacts by restoring areas to pre-existing conditions. Depending on approval by the USACE, permanent impacts will be mitigated through onsite mitigation, offsite mitigation, purchase of wetland bank credits, or use of a separate strategy, to both jurisdictional and non-jurisdictional wetlands on a 1:1 basis.	CDOT / Contractor	Design
Wetlands and other Waters of the U.S.	Direct and/or indirect impacts on wetlands and other WUS	During construction, BMPs will be used to avoid indirect construction impacts on wetlands. Materials and equipment will be stored a minimum of 50 feet from wetlands, drainages, and ditches that could carry toxic materials into wetlands. Construction fencing and appropriate sediment control BMPs will be used to mark wetland boundaries and sensitive habitats during construction. Sediment and erosion control will be required to be placed during all construction phases and will remain in place until all disturbed areas have reached 70 percent of preconstruction vegetative cover.	Contractor	Construction

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Appendix A. - Site Photographs

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Photographs	Description
	<p>Photo 1. Looking northwest from the eastern side of the 88th Avenue RTD park-N-Ride east of I-25. Showing landscaped vegetation and vacant lot. The landscaped vegetation contained both native and ornamental (non-native) species of grass, trees, and shrubs (February 14, 2017).</p>
	<p>Photo 2. Looking north from the bus lane at the 88th Avenue RTD park-N-Ride east of I-25. Showing landscaped vegetation. The landscaped vegetation contained both native and ornamental (non-native) species of grass, trees, and shrubs and extended up the side-slopes of the 88th Avenue bridge over I-25 (February 14, 2017).</p>
	<p>Photo 3. Looking west along 88th Avenue from east of I-25. Showing landscaped vegetation, residential, and commercial development (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 4. Looking south from the 88th Avenue RTD park-N-Ride east of I-25. Showing landscaped vegetation and the beginning of the native vegetation associated with the Niver Creek channel and wetlands, and SB 40 jurisdictional area (February 14, 2017).</p>
	<p>Photo 5. Niver Creek channel, showing evidence of raccoon activity (tracks) on a sandbar in the channel (February 14, 2017).</p>
	<p>Photo 6. Looking south along the Niver Creek channel on the east side of I-25, south of 88th Avenue. Example of wetland and SB 40 shrub vegetation (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 7. Looking across the Niver Creek channel, east of I-25, south of 88th Avenue. Example of isolated prairie dog colonies found in the project area (February 14, 2017).</p>
	<p>Photo 8. Looking west through the Niver Creek concrete box culvert, east of I-25, south of 88th Avenue. This CBC also acts as a wildlife crossing structure for small-to-medium-sized animals like skunks, raccoons, and coyotes. No evidence of deer was present during the February 2017 survey (February 14, 2017).</p>
	<p>Photo 9. Looking west at the northeast quadrant of the 84th Avenue/I-25 interchange. A prairie dog colony is found outside the ROW in the open areas and side-slope (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 10. Looking north from inside the drainage feature at the US 36/I-25 interchange. No wetlands were identified at this location. Drainage design precludes wetlands from being created (February 14, 2017).</p>
	<p>Photo 11. Looking north toward Thornton Parkway from east of I-25. This new wetland was identified during the February 2017 field survey (February 14, 2017).</p>
	<p>Photo 12. Looking south from near Thornton Parkway at a water quality/detention pond that is a wetland and has prairie dogs inhabiting the edge (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 13. Looking north along the Thornton Parkway on-ramp to northbound I-25. Shows recent construction activity and removal of a wetland that had existed in the swale/low point of the slope (February 14, 2017).</p>
	<p>Photo 14. Looking west toward Badding Reservoir, found in the northwest quadrant of the Thornton Parkway/I-25 interchange. A Red-tailed Hawk nest is present in the center of the picture (February 14, 2017).</p>
	<p>Photo 15. Looking west toward Badding Reservoir, in the northeast quadrant of the Thornton Parkway/I-25 interchange. A previously delineated water quality/detention pond is located adjacent to Croke Lake (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 16. Looking north from the northwest corner of North Mor Elementary School toward Badding Reservoir, in the northeast quadrant of the Thornton Parkway/I-25 interchange. The City of Thornton has signed this area as a Wildlife Habitat Area (February 14, 2017).</p>
	<p>Photo 17. Looking north from Thornton Parkway toward North Mor Elementary School west of I-25. This area is signed Badding Open Space (February 14, 2017).</p>
	<p>Photo 18. Looking north from Niver Creek Open Space Trail toward Thornton Parkway, west of I-25. The area beyond the trail is not open space and is planned for future development (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 19. Showing the vacant land southwest of the Thornton Parkway/I-25 interchange. Taken from the Thornton Parkway on-ramp to southbound I-25. This land is slated for future development. The Niver Creek Trail Open Space is in the background, closer to the drainage (February 14, 2017).</p>
	<p>Photo 20. Looking west, directly north of 88th Avenue. This area is part of the Niver Creek Open Space (February 14, 2017).</p>
	<p>Photo 21. Looking south at the Niver Creek Tributary L drainage, west of I-25 (February 14, 2017).</p>

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Photographs	Description
	<p>Photo 22. Looking north from the Niver Creek Tributary L. Showing the vacant lot south of the 88th Avenue park-N-Ride west of I-25. This lot contains an active prairie dog colony, informal pedestrian trails, native vegetation, and invasive weeds (February 14, 2017).</p>

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Appendix B. - List of Observed Flora and Fauna*

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*The list of observed flora and fauna is specific to the time and seasonality of the field survey, conducted on February 14, 2017. Additional flora and fauna likely inhabit the project area during the growing and nesting season.



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Flora and Fauna Common Name and Species Name	Mixed-grass Open Space	Riparian/Wetland	Landscaped (Commercial and Residential)	Roadways, Trails, Parking Lots	Open Water
Trees					
Siberian Elm (<i>Ulmus pumila</i>)	X	X	X		
Plains Cottonwood (<i>Populus deltoides</i>)	X	X	X		
Crack Willow (<i>Salix fragilis</i>)		X			
Rocky Mountain Juniper (<i>Juniperous scopulorum</i>)			X		
Ponderosa Pine (<i>Pinus ponderosa</i>)			X		
Pinyon Pine (<i>Pinus edulis</i>)			X		
Western White Pine (<i>Pinus monticola</i>)			X		
Crabapple (<i>Malus spp.</i>)			X		
Russian Olive (<i>Elaeagnus angustifolia</i>)	X	X	X		
Other Ornamental Trees (ash, fruit, etc.)			X	X	
Shrubs					
Sandbar Willow (<i>Salix interior</i>)		X			
Common Juniper (<i>Juniperous communis</i>)			X		
Three-leaf Sumac (<i>Rhus trilobata</i>)	X	X	X		
Other Ornamental Shrubs			X	X	

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Flora and Fauna Common Name and Species Name	Mixed-grass Open Space	Riparian/Wetland	Landscaped (Commercial and Residential)	Roadways, Trails, Parking Lots	Open Water
Grasses and Herbs					
Smooth Brome (<i>Bromus inermis</i>)	X	X	X	X	
Common Sunflower (<i>Helianthus annuus</i>)	X	X	X		
Showy Milkweed (<i>Asclepias speciosa</i>)		X			
Crested Wheatgrass (<i>Agropyron cristatum</i>)	X	X	X		
Poison Hemlock (<i>Conium maculatum</i>)		X		X	
Common Spikerush (<i>Eleocharis palustris</i>)		X			
Wild Licorice (<i>Glycyrrhiza lepidota</i>)		X			
Cattails (<i>Typha latifolia & angustifolia</i>)		X			
Curly Dock (<i>Rumex crispus</i>)	X	X			
Reed Canarygrass (<i>Phalaris arundinacea</i>)		X			
Yucca (<i>Yucca glauca</i>)	X				
Common Teasel (<i>Dipsacus fullonum</i>)	X	X			
Common Mullein (<i>Verbascum thapsus</i>)	X				
Downy Brome (<i>Bromus tectorum</i>)	X			X	
Other Native and Ornamental Grasses	X	X	X		

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Flora and Fauna Common Name and Species Name	Mixed-grass Open Space	Riparian/Wetland	Landscaped (Commercial and Residential)	Roadways, Trails, Parking Lots	Open Water
Birds					
Black-billed Magpie <i>(Pica hudsonia)</i>	X	X			
Red-tailed Hawk <i>(Buteo jamaicensis)</i>	X	X			
Canada Goose <i>(Branta canadensis)</i>	X	X			X
Mallard <i>(Anas platyrhynchos)</i>		X			X
House Sparrow <i>(Passer domesticus)</i>	X	X	X	X	
House Finch <i>(Haemorhous mexicanus)</i>	X	X	X		
American Robin <i>(Turdus migratorius)</i>	X	X	X		
Blue Jay <i>(Cyanocitta cristata)</i>		X	X		
American Crow <i>(Corvus brachyrhynchos)</i>	X	X	X		
Red-winged Blackbird <i>(Agelaius phoeniceus)</i>		X			
Black-capped Chickadee <i>(Poecilia atricapillus)</i>		X	X		

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I-25 (US 36 to 104th Avenue) Environmental Assessment

Flora and Fauna Common Name and Species Name	Mixed-grass Open Space	Riparian/Wetland	Landscaped (Commercial and Residential)	Roadways, Trails, Parking Lots	Open Water
Mammals					
Black-tailed Prairie Dog (<i>Cynomys ludovicianus</i>)	X		X		
Eastern Cottontail (<i>Sylvilagus floridanus</i>)	X	X	X		
Raccoon (<i>Procyon lotor</i>)		X			X
Fox Squirrel (<i>Sciurus niger</i>)		X	X		

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