



BIOLOGICAL RESOURCES REPORT

2002 South I-25 Corridor and
US 85 Corridor Record of Decision
Reevaluation and Section 4(f) Evaluation

US 85 Highlands Ranch Parkway to C-470

May 2017

	CORRIDOR IMPROVEMENTS		
	Highlands Ranch Pkwy to C-470		



3 **US 85 Highlands Ranch Parkway to C-470**

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5 **Biological Resources Report**

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36 **May 2017**
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1 *Acronyms and Abbreviations*

2	AADT	Average Annual Daily Traffic
3	ADA	Americans with Disabilities Act of 1990
4	APE	Area of Potential Effect
5	BMP	best management practices
6	C-470	Colorado State Highway 470
7	CBP	Colorado butterfly plant
8	CDOA	Colorado Department of Agriculture
9	CDOT	Colorado Department of Transportation
10	CNHP	Colorado Natural Heritage Program
11	CPW	Colorado Parks and Wildlife
12	FE	Federally Endangered
13	FEIS	Final Environmental Impact Statement
14	FHWA	Federal Highway Administration
15	FT	Federally Threatened
16	GIS	geographic information system
17	I-25	Interstate 25
18	IPaC	Information, Planning and Conservation
19	IPMP	integrated pest management plan
20	MBTA	Migratory Bird Treaty Act
21	NEPA	National Environmental Policy Act
22	PEL	Planning and Environmental Linkages
23	ROD	Record of Decision
24	SB 40	Senate Bill 40
25	SC	State Special Concern
26	SE	State Endangered
27	SPWRAP	South Platte Water Related Activities Program, Inc.
28	ST	State Threatened
29	ULTO	Ute's ladies tresses orchid
30	US 85	U.S. Highway 85
31	USFWS	U.S. Fish and Wildlife Service
32	USGS	U.S. Geological Service
33	WVC	wildlife-vehicle crashes

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1.0 Introduction/Background

1.1 History

The United States Highway 85 (US 85) South Corridor extends 25.5 miles from Interstate 25 (I-25) in Denver to the Town of Castle Rock in Douglas County. From a regional perspective, this corridor is a multimodal major arterial for longer-distance, regional trips. The corridor also provides access to numerous commercial and residential developments that are crucial to Douglas County's economy.

In May 2001, the Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) completed the *South I-25/US 85 Final Environmental Impact Statement* (FEIS) (CDOT 2001a). A Record of Decision (ROD) was signed in August 2001 that selected the Preferred Alternative from the FEIS, referred to as the Selected Alternative. A *Revised Record of Decision* was signed in 2002. There were no changes to the Selected Alternative in the 2001 ROD in the 2002 Revised ROD (CDOT 2002).

The FEIS/ROD outlined a set of improvements to address transportation needs for a 2020 horizon year along US 85 from approximately Meadows Parkway to Blakeland Drive. Since then, Douglas County has helped provide funding to CDOT to combine with their own funding to design and construct six segments of the Selected Alternative from the FEIS/ROD. In addition, funding has been provided to improve sections of I-25.

The US 85 Corridor segments and their status are shown in Figure 1.

As additional residential and commercial growth occurs in the northwest portion of the county, further studies have been conducted to identify what transportation improvements are necessary to support the development. Douglas County is conducting two separate but coordinated studies of US 85.

- The *US 85 Corridor Improvements Planning and Environmental Linkages (PEL) Study Report* (Douglas County 2016) updated the 2002 FEIS/ROD recommendations for transportation improvements to US 85 from approximately State Highway 67 (SH 67) in Sedalia to 0.5 mile north of County Line Road. The PEL study identified the long-term transportation needs beyond 2040. It was done primarily to determine what improvements are needed in addition to those selected in the FEIS/ROD. The PEL study defined a Purpose and Need, developed and evaluated a set of alternatives, and recommended improvements for the study area. Near-term improvements to 2020 include providing six through lanes with continuous flow intersections between Highlands Ranch Parkway and Colorado State Highway 470 (C-470) (which includes a multiuse path on the east side of US 85) and providing six through lanes from C-470 to 1,200 feet north of County Line Road (including a new bridge over C-470, a grade-separated Centennial Trail, and a flyover ramp for northbound to westbound traffic). More details about the recommendations and improvements beyond 2020 are in the PEL study document.

- 1 • The Highlands Ranch Parkway to C-470 Project is another segment of the FEIS/ROD
2 Selected Alternative. Douglas County obtained funding from the Denver Regional Council of
3 Governments (DRCOG) to construct this project beginning in 2019. Before design can
4 proceed, the 2002 FEIS/ROD needs to be reevaluated to reflect current conditions. This
5 National Environmental Policy Act (NEPA) Reevaluation determines if the findings from the
6 FEIS/ROD remain valid, so that this segment of the FEIS/ROD Selected Alternative can
7 proceed to final design and construction.

8 **1.2 Study Area**

9 The approximate 312-acre environmental resource study area for this NEPA Reevaluation is
10 located in Douglas County along two miles of US 85, from Highlands Ranch Parkway to C-470.
11 The study area begins approximately 1,900 feet south of the intersection of US 85 and
12 Highlands Ranch Parkway and extends north to C-470, as shown in Figure 2. The eastern and
13 western boundaries vary along the length of the study area but extend an average of 500 feet to
14 700 feet in either direction of US 85. The boundaries were set to encompass areas on either
15 side of US 85 associated with the Refined Selected Alternative improvements to be evaluated
16 for direct and indirect impacts.

17 **1.3 Purpose for Reevaluation**

18 The purpose for this Reevaluation is to reevaluate the 2002 FEIS/ROD to address changes to
19 conditions that have occurred since it was issued by FHWA, and to reanalyze impacts of
20 recommended improvements for the Highlands Ranch Parkway to C-470 project. The
21 Reevaluation uses data from the most recent fiscally constrained 2040 Regional Transportation
22 Plan. The FEIS/ROD used data from the 2020 Regional Transportation Plan. The Reevaluation
23 identifies changed existing and future conditions; identifies a refined Selected Alternative for
24 improvements to improve capacity, operational performance and safety for traffic volumes in
25 2040; identifies changes in legislation, regulations, and guidance related to the improvements;
26 reanalyzes impacts; and develops needed changes to the mitigation measures identified in the
27 FEIS/ROD.

28 **1.4 Purpose for the Biological Resources Report**

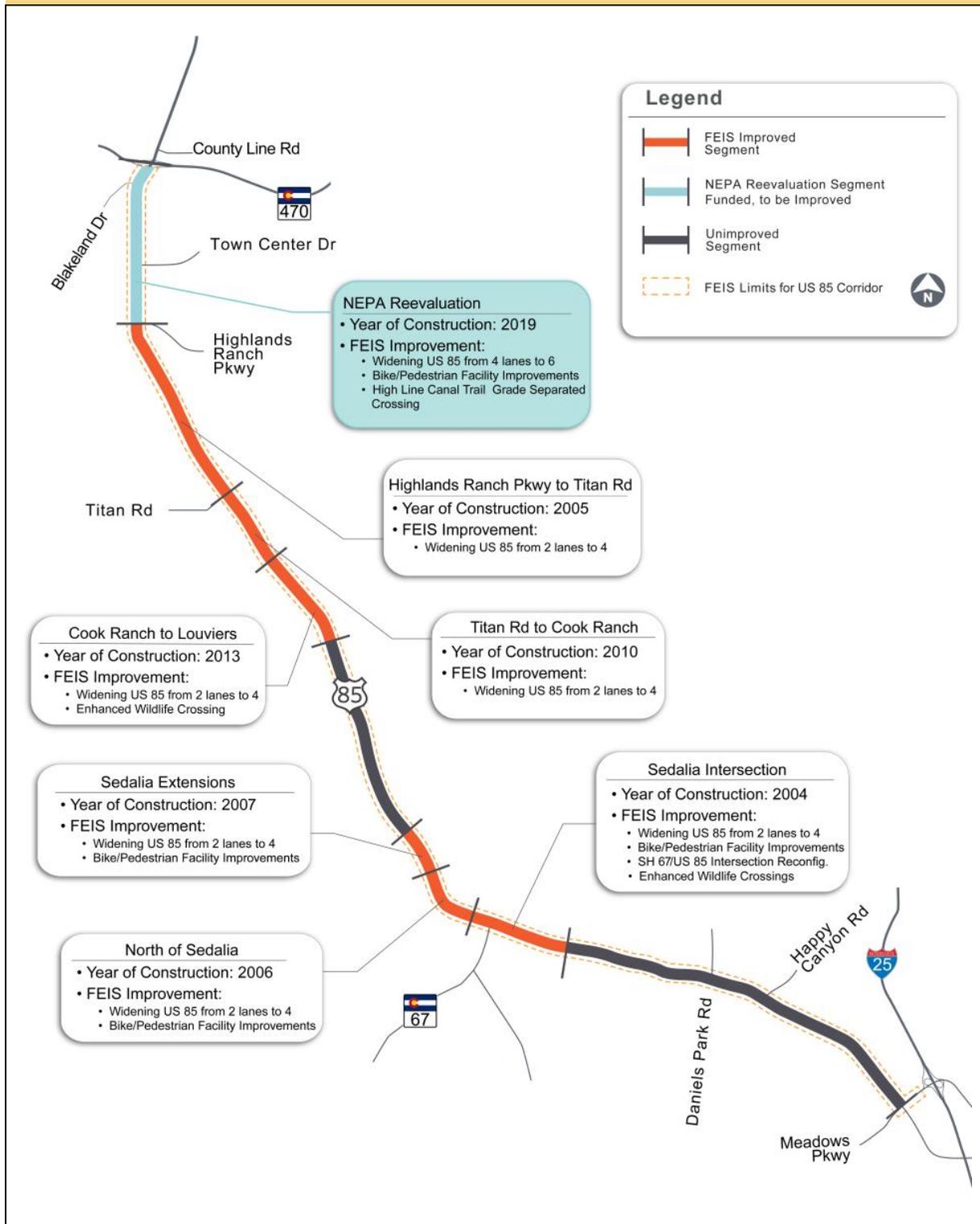
29 This report was prepared to ensure impacts to biological resources are determined in
30 accordance with the following federal and state regulations:

- 31 • Endangered Species Act—The Endangered Species Act is administered by the U.S. Fish
32 and Wildlife Service (USFWS) and protects plant and wildlife species threatened with
33 extinction.
- 34 • Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act—The USFWS
35 administers these acts that protect migratory bird nesting habitat and active migratory bird
36 and eagle nests.

- 1 • Colorado Non-game, Endangered, and Threatened Species Conservation Act—Colorado
2 Parks and Wildlife (CPW) is responsible for listing species of concern, threatened, and
3 endangered within the state. This act provides some protection for state-listed wildlife.
- 4 • Black-tailed Prairie Dog Protection—Is based on municipal and agency policies and the
5 most stringent policy for a given area must be followed. In CDOT right-of-way, the applicable
6 policies that will be followed are the CDOT Impacted Black-tailed Prairie Dog Policy (CDOT
7 2009) and the Black-tailed Prairie Dog Relocation Guidelines (CDOT 2002). Additionally,
8 Douglas County Open Space and Parks Divisions has developed a Prairie Dog
9 Conservation Policy with recommendations for long-term management of prairie dogs in the
10 County (Douglas County 2015b).
- 11 • Colorado Senate Bill 40 (SB 40)—CDOT is required to obtain certification from CPW when
12 the agency plans construction in any stream, tributary, or stream bank. The certification
13 identifies mitigation measures for working in these areas.
- 14 • Noxious Weeds—The Colorado Department of Agriculture (CDOA) Noxious Weed Act of
15 2003 (CRS 35-5-101; CRS 35-5.5-101; and Executive order D-00699) identifies state-
16 designated noxious weeds and provides recommendations for managing noxious weeds.
- 17 • Waters of the U.S. including Wetlands—Are regulated under Section 404 of the Clean Water
18 Act by the U.S. Army Corps of Engineers, and are addressed in a separate technical
19 report—*Waters of the U.S. Technical Report, US 85 Corridor Improvements, Highlands
20 Ranch Parkway to C-470 Reevaluation* (HDR 2016a).

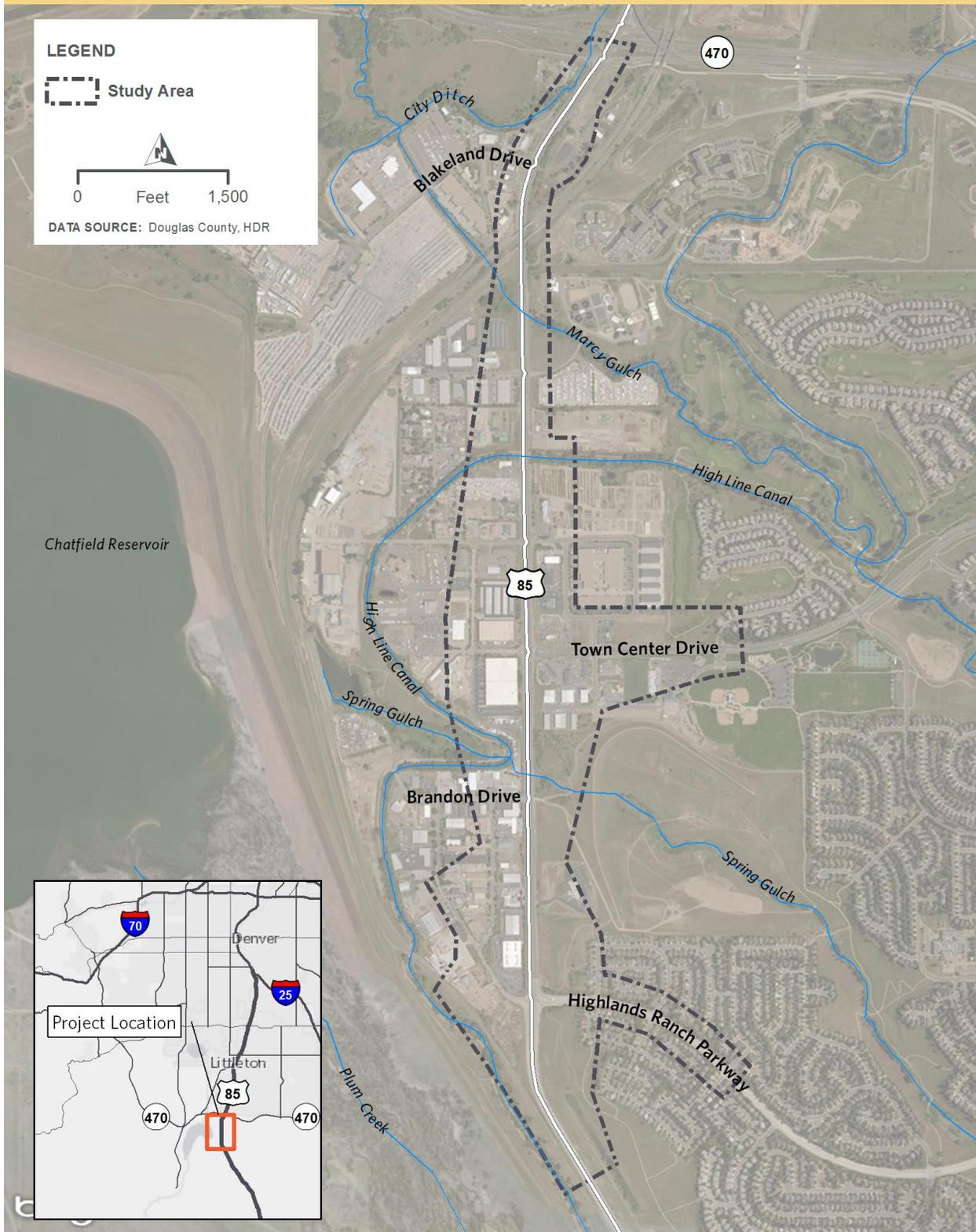
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Figure 1. Status of US 85 Corridor Segments



Source: HDR 2016.

Figure 2. US 85 Reevaluation Study Area



Source: HDR 2016.

2.0 Affected Environment

2.1 Summary of Resource from FEIS/ROD

On behalf of CDOT, Science Applications International Corporation prepared a Wildlife Technical Report summarizing wildlife resources within the proposed project's Area of Potential Effect (APE), which includes the current US 85 study area (CDOT 2000a). The information from the technical report was used to describe wildlife species occurrence in the FEIS/ROD. The report described a variety of big game mammals that use the APE for travel, foraging, and winter range. Elk and mule deer have mapped winter range within the APE and the current US 85 study area. Surveys for prairie dogs were conducted in the APE that identified three small colonies on the east side of US 85 just south of C-470 and two colonies on the east side of US 85 in-between Highlands Ranch Parkway and Brandon Drive. A variety of bird species were reported within the APE, but no nests were reported for the FEIS/ROD US 85 study area.

The study area is located in an urban, developed, commercial area at an elevation of approximately 5,450 feet. The general habitat types within the study area include upland grassy/weedy roadside habitat, riparian and wetland habitat, and landscaped areas. The area has an average annual precipitation of approximately 16 inches, an annual max temperature of 63 degrees, and an average minimum temperate of 35 degrees Fahrenheit (Western Regional Climate Center 2015).

The study area occurs in the Front Range fans ecoregion which consists of short grass and mixed grass prairie (Chapman et al. 2006). Short grass prairie is present in very isolated locations in the study area because of urban development along the corridor. The dominant plant species in these locations are smooth brome (*Bromis inermis*), crested wheatgrass (*Agropyron cristatum*), soapweed yucca (*Yucca glauca*), blue grama (*Bouteloua gracilis*), and rabbitbrush (*Chrysothamnus spp.*). The most common vegetation community is the roadside upland/landscaped habitat that is dominated by noxious weeds, with isolated patches of crested wheatgrass, smooth brome, cheat grass (*Bromis tectorum*), and other grasses and ornamental trees. Landscaped/disturbed areas in the study area do not provide significant habitat for wildlife although some species of wildlife may occasionally be observed passing through these areas.

Riparian habitats are biologically diverse and productive ecosystems and provide several important ecological functions, including providing food, water, and cover for resident and migratory wildlife species. Biological surveys conducted in August 2015 documented riparian habitat along Plum Creek, Marcy Gulch, Spring Gulch, and the High Line Canal (Figure 3). Riparian and wetland areas are dominated by narrowleaf willow (*Salix exigua*), plains cottonwood (*Populus deltoides*), narrow leaf cottonwood (*Populus angustifolia*), peachleaf willow (*Salix amygdaloides*), boxelder (*Acer negundo*), plum (*Prunus Americana*), New Mexico locust (*Robinia neomexicana*), Russian olive (*Elaeagnus angustifolia*), chokecherry (*Prunus virginiana*), Siberian elm (*Ulmus pumila*), green ash (*Fraxinus pennsylvanica*), reed canary grass (*Phalaris arundinacea*), water hemlock (*Cicuta douglasii*), cattail (*Typha spp.*), and

Figure 3. Riparian Areas in the Study Area



Source: Douglas County, CDOT 2002; HDR 2016.

1 various sedges and rushes. The riparian community associated with Plum Creek includes a few
2 secondary channels and oxbows (including wetlands), some snags (dead trees), areas with
3 exposed cut banks, and a high density of noxious weed species.

4 SAIC prepared a Special Status Plant and Animal Species Technical report for the project to
5 characterize the presence or absence of special status plant and animal species within the APE
6 (CDOT 2000b). General surveys for threatened and endangered species were conducted within
7 the existing right-of-way and species-specific surveys were conducted for Preble's meadow
8 jumping mouse (Preble's) (*Zapus hudsonius preblei*), Colorado butterfly plant (CBP) (*Oenothera*
9 *coloradensis*), and Ute's ladies tresses orchid (ULTO) (*Spiranthes diluvialis*).

10 The technical report documented six special status species as occurring in the APE: Bald Eagle
11 (*Haliaeetus leucocephalus*), Preble's meadow jumping mouse, Black-tailed prairie dog
12 (*Cynomys ludovicianus*), Ferruginous Hawk (*Buteo regalis*), Burrowing Owl (*Athene*
13 *cunicularia*), and Northern leopard frog (*Rana pipiens*). Surveys for ULTO and CBP were
14 negative; however, surveys for Preble's confirmed presence along East Plum Creek near Castle
15 Rock (CDOT 2000b).

16 **2.2 Changes in Laws, Regulations or Guidance since FEIS/ROD**

17 Changes have occurred to the Preble's, ULTO, and CBP block-clearance zones since the
18 FEIS/ROD was completed. The streams in the APE were not block cleared for Preble's at the
19 completion of the FEIS/ROD. The current Preble's block clearance zone (Figure 5, Section 3.3)
20 shows the majority of the Refined Selected Alternative study area as block cleared except for a
21 small portion of the High Line Canal riparian area west of US 85 within the study area and
22 Chatfield State Park and the South Platte River (only the portion south of C-470). Additionally,
23 critical habitat for Preble's was designated on December 15, 2010, that includes areas adjacent
24 to the study area (Figure 5, Section 3.3). The block clearance zone for ULTO and CPB ends at
25 the southern boundary of Arapahoe County where the Platte River crosses under C-470. This
26 does not affect the Reevaluation study area.

27 Since the FEIS/ROD, CDOT has implemented the *Black-tailed Prairie Dog Relocation*
28 *Guidelines* (CDOT 2002) and the *2009 Impacted Black-tailed Prairie Dog Policy* (CDOT 2009),
29 which sets guidelines for projects that will impact Black-tailed prairie dogs.

30 Another change since the FEIS/ROD is the requirement to mitigate for the potential spread of
31 noxious weeds in the study area. The CDOA Noxious Weed Act of 2003 identifies state-
32 designated noxious weeds and provides recommendations for managing noxious weeds.

33 The FEIS/ROD described the federal and state listed species potentially occurring within the
34 APE. Subsequently, several federal and state endangered, threatened and species of concern
35 have been added. The Yellow-Billed Cuckoo (*Coccyzus americanus*) was listed as a state
36 species of concern. Two other state listed species, the Northern pocket gopher (*Thomomys*
37 *talpoides macrotis*) and Common garter snake (*Thamnophis sirtalis*), were added to the list of
38 species occurring in the Reevaluation study area (Table 2, Section 3.3).

1 The Platte River Recovery Implementation Program went into effect on January 1, 2007. The
2 purpose of this Program is to provide Endangered Species Act compliance for water users in
3 the Platte River basin upstream of the Loup River confluence in Nebraska for effects on the
4 target species and critical habitat, while managing certain land and water resources to provide
5 benefits for those species.

6 The evaluation of Platte River species was addressed in a Programmatic Biological Assessment
7 and Biological Opinion jointly prepared by CDOT and FHWA to evaluate water depletions to the
8 Platte River from 2012 to 2019 (USFWS 2012). Platte River species occur in Nebraska, which
9 is well away from the study area but may be affected by water uses for the Refined Selected
10 Alternative, so they must be evaluated to comply with Section 7 of the Endangered Species Act.
11 The Platte River species include three federally listed bird species, one federally listed fish
12 species, and one federally listed plant species (Table 2, Section 3.3).

13 In July 2013, CDOT and CPW signed a new Memorandum of Agreement that identifies some
14 changes to the SB 40 process (CDOT 2013a). The Memorandum of Agreement identifies best
15 management practices (BMP) applicable in SB 40 jurisdictional areas. These changes will be
16 incorporated into the Refined Selected Alternative.

17 Lastly, since the FEIS/ROD, CDOT has created a NEPA Manual with several updates. The
18 most recent update was completed in October 2014. The purpose of the Manual is to provide
19 guidance on preparing and processing documents that comply with NEPA and other applicable
20 state and federal environmental laws affecting transportation projects in Colorado. It also
21 provides “best practice” examples for various compliance processes where appropriate. It is
22 intended that CDOT staff, local agency representatives, and consultants use this Manual to
23 implement NEPA in an effective manner, producing more consistent, improved environmental
24 documents that decision-makers may use to make well-informed transportation decisions
25 (CDOT 2014).

26 **2.3 Change in Resource Base since FEIS/ROD**

27 Habitat for wildlife species evaluated in the FEIS/ROD is largely consistent with current land use
28 and available wildlife habitat, with a mix of residential, commercial, light industrial land uses, and
29 riparian areas. Some additional development has occurred along this corridor, but the areas
30 with the most potential for wildlife habitat (riparian corridors) have remained relatively
31 undeveloped.

32 Development in the study area has reduced the number of prairie dog colonies reported in the
33 FEIS/ROD. Three colonies were identified during the 2000 surveys within the CDOT right-of-
34 way from Highlands Ranch Parkway to C-470. Impacts to these three colonies would have
35 disturbed 6.1 acres of black-tailed prairie dog habitat. The only active colony remaining is the
36 colony described in Table 1 (Section 3.2) as occurring immediately south of C-470 (Figure 5,
37 Section 3.3). The two colonies described in the FEIS/ROD between Highlands Ranch Parkway
38 and Brandon Drive were no longer present during biological surveys conducted in August 2015
39 and July 2016, and this area is currently covered in tall grasses.

3.0 Biological Resources

3.1 Methods

Sirena Brownlee, HDR Senior Biologist, and Ryan Hammons, HDR Ecologist, conducted a biological resources survey of the study area on August 12, 2015. The survey included an approximately 50-foot-wide buffer for vegetation and up to a 0.50-mile buffer for federally listed species and raptors. All biological resource data collected in the field was recorded with a Trimble Geo XT global positioning system unit. An additional survey was conducted by Sirena Brownlee on July 28, 2016, to document SB 40 Resources and current raptor nests in the study area. Prior to conducting biological surveys, the team reviewed the FEIS/ROD findings and conducted a desktop review of all available data for biological resources. The desktop review and field surveys identified the following biological resources in the study area:

- Federal candidate, threatened, and endangered species, as identified by the USFWS online Information, Planning and Conservation (IPaC) System (USFWS 2016a).
- Colorado sensitive, threatened, and endangered species as identified on the CPW (CPW 2016) and Colorado Natural Heritage Program (CNHP) websites (CNHP 2016).
- Black-tailed prairie dog colonies.
- Mapped bald eagle and migratory bird habitat within 0.50 mile of the study area.
- Noxious weeds based on CDOT Noxious Weed Mapping (CDOT 2016).
- SB 40 riparian areas based on U.S. Geological Service (USGS) National Hydrography Dataset (USGS 2016) and field verification.

3.2 Noxious Weeds

The FEIS/ROD did not include information on noxious weeds in the study area. As defined by the CDOA, noxious weeds are plants that reduce agricultural productivity, lower real estate values, endanger human health and well-being, and damage scenic values (CDOA 2015). The Colorado Noxious Weed Act §§ 35-5.5-101 through 119, C.R.S. as amended, states that an organized and coordinated effort must be made to stop the spread of noxious weeds.

The CDOA maintains a noxious weed list that designates and classifies noxious weeds according to recommended control. List A species were designated for eradication by the Commissioner. List B species are species the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, developed and implemented into state noxious weed management plans designed to stop the continued spread of these species. List C species are species for which the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, will develop and implement into state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands.

1 Noxious weeds are injurious to agricultural or horticultural crops, natural habitats and/or
 2 ecosystems, and/or humans or livestock. The Douglas County Board of County Commissioners
 3 adopted an Undesirable Plant Management Plan in accordance with the requirements of
 4 Colorado state law, Colorado Noxious Weed Act, §35-5.5-101-119, C.R.S. (Douglas County
 5 2012). Any work in Douglas County open space must follow the protocols outlined in the Plan. A
 6 Noxious Weed Management Plan for this project will be developed during final design.

7 Data obtained from CDOT regarding noxious weeds mapped in the study area include the
 8 following species: Russian olive, Scotch thistle (*Onopordum tauricum*), Canada thistle (*Cirsium*
 9 *arvense*) common mullein (*Verbascum Thapsus*), common burdock (*Arctium minus*), and diffuse
 10 knapweed (*Centaurea diffusa*) (Figure 4; CDOT 2016). All species are List B except for common
 11 burdock, which is a List C species. CDOT takes responsibility for preventative measures to
 12 prevent the spread of noxious weeds on CDOT property, including rights-of-way (CDOT 2016).

13 Highlands Ranch Metro District Open Space staff spray invasive weeds in the spring and fall
 14 with nonrestrictive herbicides along US 85. Douglas County maintains a noxious weed list which
 15 was used to document noxious weed species in the study area during field surveys in August
 16 2015. A total of 11 species of weeds on the CDOA Noxious Weed List were documented during
 17 August 2015 and July 2016 biological surveys in the study area. Most of these species are
 18 generally widespread along the US 85 right-of-way. Russian olive was documented in all
 19 riparian areas in the study area. No List A or watchlist species were found. Table 1 presents the
 20 common name, scientific name, state weed list designation, and density from CDOT noxious
 21 weed mapping data or from biological surveys.

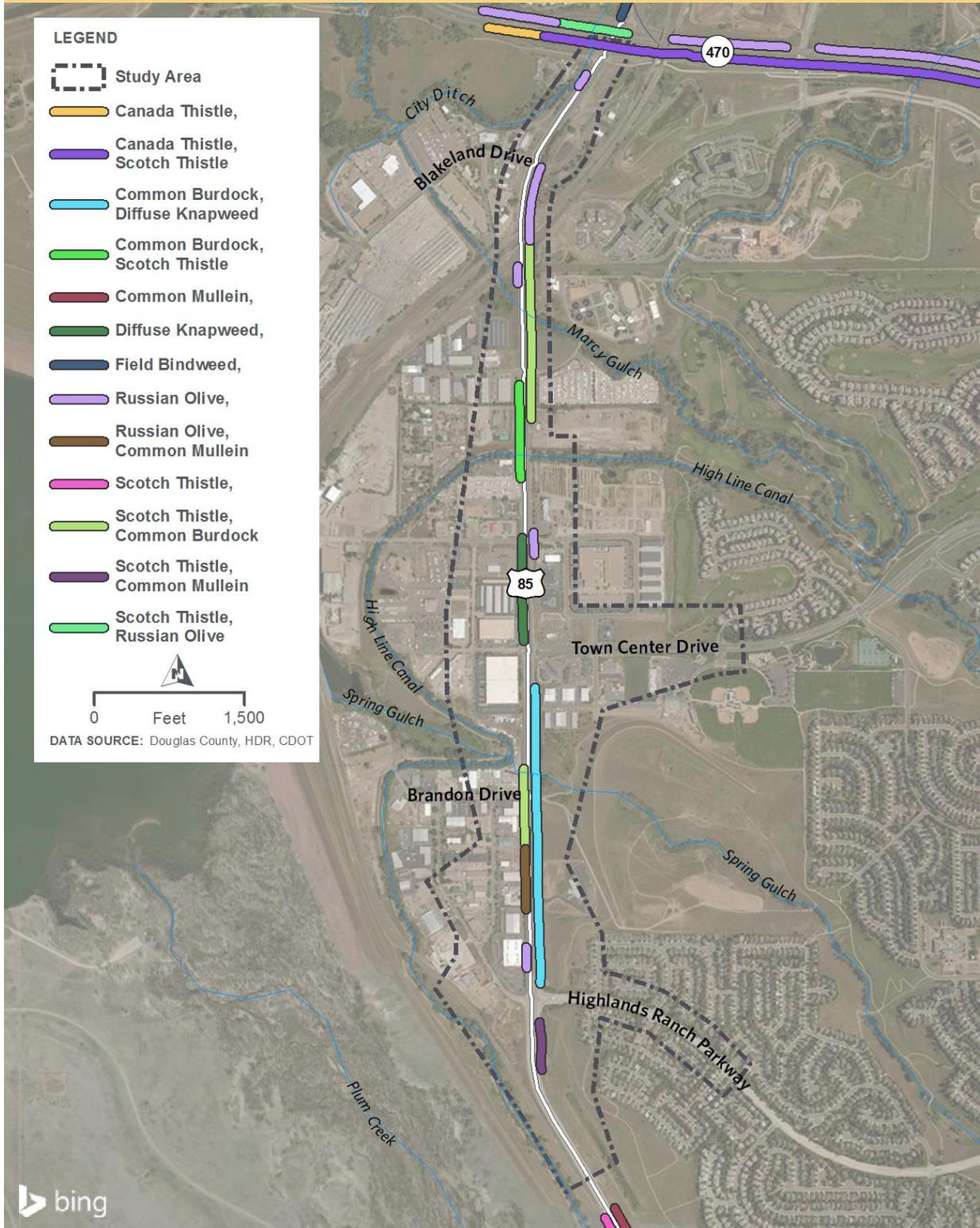
Table 1. Colorado Noxious Weed Species Observed in the Study Area

Common Name	Scientific Name	State Weed List	CDOT Density*
Common mullein	<i>Verbascum thapsus</i>	List C	20-40%
Leafy spurge	<i>Euphorbia esula</i>	List B	Uncommon
Diffuse knapweed	<i>Centaurea diffusa</i>	List B	0-20%
Downy brome (cheatgrass)	<i>Bromus tectorum</i>	List C	Widespread
Canada thistle	<i>Cirsium arvense</i>	List B	20-40%
Scotch thistle	<i>Onopordum tauricum</i>	List B	20-40%
Russian olive	<i>Elaeagnus angustifolia</i>	List B	20-40%
Field bindweed	<i>Convolvulus arvensis</i>	List C	Common
Musk thistle	<i>Cardus nutans</i>	List B	Uncommon
Puncture vine	<i>Tribulus terrestris</i>	List C	Uncommon
Common burdock	<i>Arctium minus</i>	List C	20-40%

*CDOT Noxious Weed Mapping (CDOT 2016).

22

Figure 4. Noxious Weeds in the Reevaluation Study Area



Source: CDOT 2016.

3.3 Federally Listed and State-Listed Species

Based on the USFWS online Information, Planning, and Conservation (IPaC) System (Appendix A), there are ten federally listed threatened or endangered species with the potential to occur in the study area (USFWS 2016a). Based on the review of habitat present within the study area, the only federally listed species with potential habitat in the study area is the Preble's meadow jumping mouse. Critical habitat for Preble's has been designated on the South Platte River and Plum Creek adjacent to the study area, as shown in Figure 5 on pg. 17 (75 Federal Regulation 784300 December 15, 2010). No other critical habitat for any federally listed species occurs in the study area. No further evaluation is deemed necessary for those species not known or suspected to occur within the study area.

The CPW lists 74 species of amphibians, birds, fish, mammals, reptiles, and mollusks as endangered, threatened, or of special concern within the state of Colorado (CPW 2016). The distribution and habitat preferences of each state-listed species were identified and the potential for each of these species to occur in the study area was analyzed. There are 18 state-listed birds, fish, and mammal species that potentially occur in Douglas County or the study area (CPW 2016). However, the most of these species are not expected to occur in the study area because it is outside of their range and/or the appropriate habitat is not present. Table 2 lists the federally listed and state-listed species that may occur within the study area and their potential for occurrence.

South Platte River Depletions

Five federally listed species in Table 2 are included because they are associated with the South Platte Water Related Activities Program, Inc. (SPWRAP) and could be impacted by projects that would result in water depletions to its tributary, the South Platte River. These include the Interior Least Tern, pallid sturgeon, Piping Plover, Whooping Crane, and western prairie fringed orchid. Impacts to these species would be managed through an existing Programmatic Biological Assessment and Biological Opinion that addresses the five species noted above (USFWS 2012). The water used for the Refined Selected Alternative will be reported to the USFWS at the year's end after completion of the project in accordance with the aforementioned consultation.

Table 2. Federal and State-Listed Species and their Potential to Occur the in Study Area

Species	Status ¹	Habitat	Potential for Occurrence in Study Area
Birds			
Least Tern* (<i>Sterna antillarum</i>)	FE, SE	Nests along reservoirs, lakes and rivers with bare sandy shorelines or islands along several rivers in Nebraska.	No suitable habitat in study area; however, downstream impacts could occur.
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	FT, ST	Old-growth forests in western North America, where it nests in tree holes, old bird of prey	No suitable habitat is present in the study area.

Table 2. Federal and State-Listed Species and their Potential to Occur the in Study Area

		nest, or rock crevices	
Piping Plover* (<i>Charadrius melodus</i>)	FT, ST	Wetlands, lakeshores, and marshes. Nesting habitat is along reservoirs, lakes and rivers with bare sandy/pebbly areas with sparse vegetation.	No suitable habitat in study area; however, downstream impacts could occur.
Whooping Crane* (<i>Grus Americana</i>)	FE, SE	Mid-river sandbars, wet meadows, and reservoir edges along the Platte River in Nebraska.	No suitable habitat in study area; however, downstream impacts could occur.
Mountain Plover (<i>Charadrius montanus</i>)	SC	Requires open grassland for nesting. Will use other habitats during the migration in the spring and fall.	No suitable nesting habitat but could use habitat in study area during migration.
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	SC	Habitat includes reservoirs and rivers.	Suitable winter foraging habitat is present in Chatfield State Park and along Plum Creek (Figure 6, pg. 21). No known nest sites are located within 1 mile of study area (CPW 2015a).
Western yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	SC	Open woodland parks, and extensive cottonwood galleries in western Colorado.	Suitable habitat is present in riparian habitat along Plum Creek and at Chatfield State Park.
Burrowing Owl (<i>Athene cunicularia</i>)	ST	Prairie dog colonies are primarily used by the owl for nesting and hunting. The owl is a migrant that can arrive in March and is typically migrating south by October.	Suitable habitat is present in black-tailed prairie dog towns in study area.
Ferruginous Hawk (<i>Buteo regalis</i>)	SC	Open areas such as grassland or shrubsteppe. Nests in rock outcrops, buttes, large shrubs, haystacks, and low cliffs.	Potential suitable foraging habitat is present in the study area.
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	SC	Requires rocky outcrops for nesting. Uses a variety of habitats during the spring and fall migration.	No suitable nesting habitat but could use habitat in study area during migration

Table 2. Federal and State-Listed Species and their Potential to Occur the in Study Area

Mammals			
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>)	FT, ST	Occurs along Front Range of Colorado along permanent or intermittent streams in areas with herbaceous cover and adequate cover of shrubs and trees.	Occupied habitat mapped along Spring Gulch and Plum Creek in the study area (Figure 5, pg. 17).
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	SC	Habitat consists of intermixed shrublands, sagebrush habitat, and/or shortgrass and mixed grass prairie.	One small black-tailed prairie dog colony is present on the northern boundary of the study area just south of C-470 (Figure 6, pg. 21).
Northern pocket gopher (<i>Thomomys talpoides macrotis</i>)	SC	Cultivated fields, pastures, semi-desert shrublands, and grasslands.	Suitable habitat is present in the study area
Fish			
Greenback Cutthroat Trout (<i>Oncorhynchus clarki stomias</i>)	FT	Species prefers mid- to high-elevation streams with cold, clear water of moderate gradient.	No suitable habitat in study area
Pallid Sturgeon* (<i>Scaphirhynchus albus</i>)	FE	Inhabits large, silty rivers with a diversity of depths and velocities formed by braided channels, sand bars, sand flats and gravel bars.	No suitable habitat in study area; however, downstream impacts could occur
Common shiner (<i>Luxilus cornutus</i>)	ST	Prefers warm water streams and rivers. Primarily found in the South Platte River and its tributaries in eastern Colorado.	Potential to occur in Plum Creek adjacent to the study area
Northern redbelly dace (<i>Phoxinus eos</i>)	SE	Native to the South Platte River Basin. The fish requires slow moving streams and cold water temperatures.	Potential to occur in Plum Creek adjacent to the study area
Iowa darter (<i>Etheostoma exile</i>)	SC	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.	Potential to occur in Plum Creek adjacent to the study area

Table 2. Federal and State-Listed Species and their Potential to Occur the in Study Area

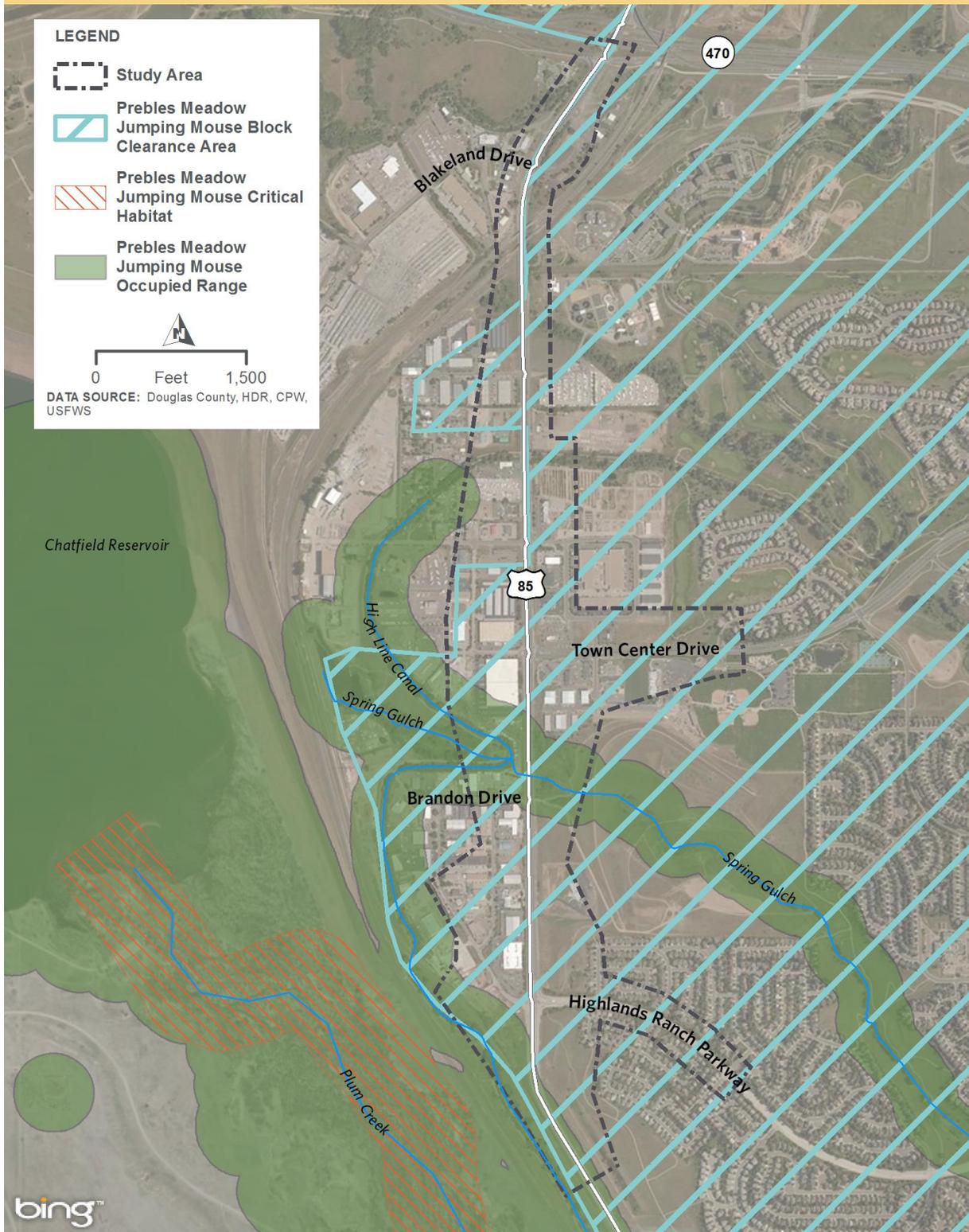
Amphibians and Reptiles			
Northern leopard frog (<i>Rana pipiens</i>)	SC	Suitable breeding habitat found in streams, natural lakes and ponds, glacial kettles, stock ponds and reservoirs, marshes and wetlands.	Potential suitable habitat present in wetlands and streams in the study area
Common garter snake (<i>Thamnophis sirtalis</i>)	SC	Wetlands, ponds, and the edges of streams	Potential suitable habitat present in wetlands and streams in the study area
Flowering Plants			
Ute ladies' tresses orchid (<i>Spiranthes diluvialis</i>)	FT	Sub-irrigated alluvial soils along streams; open meadows on floodplains including riparian areas.	Unlikely to occur in study area riparian areas due to dense vegetation. Surveys to detect presence of the Ute ladies' tresses orchid in the study area in August 2015 were negative.
Colorado butterfly plant (<i>Oenothera coloradensis</i>)	FT	Stream channel sites that are occasionally disturbed, sub-irrigated alluvial soils along streams, and open floodplain meadows.	Unlikely to occur in study area meadows and riparian areas due to dense vegetation. Surveys for Colorado butterfly plant in 1999 within the study area were negative (CDOT 2000b).
Western prairie fringed orchid* (<i>Platanthera praeclara</i>)	FT	Occurs in mesic to wet unplowed tallgrass prairies and meadows but have been found in old fields and roadside ditches in Nebraska	No suitable habitat in study area; however, downstream impacts could occur

Source: USFWS 2016a; CPW 2016.

¹Status Codes: FE = Federally Endangered; FT = Federally Threatened; SE = State Endangered; ST = State Threatened, SC = State Special Concern.

* Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.

Figure 5. Preble's Meadow Jumping Mouse Occupied Range and Critical Habitat



Source: USFWS 2016b; CPW 2015b.

1 **Preble's Meadow Jumping Mouse**

2 The Preble's meadow jumping mouse is a small mouse with an extremely long tail, large hind
3 feet, and long hind legs, which allow the mouse to escape from predators by making incredible
4 jumps. The distinctive long tail is bicolored, lightly furred, and often twice as long as the body,
5 occupying more than 60 percent of the total body length. The Preble's has a dark broad stripe
6 on its back that runs from head to tail and is bordered on either side by gray to orange-brown fur
7 (USFWS 2003).

8 Preble's habitat consists of dense, well-developed wetland and riparian areas with dense
9 vegetation, as well as the adjoining uplands containing undisturbed shrub and grass uplands up
10 to 300 feet beyond the 100-year floodplain. Upland areas are used to hibernate, forage, and
11 escape flooding. Hibernation occurs underground or beneath logs or other similar shelters from
12 mid-October through early May (USFWS 2003). The Preble's may travel more than 2.3 miles
13 along linear riparian habitats. The diet of these rodents includes arthropods, fungus, moss,
14 pollen, and a wide variety of plants, especially willow (*Salix* spp.) (USFWS 2003). Many animals
15 prey upon them, including garter snakes (*Thamnophis* spp.), prairie rattlesnakes (*Crotalus*
16 *viridus*), bullfrogs (*Lithobates catesbeianus*), foxes (*Vulpes vulpes*), long-tailed weasels
17 (*Mustela frenata*), and Red-tailed Hawks (*Buteo jamaicensis*) (USFWS 2003).

18 The Preble's range extends along the eastern edge of the Front Range foothills of the Rocky
19 Mountains from southeastern Wyoming to Colorado Springs, Colorado. In Colorado, the
20 Preble's lives along creeks, rivers, and other waterbodies in Larimer, Weld, Boulder, Douglas,
21 Jefferson, El Paso, Teller, and Arapahoe Counties from 4,650 feet to 7,600 feet in elevation (73
22 Federal Register 39790). Critical habitat for Preble's has been designated on the South Platte
23 River and Plum Creek adjacent to the study area, as shown in Figure 5 (75 Fed. Reg. 78430
24 December 15, 2010).

25 The current Preble's block clearance zone shows the majority of the study area as block cleared
26 except for a small portion of the High Line Canal riparian area west of US 85 within the study
27 area and Chatfield State Park and the South Platte River (Figure 5). However, CPW data
28 documents potential occupied habitat along Spring Gulch, High Line Canal, and Plum Creek in
29 the study area and in the adjacent Chatfield Reservoir, as shown in Figure 5 (CPW 2015b).
30 During the August 2015 site visit, Spring Gulch had standing water with an adjacent dense
31 thicket of cattails (*Latifolia* sp.). In addition, the area adjacent to Spring Gulch is mowed
32 disturbed grasslands managed by the Spring Gulch Equestrian Center rather than the
33 undisturbed grasslands that Preble's prefer. The High Line Canal riparian area in the study area
34 has no adjacent uplands with undisturbed shrub and grass that is preferred by the Preble's. A
35 Biological Assessment has been prepared to assess the impact of the Refined Selected
36 Alternative on the Preble's meadow jumping mouse (*Preble's Meadow Jumping Mouse*
37 *Biological Assessment, U.S. 85 Improvements, Highlands Ranch Parkway to C-470* [HDR
38 2016b]).

39 In 2006, Douglas County and the Towns of Castle Rock and Parker developed the Douglas
40 County Habitat Conservation Plan and Environmental Assessment to conserve the quality,

1 quantity, and distribution of habitat needed to maintain the long-term viability of Preble's in
2 Douglas County (Douglas County 2006). The plan provides an Incidental Take Permit that
3 covers the county and the two municipalities and allows them to conduct activities in Preble's
4 habitat, such as road, bridge, trail construction and maintenance, utility crossings, and habitat
5 improvements.

6 **Colorado Butterfly Plant**

7 The Colorado butterfly plant (CBP) is a short-lived perennial herb found in moist areas of
8 floodplains. It occurs on subirrigated, alluvial soils on level or slightly sloping floodplains and
9 drainage bottoms at elevations from 5,000 to 6,400 feet. The CBP is found in active floodplains
10 along perennial streams and where vegetation is relatively open. Colonies are often found in low
11 depressions or along bends in wide, active, meandering stream channels that are periodically
12 disturbed (USFWS 2015). Its historical and current distribution in Colorado includes Boulder,
13 Douglas, Larimer, and Weld Counties. The CBP flowers from June to September and produces
14 fruit from July to October (Spackman et al. 1997).

15 Biological surveys conducted in August 2015 did not document suitable habitat for the CBP
16 within the study area. CBP typically occurs in areas that are less overgrown with dense
17 vegetation whereas the riparian areas within the study area are most likely too dense to allow
18 establishment of a new population of CBP. Additionally, the last documented occurrence of the
19 plant within Douglas County was August 31, 1942. Surveys conducted for CBP in 1999 within
20 the study area were negative (CDOT 2000b).

21 **Ute Ladies'-Tresses Orchid**

22 The Ute Ladies'-Tresses Orchid (ULTO) occurs at elevations below 6,500 feet in moist to wet
23 alluvial meadows, floodplains of perennial streams, and around springs and lakes where the soil
24 is seasonally saturated within 18 inches of the surface. Generally, the species occurs where the
25 vegetative cover is relatively open and not overly dense or overgrazed. In Colorado, the
26 USFWS requires surveys in areas of suitable habitat on the 100-year floodplain of the South
27 Platte River, Fountain Creek, and Yampa River and their perennial tributaries. ULTO does not
28 bloom until late July to early September (depending on the year) and timing of surveys must be
29 synchronized with blooming (USFWS 1995).

30 Surveys to detect presence of the ULTO in the study area conducted in August 2015 were
31 negative. The CNHP database does not include any sightings in the study area or vicinity
32 (CNHP 2016). Suitable habitat for the ULTO does not occur in the study area because of the
33 lack of open wet meadow habitat typically associated with this species. In addition, vegetation in
34 the riparian areas is too dense to allow establishment of ULTO in the study area.

35 **State-listed Species**

36 A total of 13 state-listed species have potential habitat in the study area. Of the state-listed
37 avian species identified as potentially occurring in the study area, the Burrowing Owl is the only
38 species that could nest in study area because of the presence of prairie dogs. However, no
39 Burrowing Owls were observed in the prairie dog colony during the biological survey and the

1 study area contains very few prairie dogs and is unlikely to support nesting Burrowing Owls.
2 American Peregrine Falcon and Mountain Plover may use the study area for short periods
3 during the spring and fall migrations, but no nesting habitat is present. Ferruginous Hawks may
4 forage near the small prairie dog town in the study area and could forage within the study area
5 in winter. Western yellow-billed cuckoos have been documented in Chatfield State Park and
6 along Plum Creek in very low densities (eBird 2015; Kingery et al. 1998).

7 Bald Eagles can be found year-round in the study area; however, a review of the CPW
8 database indicated no known active bald eagle nests within one mile of the study area. Chatfield
9 State Park and Plum Creek are mapped as winter range and winter forage for Bald Eagles
10 (Figure 6; CPW 2015a). There are no documented winter night roosts in the study area and no
11 winter night roost surveys are recommended.

12 Bald and Golden Eagles (*Aquila chrysaetos*) are protected under the Bald and Golden Eagle
13 Protection Act (16 USC 668–668c) and the Migratory Bird Treaty Act (MBTA). The act protects
14 Bald and Golden Eagles by prohibiting, except under certain specified conditions, the taking,
15 possession, and commerce of such birds. The definition of “take” includes the following: pursue,
16 shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.

17 The common shiner, northern redbelly dace, and Iowa darter may occur in the South Platte
18 River and Plum Creek adjacent to the study area (Table 2). The northern pocket gopher could
19 inhabit some of the open grasslands in the study area. Wetlands associated with Plum Creek
20 and the High Line Canal provide potential habitat for the northern leopard frog. No frogs were
21 observed during biological surveys conducted on August 12, 2015 and July 28, 2016.

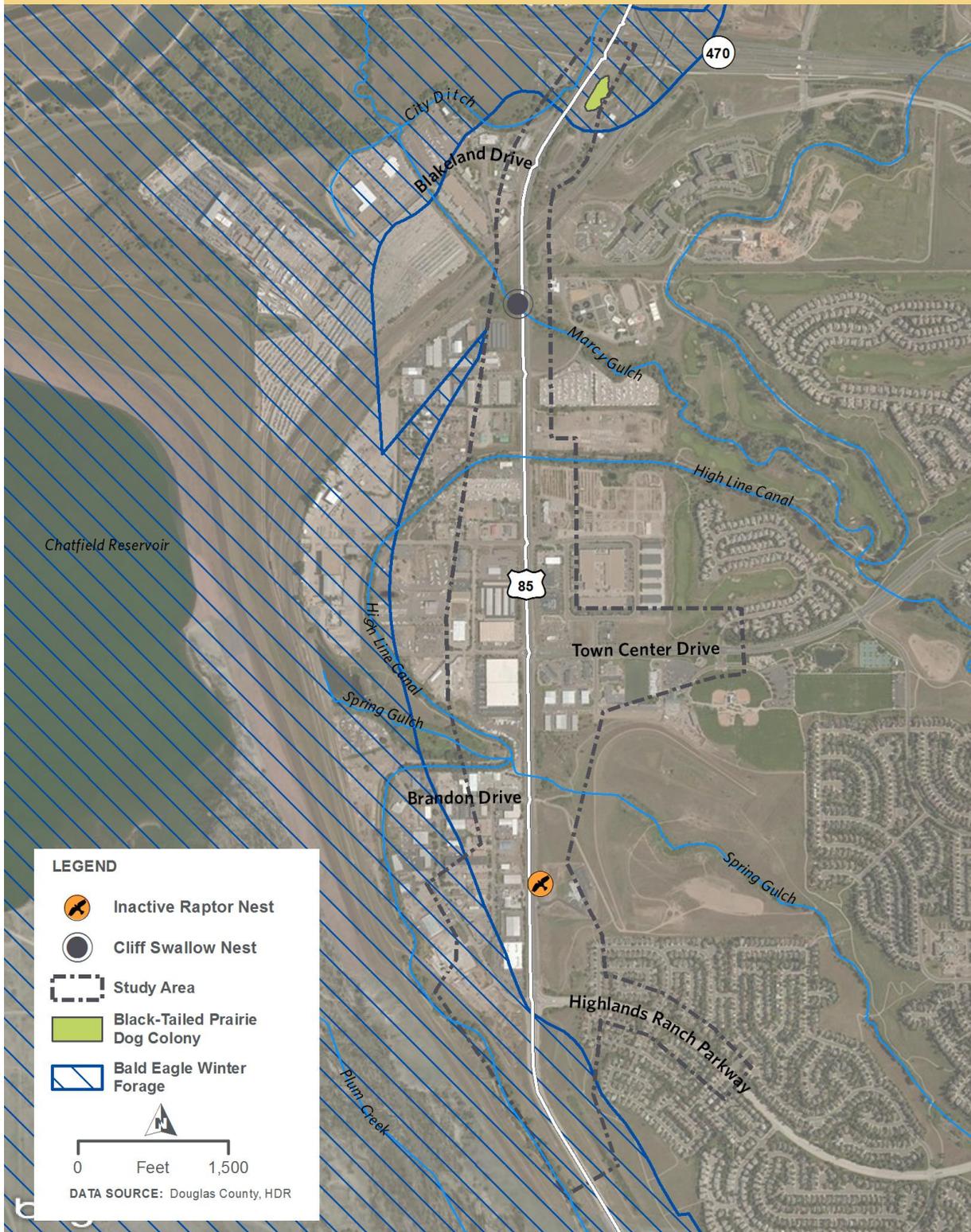
22 One active black-tailed prairie dog colony is located just southeast of C-470 in the right-of-way
23 (Figure 6). The colony is approximately 1.04 acres in size, and the 46 individual burrows were
24 sparsely distributed.

25 **Raptors and Migratory Birds**

26 Migratory birds, as well as their eggs and nests, are protected under the MBTA. With the
27 exception of House Sparrow, Rock Dove (Common or Feral Pigeon), European Starling, and
28 resident game birds such as Pheasant and Grouse, all wild birds commonly found in the U.S.
29 are protected by the MBTA. All active nests are protected, including cavity nests (e.g., Flicker),
30 ground nests (e.g., Killdeer), and subterranean nests (e.g., Burrowing Owl).

31 The Refined Selected Alternative could potentially impact migratory bird species. Migratory bird
32 nesting habitat is present in riparian habitat in the study area. Grassy upland areas along the
33 right-of-way and landscaped areas in the study area could also be used as nest sites. The
34 northern portion of the study area is adjacent to the Chatfield Reservoir State Recreation Area,
35 which contains a variety of nesting habitat for grassland-dependent and riparian nesting
36 migratory birds. There are 212 bird species that frequent Chatfield, either as permanent
37 residents or for breeding (USACE 2013).

Figure 6. Location of Bald Eagle Winter Forage and Other Biological Resources



Source: CPW 2015a; HDR 2016.

1 Migratory birds documented in the study area during the biological surveys include the
2 American Crow (*Corvus brachyrhynchos*), American Robin (*Turdus migratorius*), American
3 Kestrel (*Falco sparverius*), Black-billed Magpie (*Pica hudsonia*), Black-capped Chickadee
4 (*Poecile atricapilla*), Mourning Dove (*Zenaida macroura*), Northern Flicker (*Colaptes auratus*),
5 Red-Tailed Hawk, Swainson's Hawk (*Buteo swainsoni*), Cliff Swallow (*Petrochelidon*
6 *pyrrhonota*), Rock Dove (*Columba livia*), Turkey Vulture (*Cathartes aura*), Western Kingbird
7 (*Tyrannus verticalis*), Western Meadowlark (*Sturnella neglecta*), and Western Tanager (*Piranga*
8 *ludoviciana*).

9 An active Cliff Swallow colony was observed under the bridge at the crossing of Marcy Gulch
10 (Figure 6) during biological surveys. In Colorado, migratory bird nesting generally occurs
11 between April 1 and August 31. The protocol for surveying bridges for swallow nests is
12 addressed in Section 6.0.

13 A survey for raptor nests was completed during biological resources field work conducted in
14 August 2015 and July 2016. One inactive raptor nest (possibly a Red-tailed Hawk nest) was
15 documented just south of the Spring Gulch Equestrian Facility immediately adjacent to the
16 US 85 right-of-way (Figure 6). The nest was in poor condition and had not been used recently.
17 Numerous raptor species have been documented at the nearby Chatfield State Park. Chatfield
18 Reservoir is a production area for breeding waterfowl and a staging area for migratory
19 waterfowl. The South Platte River below the Chatfield Dam is winter range for waterfowl which
20 are a source of prey for many raptor species (USACE 2013). Additionally, the presence of
21 prairie dogs in the study area provides a source of prey for raptors. Raptors observed within the
22 study area and surrounding landscape during biological surveys include Swainson's Hawk, Red-
23 tailed Hawk, and American Kestrel.

24 Terrestrial Mammals

25 Most of the terrestrial mammal species likely to be found in the study area are well-adapted to
26 human-modified environments and human disturbance. Common terrestrial mammals in the
27 study area include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), red fox (*Vulpes*
28 *vulpes*), raccoon (*Procyon lotor*), cottontail rabbit (*Sylvilagus audubonii*), and striped skunk
29 (*Mephitis mephitis*).

30 Mule deer travel and forage within and adjacent to the study area. CPW identifies the northeast
31 side of Chatfield Reservoir as a mule deer concentration area, and the entire study area is
32 identified as mule deer winter range (CPW 2015c). Mule deer concentrate on winter and severe
33 winter range because of the availability of resources, particularly forage that is scarce or
34 inaccessible in other portions of their range. Wildlife mortality data indicate that mule deer
35 occasionally attempt highway crossings to access green spaces on either side of US 85.

36 Traffic on US 85 presents a barrier to east-west wildlife movement, as well as a safety hazard
37 for the drivers. Average Annual Daily Traffic (AADT) on US 85 for 2014 is 32,000 at Blakefield
38 Drive, just south of the junction with C-470. Traffic volumes of 10,000 and greater are
39 considered a near-complete barrier for most wildlife, including mule deer. Two wildlife-vehicle
40 collision (WVC) crashes, both involving deer, were reported between 2004 and 2014 in this

1 segment. Both crashes occurred in the vicinity of Spring Gulch Equestrian Facility. One
2 additional WVC carcass was reported by CDOT maintenance personnel at MP 200, in the
3 vicinity of Marcy Gulch.

4 The Burlington-Northern Santa Fe Railway maintains two tracks that run parallel US 85
5 throughout the study area, creating a second linear feature, which wildlife must also traverse to
6 access habitat east and west of US 85.

7 American elk (*Cervus elaphus*) are commonly found in semi-open forest or along forest edges
8 above 6,000 feet. Elk are known to migrate through the Chatfield Basin adjacent to the study
9 area and along the Dakota hogback to the west of the study area, and may occasionally venture
10 into the study area, particularly in the winter.

11 Other than the Plum Creek corridor and Chatfield State Park area, most of the available habitats
12 in the study area are highly fragmented and degraded by human disturbance and noxious weed
13 invasion. Although no big game species were seen during the biological surveys, mule deer sign
14 (scat, tracks, etc.) were observed.

15 A wildlife passage suitability analysis was completed for the study area. No suitable safe wildlife
16 crossings were recommended in the corridor (Kintsch 2015).

17
18 There are several rodent species that are likely to occur in the study area, including black-tailed
19 prairie dog, various chipmunks and ground squirrels, northern pocket gopher, various mice and
20 voles, woodrats (*Neotoma* spp.), common porcupine (*Erethizon dorsatum*), common muskrat
21 (*Ondatra zibethicus*), and American beaver (*Castor canadensis*). American beaver and common
22 muskrat have been reported in Plum Creek and in Chatfield State Park (USACE 2013).

23 **Amphibians and Reptiles**

24 Amphibians that may occur within the study area include the northern leopard frog, western tiger
25 salamander (*Ambystoma tigrinum*), and western chorus frog (*Pseudacris triseriata*). Amphibians
26 generally prey on invertebrates, though some may eat small vertebrates. Plum Creek and High
27 Line Canal riparian areas provide habitat for amphibians in the study area.

28 Reptiles that may occur within the study area include prairie rattlesnake (*Crotalus viridis*), bull
29 snake (*Pituophis catenifer*), western terrestrial garter snake (*Thamnophis elegans*), and lesser
30 earless lizard (*Holbrookia maculata*). Western terrestrial garter snakes and lesser earless
31 lizards were observed in the study area during biological surveys.

32 **Senate Bill 40 Riparian Areas**

33 Colorado SB 40 (33-5-101-107, CRS 1973 as amended) requires any agency of the state to
34 obtain wildlife certification from the CPW when the agency plans construction in "...any stream
35 or its bank or tributaries..." Although SB 40 emphasizes the protection of fishing waters, it
36 acknowledges the need to protect and preserve all fish and wildlife resources associated with
37 streams in Colorado. In July 2013, CDOT and CPW signed a new Memorandum of Agreement
38 that identifies some changes to the SB 40 process (CDOT 2013a) that will be implemented for

1 the Refined Selected Alternative. Streams that meet one or more of the following criteria fall
2 under the jurisdiction of SB 40, as follows:

- 3 • All perennial streams represented by solid blue lines on USGS 7.5-foot Quadrangle maps.
- 4 • Segments of ephemeral and intermittent streams providing live water beneficial to fish and
5 wildlife.
- 6 • Segments of streams at which 25 percent or more of the vegetation comprises riparian
7 vegetation, such as cottonwood, willow, alder, sedges, or other plants dependent on
8 groundwater (such segments shall be within 300 feet upstream or downstream of the
9 Refined Selected Alternative and the 300-foot distance shall be measured along the length
10 of the stream).
- 11 • Segments of streams having wetlands present within 600 feet upstream and downstream of
12 the Refined Selected Alternative (the 600-foot distance shall be measured along the length
13 of the stream).

14 The study area contains several SB 40 jurisdictional streams—Plum Creek, High Line Canal,
15 Spring Gulch, and Marcy Gulch (Figure 7).

16 **4.0 Description of the Alternatives**

17 **4.1 No-Action Alternative**

18 The No-Action Alternative consists of leaving US 85 in its current condition between Highlands
19 Ranch Parkway and C-470, with two general purpose lanes in each direction. Improvements to
20 other sections of US 85 and to portions of I-25 as adopted in the 2002 ROD have already been
21 implemented and are assumed as part of the No-Action Alternative network. The No-Action
22 Alternative also includes improvements to C-470 as defined in the recent Finding of No
23 Significant Impact.

24 **4.2 Refined Selected Alternative**

25 The 2002 FEIS/ROD Selected Alternative included widening both US 85 and I-25. The I-25
26 recommendations included widening to eight lanes between C-470 and Meadows Parkway and
27 six lanes between Meadows Parkway and Douglas Lane. An east side frontage road was
28 included between Schweiger Interchange and Castle Pines Parkway. Interchange modifications
29 were included at Schweiger, Surrey Ridge Road, Castle Pines Parkway and Plum Creek
30 Parkway. All improvements on I-25 that were in the Revised ROD have been completed, except
31 for the widening of the Happy Canyon Road bridge.

32 For US 85, widening to six lanes between Highlands Ranch Parkway and C-470 and four lanes
33 south to Meadows Parkway was recommended. The SH 67 interchange was to be reconfigured,
34 a frontage road was recommended at Sedalia, and a minor realignment was recommended at
35 Cook Ranch. Bicycle and pedestrian facilities were to be included all along US 85, a grade
36 separation at the High Line Canal trail was included, and enhanced wildlife crossings were
37 recommended.

Figure 7. Senate Bill 40 Riparian Vegetation

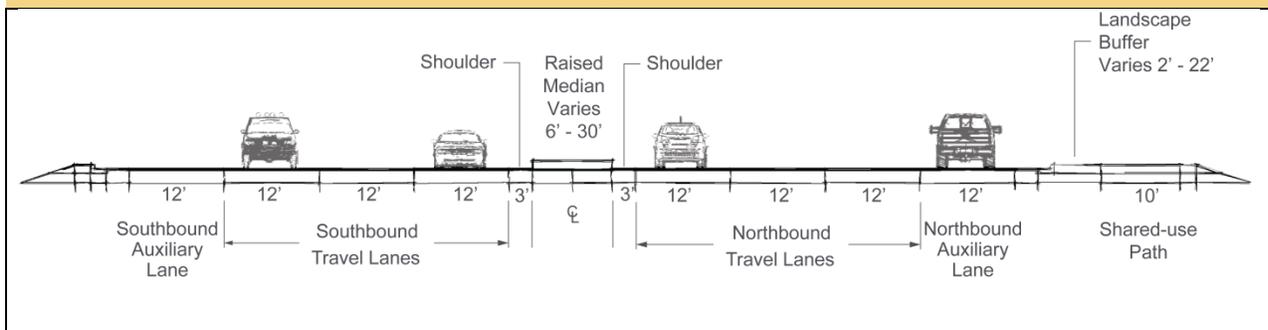


Source: Douglas County 2015a, HDR 2016.

1 Improvements in the 2002 FEIS/ROD Selected Alternative between Highlands Ranch Parkway
 2 and C-470 included a six-through-lane section (eight lanes including the auxiliary lanes) with a
 3 total width that ranges from 106 to 131 feet. The travel lanes are 12 feet wide. The alternative
 4 includes a raised median, inside curb and gutter, outside curb and gutter, inside shoulders,
 5 continuous auxiliary lanes, and a shared-use path. It also includes improvements to the High
 6 Line Canal Trail by changing the existing at-grade crossing to a grade-separated crossing under
 7 US 85. Access consolidation includes modification to right-in/right-out accesses, based on the
 8 *Final US 85 Access Management Plan, South I-25 Corridor and US 85 Corridor EIS* (CDOT
 9 2001).

10 The Refined Selected Alternative includes all of the features described above, most of which are
 11 illustrated in the cross-section in Figure 8.

Figure 8. Refined Selected Alternative Typical Section



Source: HDR 2016.

12

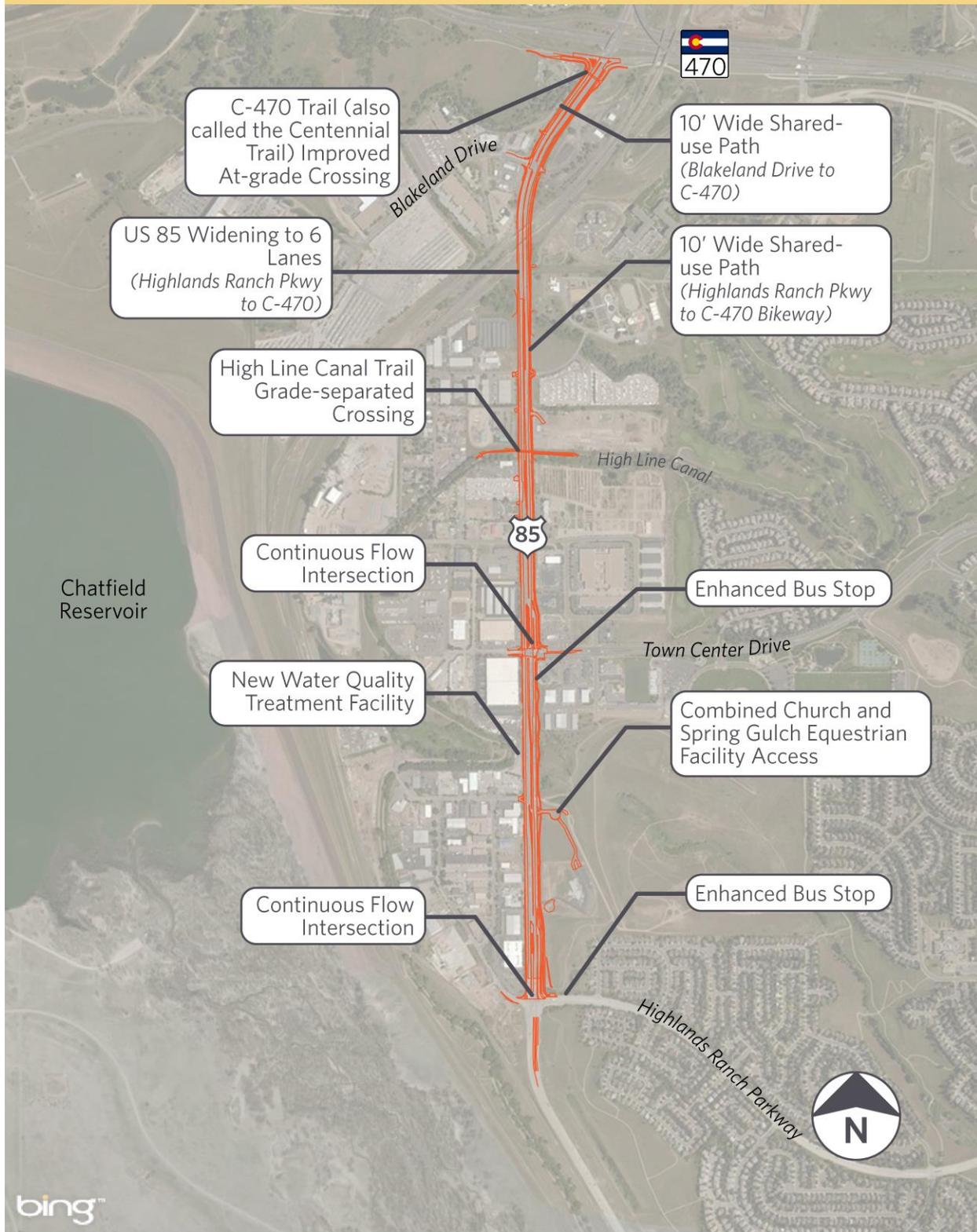
Design Changes Included in the Refined Selected Alternative

13 Changes in the Refined Selected Alternative design compared to the Selected Alternative
 14 include continuous flow intersections at Town Center Drive and Highlands Ranch Parkway and
 15 minor changes to access and some elements of the cross-section, culvert sizes, bus stop
 16 enhancements, and retaining walls (Figure 9). All of these changes are minor refinements to the
 17 same basic alternative.
 18

19 **US 85 Mainline.** The width of the auxiliary lane increased 10 feet to 12 feet. In some locations,
 20 to minimize impacts, the auxiliary lane may be 11 feet. The FEIS/ROD design had included an
 21 alignment shift to the west. This is no longer a part of the Refined Selected Alternative. It also
 22 includes a wider raised median (30 feet compared to 10 feet) and no inside shoulders at the
 23 continuous flow intersections.

24

Figure 9. US 85 Highlands Ranch Parkway to C-470 Refined Selected Alternative



Source: HDR 2016.

Intersection and Access Improvements. Changes in access and turning movements are described in Figure 10. There are notable changes at the intersections below. They are described and illustrated on the following pages.

- Highlands Ranch Parkway and Town Center Drive.
- Norwood Drive, Carder Court, and Brandon Drive.
- Spring Gulch Equestrian Facility and Grace Presbyterian Church.

Figure 10. Changes in Access and Turning Movements

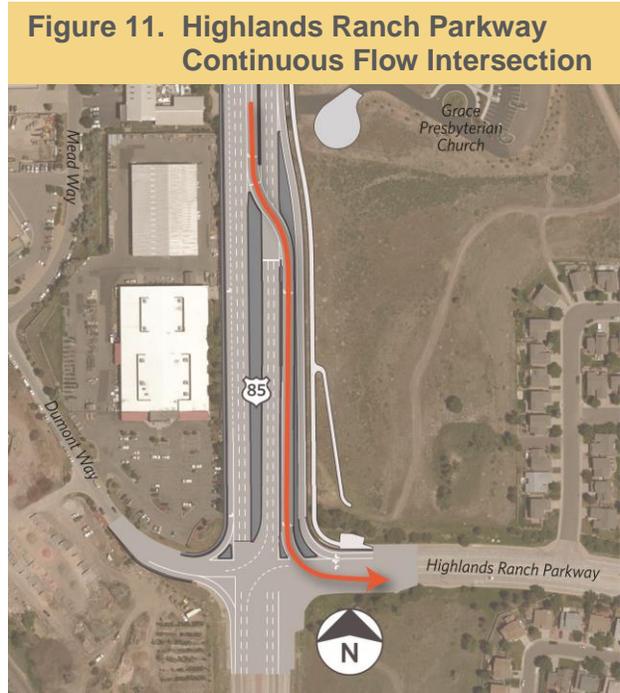
Location	FEIS/ROD Access		NEPA Reevaluation Access	
	Existing Conditions	2002 Selected Alternative	Refined Selected Alternative	Change from FEIS/ROD
Norwood Drive				Left turns and east/west through movements displaced
Carder Court				Left turns and east/west through movements displaced
Midway - Town Center Drive				No U-turn southbound to northbound
Brandon Drive - Spring Gulch Equestrian Facility			Combined access to Spring Gulch Equestrian Facility and Grace Presbyterian Church	Left turns (except southbound) and east/west through movements displaced
Grace Presbyterian Church	No Access Documented (Church constructed 2012)			No change
Highlands Ranch Parkway - Dumont Way				No U-turn southbound to northbound

Note: N/S through movements assumed for all intersections

Source: HDR 2016.

1 **At Highlands Ranch Parkway and Town**
2 **Center Drive, there are continuous flow**
3 **intersections.** This innovative intersection
4 design improves operations for intersections
5 with a high number of left-turn movements.
6 This type of traffic pattern exists on US 85
7 within the study area, and the Refined
8 Selected Alternative incorporates this design
9 modification at the Highlands Ranch Parkway
10 and Town Center Drive intersections. When
11 compared to a traditional signal-controlled
12 intersection, the primary differentiating feature
13 of the continuous flow intersection is the
14 relocation of left-turn movements on an
15 approach to the other side of the opposing
16 traffic flow. Figure 13 and Figure 14 display
17 the continuous flow intersection layouts at
18 Highlands Ranch Parkway and Town Center
19 Drive with the relocated left-turn movement
20 highlighted.

21



Source: HDR 2016.



Source: HDR 2016.

1 **At Norwood Drive, Carder Court, and Brandon Drive, the intersections are right-in/right-**
 2 **out.** Left-turning traffic is relocated to adjacent intersections, as shown in Figure 13 and Figure
 3 14.

Figure 13. Highlands Ranch Parkway Continuous Flow Intersection U-Turn Access



Source: HDR 2016.

4

Figure 14. Town Center Drive Continuous Flow Intersection U-Turn Access



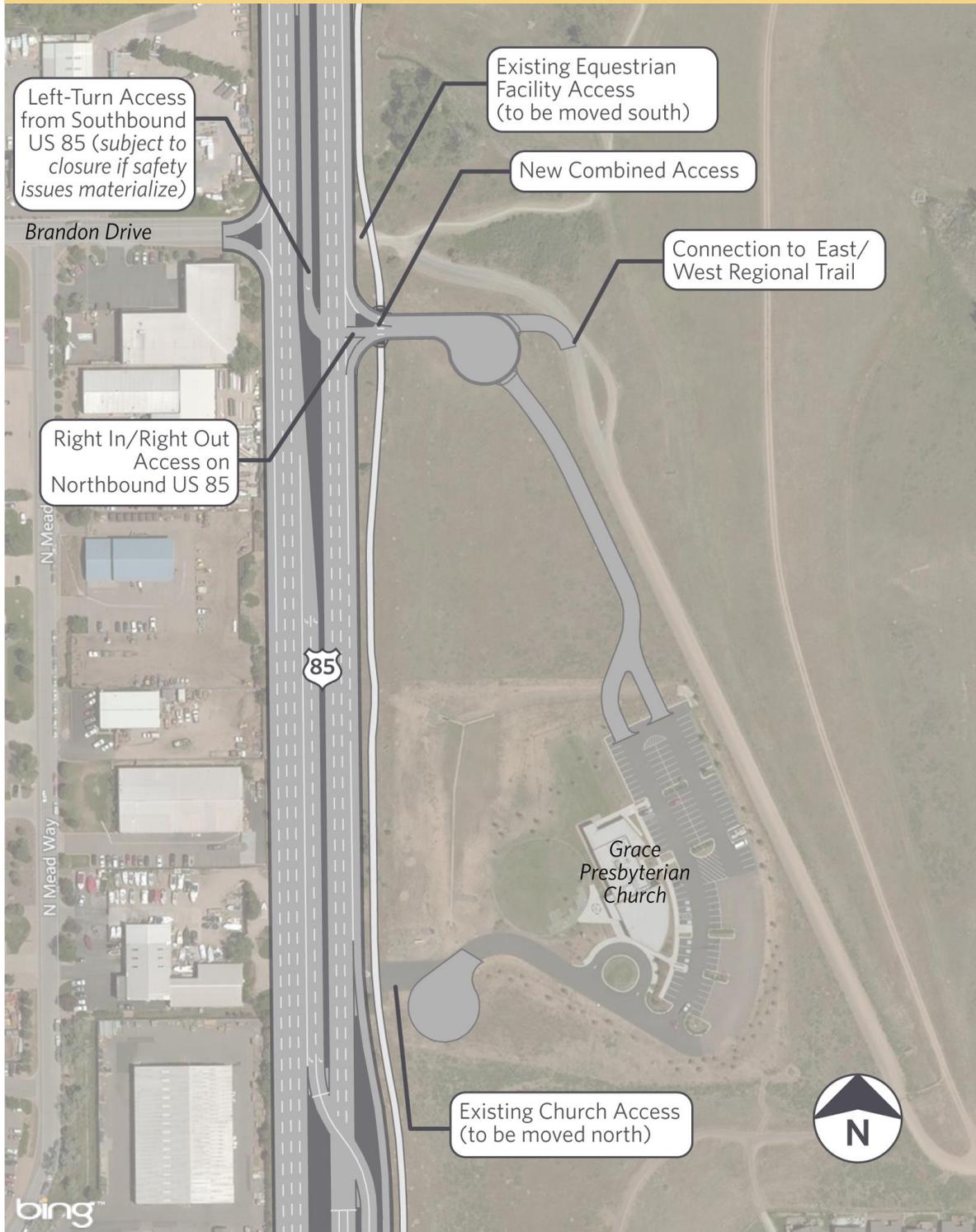
Source: HDR 2016.

5

6 **Access to the Spring Gulch Equestrian Facility (owned by the U.S. Army Corps of**
 7 **Engineers) is combined with access to Grace Presbyterian Church.** This is a 3/4
 8 movement; however, the southbound left turn movement may be eliminated at CDOT's
 9 discretion if safety issues materialize. Traffic destined to southbound US 85 from this access
 10 would make a U-turn at Town Center Drive. This change includes paving of the driving entrance
 11 and relocating the entrance 120 feet south (Figure 15). The Grace Presbyterian Church was not
 12 in this location in 2002, so the project setting has changed.

13

Figure 15. Combined Access for Spring Gulch Equestrian Facility and Grace Presbyterian Church



Source: HDR 2016.

1

1 **Shared-use Path.** There are minor changes in the width of shared-use path and the width of
2 separation between the roadway and path.

- 3 • *Highlands Ranch Parkway to Blakeland Drive.* Rather than a consistent 5-foot landscaped
4 buffer, the path has 2-foot gravel shoulders, and its distance from the roadway generally
5 varies from between 2 and 22 feet with landscaping in the buffer where there is adequate
6 room. At the railroad crossings south of Blakeland Drive, the path is detached and set back
7 from the roadway by 14 feet.
- 8 • *Blakeland Drive to C-470.* The Refined Selected Alternative has a wider path (10 feet
9 instead of 8 feet) that is detached on the east side of US 85 with landscaping in the buffer
10 where there is adequate room. On the west side, it is also 10 feet wide but attached.
- 11 • *C-470 Trail (also called the Centennial Trail).* The shared-use path is connected to the C-
12 470 Trail with an improved at-grade crossing of US 85. The at-grade crossing
13 enhancements for the C-470 Trail include restriping the crosswalks, adding new Americans
14 with Disabilities Act of 1990 (ADA) ramps, reconfiguring the existing median island, and
15 providing better wayfinding through the intersection. A future grade-separated crossing will
16 be constructed in a later project when funded.

17 **Water Quality Treatment.** To meet current municipal separate storm sewer systems (MS4)
18 requirements, the Refined Selected Alternative assumes conversion of an existing parcel owned
19 by Douglas County (north of Brandon Drive) by the High Line Canal to a water quality facility.
20 This location has been tentatively selected at this phase of design, but specific details may
21 change during the final design process. If the changes result in additional environmental
22 impacts, those will be documented in a reevaluation.

23 **High Line Canal Trail Grade-separated Crossing.** The culvert for the High Line Canal Trail
24 underpass at US 85 (Figure 16) is now 2 feet higher and wider than the Selected Alternative—
25 12 feet high and 14 feet wide.

Figure 16. High Line Canal Trail Grade-separated Crossing: Existing Condition and Future Condition Simulation



Source: CDOT 2002.

1

2 **5.0 Environmental Consequences**

3 The analysis of environmental consequences to vegetation and wildlife includes a discussion of
 4 the intensity, duration (short-term construction impacts and long-term operational impacts), and
 5 type of impact.

6 **5.1 Changes in Impacts since FEIS/ROD**

7 **Noxious Weeds and Vegetation**

8 Minor roadside vegetation removal would be required to facilitate roadway widening and other
 9 improvements. The majority of vegetation removal would occur within existing road rights-of-
 10 way or disturbed areas. Clearing and grubbing will extend to the toe of fill slopes for roadway
 11 widening. The Refined Selected Alternative directly impacts approximately 8.06 acres of
 12 upland/disturbed habitat located within the right-of-way. Temporary construction impacts include
 13 approximately 1.76 acres of upland habitat. The habitat that is converted is primarily disturbed
 14 roadside habitat that has already been degraded and provides little habitat value to wildlife.

1 Short-term, negligible to moderate adverse impacts are expected during construction activities;
2 however, no significant, long-term impacts on vegetation resources would be expected.

3 Soil disturbance from construction equipment could create favorable conditions for noxious
4 weeds to establish or further spread. Construction equipment can carry weed seeds in residual
5 mud or soil on the equipment from one location to another. Noxious weed species that occur in
6 the disturbed areas of the study area have the potential to spread into areas that are currently
7 weed-free.

8 Impacts to riparian vegetation are discussed in below in Senate Bill 40 Riparian Areas.

9 **Federally Listed Species**

10 Consultation with USFWS indicates that the only federally listed species that could be affected
11 by the Refined Selected Alternative is the Preble's meadow jumping mouse (A. Michael,
12 USFWS, 2015 personal comm. to Francesca Tordonato, CDOT). Therefore, a Biological
13 Assessment was prepared in August 2016 that determined that the Proposed Action *may affect*
14 *but is not likely to adversely affect* the Preble's meadow jumping mouse or its critical habitat
15 (HDR 2016b).

16 The primary threats to the Preble's include loss, alteration and fragmentation of habitat,
17 principally through conversion of prairie habitat containing well-developed riparian areas to
18 agricultural and residential developments (73 Federal Register 39790). Changes to stream flow
19 regimes due to water developments, diversions, and flood control have decreased the
20 vegetative cover these mice need for cover, nests, food, and hibernation (73 Federal Register
21 39790). Road construction, bank stabilization, intense grazing, rock and sand extraction,
22 invasive weeds, and fire have also been identified as threats.

23 The majority of project construction activities would occur within the block clearance zone for
24 Preble's in areas that are highly developed or degraded. There would be no direct impacts to
25 riparian habitat in occupied Preble's habitat that has not been block cleared (Figure 5).
26 However, due to the proximity to Plum Creek and Chatfield Reservoir, its possible that Preble's
27 could forage in riparian areas on the west side of the action area. Minor impacts to riparian
28 habitat that could be used for foraging would occur as a result of roadway widening, modifying
29 the High Line Canal culvert, and improvements at Spring Gulch. A total of approximately 1.4
30 acres of permanent impact to riparian habitat and 0.44 acre of temporary impact to riparian
31 vegetation will occur in the action area. No impacts would occur within Preble's critical habitat
32 along Plum Creek. Impacts to Preble's connectivity are discountable since the area does not
33 likely provide movement across US 85. Total impacts to all riparian areas (occupied and non-
34 occupied habitats) are listed in Table 3.

35 Construction activities may temporarily affect Preble's in the vicinity of the study area if
36 construction activities are conducted during the Preble's active season (May 1 through
37 November 1). Construction activities are expected to occur year-round from early 2019 through
38 late 2020. Although temporary disturbance from construction activities may occur, the effect is
39 expected to be minor and temporary because it is likely that the species would avoid the area if

1 possible during construction activities. It is unlikely there are any occupied burrows in the study
2 area riparian areas due to the high levels of human disturbance and degraded adjacent upland
3 habitat. However, if occupied burrows were present construction activities such as heavy
4 equipment operation could impact burrows through ground vibration and loud noise. In addition,
5 Preble's could be crushed or smothered by construction equipment or workers.

6 Water use required for some construction activities would affect federally listed species that are
7 potentially impacted by depletions to the Platte River system. These species include the Least
8 Tern, Piping Plover, western prairie fringed orchid, Whooping Crane, and pallid sturgeon.
9 Measures outlined in the USFWS *Final Programmatic Biological Opinion* (USFWS 2012) will be
10 followed to minimize impacts.

11 **State-listed Species**

12 A total of 13 state-listed species may occur in the study area (Table 2). An evaluation of the
13 anticipated impacts from the Refined Selected Alternative is described below for state-listed
14 species with potential to occur in the study area.

15 **Bald Eagle**

16 Impacts to black-tailed prairie dog colonies could reduce the availability of potential prey in the
17 study area, which would impact wintering Bald Eagles. The degree to which Bald Eagles use
18 the study area during winter and for foraging is unknown; however, because the study area is
19 surrounded by development and human activity, the foraging habitat is likely marginal. Other
20 impacts could occur to individual Bald Eagles from temporary auditory disturbance caused by
21 construction of the Refined Selected Alternative. Riparian tree removal will be required in some
22 locations; however, no large trees, which might be roosting trees, would be removed. No known
23 nesting or roosting sites occur in the study area (CPW 2015a).

24 **Black-tailed Prairie Dog**

25 One active black-tailed prairie dog colony that encompasses approximately 1.04 acres occurs in
26 the study area (Figure 6). Construction activities would impact 0.25 acre of the mapped prairie
27 dog colony. The contractor will assess the feasibility of passive relocation of impacted prairie
28 dog colonies as an option prior to or during construction. Human activities and noise during
29 construction could temporarily displace prairie dogs from active construction areas. Construction
30 could result in soil compaction and vegetation removal that may negatively impact prairie dogs.
31 The prairie dog colony is located in a highly developed transportation corridor and, therefore,
32 these impacts are considered minor to negligible.

33 **Common Garter Snake and Northern Leopard Frog**

34 The Refined Selected Alternative could result in some direct mortality to common garter snakes
35 and/or the northern leopard frog from construction activity in riparian and wetland habitat. The
36 use of heavy equipment during construction may cause common garter snakes to temporarily
37 avoid riparian areas adjacent to construction activity. Direct impacts to riparian and wetland
38 habitat would be minor and would result in a permanent loss of habitat for both species.

1 Indirect impacts such as short-term, localized sedimentation increases could occur when
2 upgrading the High Line Canal Trail crossing. Mitigation measures that benefit the common
3 garter snake and northern leopard frog will be outlined in provisions of the SB 40 Wildlife
4 Certification and BMPs associated with the CWA 404 Permit.

5 **5.2 State-listed Fish**

6 Direct impacts to common shiner, northern redbelly dace, and Iowa darter Iowa darters are not
7 expected from the Refined Selected Alternative. Construction equipment working adjacent to
8 Plum Creek or other flowing waters may cause temporary erosion of disturbed soils,
9 sedimentation downstream, increased turbidity, and stormwater runoff. No proposed in-water
10 work in Plum Creek is anticipated.

11 The implementation of water quality BMPs will result in improved water quality conditions
12 compared to existing conditions.

13 **5.3 Migratory Birds and Raptors**

14 Construction of the Refined Selected Alternative could result in displacement of birds from
15 habitat near construction areas and temporary auditory disturbance caused by construction
16 activities. Direct impacts on migratory bird habitat would include loss of roadside and riparian
17 habitat that would be converted to transportation use. The loss of 1.4 acres of riparian habitat
18 and 0.12 acre of wetland habitat would slightly reduce habitat availability for migratory birds in
19 the study area. However, the habitat that would be converted is disturbed roadside habitat that
20 has already been degraded and provides little habitat value. Removal of riparian vegetation
21 would reduce migratory bird nesting habitat in the study area. However, riparian trees and
22 shrubs removed during construction will be replaced (Senate Bill 40 Riparian Areas Section,
23 Section 5.5). Replacement of bridges could impact swallow colonies nesting under the
24 structures.

25 Construction of the Refined Selected Alternative would occur year-round from early 2019
26 through late 2020. Most of the study area does not provide adequate cover and habitat for
27 migratory birds. However, if construction takes place during the nesting season for migratory
28 birds (April 1 through August 31), nest loss or abandonment may occur. Disturbance by
29 construction workers and equipment may be significant enough to cause stress to nesting birds
30 and result in abandonment and/or predation of nests. Tree and/or snag removal in riparian
31 areas could directly impact nesting birds if present, causing nest failure or mortality of young.

32 If construction-related activities occur between February 1 and August 31, a raptor nest survey
33 will be conducted and will include a 0.5-mile buffer from the construction site. If raptor nests are
34 identified within the buffer, CPW recommended buffer zones and seasonal restriction dates will
35 be established.

36 **5.4 Terrestrial Mammals**

37 Direct impacts to terrestrial mammals would include impacts to approximately 8.06 acres of
38 upland vegetation and 1.4 acres of riparian habitat for the construction of new lanes. Most

1 impacts would be to relatively low quality habitat in the mowed areas of existing right-of-way
 2 which provides little habitat value to large terrestrial mammals. Project construction activities
 3 could temporarily displace mammals from the active construction areas because of increased
 4 noise and human activity during construction. However, wildlife that currently occupy the study
 5 area or use the adjacent areas for foraging are likely habituated to noise and human
 6 disturbance due to the disturbed nature of the study area and, therefore, the impacts associated
 7 with displacement are considered minor.

8 US 85 currently poses a substantial barrier to movement for most terrestrial mammals in the
 9 area. Two additional traffic lanes would increase the barrier effect in the study area and could
 10 result in more vehicle-wildlife crashes in the study area.

11 A potential benefit of the Refined Selected Alternative would include modification of the existing
 12 High Line Canal Trail crossing at US 85 and increasing the angle of the wingwalls at the bridge
 13 at Marcy Gulch. The new wingwalls at Marcy Gulch will be angled to allow more light into the
 14 bridge crossing and possibly be more inviting to wildlife to cross at this site. The High Line
 15 Canal crossing would be upgraded from an at-grade crossing to a grade-separated crossing
 16 that is 12 feet high and 14 feet wide. The grade-separated crossing is sized large enough to
 17 provide a movement corridor for some mammals (such as raccoons and other small mammals)
 18 traveling between Chatfield State Park and potential wildlife habitat east of US 85.

19 Project construction activities could result in direct mortality to small mammals from heavy
 20 equipment and construction traffic. The use of heavy equipment during construction may cause
 21 small mammals to avoid the area; however, this would be temporary.

22 5.5 Senate Bill 40 Riparian Areas

23 Approximately 1.4 acres of riparian vegetation would be impacted at six locations in the study
 24 area (Table 3) to facilitate construction of the Refined Selected Alternative. Temporary
 25 construction impacts would include approximately 0.44 acre of riparian habitat in the study area.
 26 Riparian trees and shrubs removed during construction will be replaced as stipulated in CDOT's
 27 Guidelines for Senate Bill 40 Wildlife Certification (CDOT 2013b). The SB 40 Wildlife
 28 Certification request will be made by the CDOT Environmental Project Manager to CPW. The
 29 application must be made at least 60 days prior to any planned construction. CPW will complete
 30 its review within 30 days and issue an SB 40 Certification or request additional information or
 31 mitigation commitments.

Table 3. Location and Magnitude of Potential Impacts to Riparian Areas

Location	Temporary Impacts (acres)	Permanent Impacts (acres)
North of Blakeland East Side of US 85	0.026	0.532
South of Blakeland to just South of Aspen Terrace Mill Vista Road—East Side of US 85	0.018	0.458
Marcy Gulch West Side of US 85	0.197	0

Table 3. Location and Magnitude of Potential Impacts to Riparian Areas

Location	Temporary Impacts (acres)	Permanent Impacts (acres)
Marcy Gulch East Side of US 85	0.005	0.197
High Line Canal West Side of US 85	0.065	0.034
High Line Canal East Side of US 85	0.114	0.116
Spring Gulch East Side of US 85	0.019	0.054
Total Impacts (acres)	0.44	1.4

5.6 Summary of Impacts from FEIS/ROD and Changes in Impacts since FEIS/ROD

The FEIS/ROD (CDOT 2002) included an evaluation of impacts for the alternatives to the I-25 Corridor and US 85 Corridor based on FHWA guidelines. The impacts from the FEIS/ROD and the Refined Selected Alternative are listed by resource category in Table 4.

6.0 Mitigation

Summary of Mitigation from FEIS/ROD

The following list of mitigation requirements were identified in the FEIS/ROD. Many of the mitigation measures will be carried over to the current Refined Selected Alternative.

Vegetation

- Fence of construction zone and access points at specific locations to limit impacts outside the project area.
- Develop landscape management practices to avoid the removal of vegetation where possible.
- Implement temporary and permanent erosion control measures such as revegetating disturbed areas with native grasses, mulching, erosion control blankets, sediment basins, erosion bales, and silt fences.
- Grade and seed incrementally to reduce soil loss during construction. Native grasses should be used in seed mixes. Native shrub species should be added to the seed mix in areas where conflicts with maintenance can be avoided.
- Use native grass species. For areas identified as having moderate to high erosion potential, fast-growing, non-native cover species should be included in the seed mix to minimize soil loss while native species establish. Seeding rates will be determined by CDOT.
- Round ditches and slopes to prevent unnecessary erosion.

Table 4. Impacts for Biological Resources from FEIS/ROD and the Refined Selected Alternative

Biological Resource	FEIS/ROD (Selected Alternative) Impacts	Changes in Impacts since FEIS/ROD for Refined Selected Alternative	Significance of Change
Vegetation and Noxious Weeds	<p>The Selected Alternative would permanently impact 169 acres and temporarily impact 32 acres of upland vegetation communities along the US 85 Corridor. Additionally, the Selected Alternative would result in impacts to some mesic shrub vegetation that occurs within dry gulches intersected by US 85 and some streamside riparian vegetation at Marcy Gulch and Spring Gulch. The FEIS/ROD did not include information on noxious weeds in the study area.</p>	<ul style="list-style-type: none"> ▪ The Refined Selected Alternative would directly impact approximately 8.06 acres of upland habitat that would be converted to transportation use. Temporary construction impacts would include approximately 1.76 acres of upland habitat. ▪ Noxious weeds may establish or further spread as a result of construction equipment. A Noxious Weed Management Plan will be prepared and implemented prior to construction activities and best management practices that will be used to eradicate or control weeds during and after construction. 	<p>Impacts to upland vegetation are significantly less than what was outlined in the FEIS/ROD.</p>
Threatened, Endangered, and Other Special-Status Species Impacts	<ul style="list-style-type: none"> ▪ The FEIS/ROD reported impacts to the bald eagle, swift fox, plains sharp-tailed grouse, burrowing owl, American peregrine falcon, ferruginous hawk, northern redbelly dace, common shiner, brassy minnow, and Iowa darter. ▪ Black-Tailed Prairie Dog impacts include disturbance to 6.1 acres of black-tailed prairie dog habitat along the US 85 Corridor. Black-tailed prairie dogs colonies would either be permanently displaced or lost as a direct result of the Selected Alternative. ▪ The FEIS/ROD concluded that Preble's 	<ul style="list-style-type: none"> ▪ No direct impacts will occur to Preble's habitat by the Refined Selected Alternative and a Biological Assessment was prepared in August 2016 that determined that the Proposed Action <i>may affect but is not likely to adversely affect</i> the Preble's meadow jumping mouse or its critical habitat. ▪ Potential to impact the Least Tern (interior population), pallid sturgeon, Piping Plover, western prairie fringed orchid, and the Whooping Crane as a result of a 	<ul style="list-style-type: none"> ▪ Impacts to black-tailed prairie dogs are reduced to 0.25 acres. Concurrence from USFWS will be required for the Preble's Biological Assessment. ▪ Depletions to the South Platte River as a result of the construction activities will require minimizing impacts and following measures outlined in the USFWS <i>Final Programmatic Biological Opinion</i> (USFWS 2012).

Table 4. Impacts for Biological Resources from FEIS/ROD and the Refined Selected Alternative

Biological Resource	FEIS/ROD (Selected Alternative) Impacts	Changes in Impacts since FEIS/ROD for Refined Selected Alternative	Significance of Change
	<p>habitat is not impacted by the Selected alternative along the US 85 Corridor.</p> <ul style="list-style-type: none"> ▪ As reported in the FEIS/ROD, two special-status species have the potential to be secondarily impacted by loss of black-tailed prairie dogs and their habitat. Black-tailed prairie dogs are an important Front Range winter food source for the bald eagle. Burrowing owls require black-tailed prairie dog burrows for cover. Loss of black-tailed prairie dogs and their habitat due to the Selected Alternatives are relatively small, and therefore, are not expected to cause substantial secondary impacts to ferruginous hawks, bald eagles, or burrowing owls. ▪ The Selected Alternative may result in an increase in impervious surface area, thereby increasing stormwater runoff, and potentially degrading aquatic and riparian habitats. Potential secondary impacts to the Preble's, northern leopard frog, northern redbelly dace, common shiner, brassy minnow, and Iowa darter may occur. ▪ Additionally, secondary impacts to Preble's populations may also occur due to increased traffic noise and vibration, and increased lighting from the project. 	<p>depletion to the South Platte River.</p> <ul style="list-style-type: none"> ▪ Project construction will impact 0.25 acre of black-tailed prairie dog habitat in the study area. 	

Table 4. Impacts for Biological Resources from FEIS/ROD and the Refined Selected Alternative

Biological Resource	FEIS/ROD (Selected Alternative) Impacts	Changes in Impacts since FEIS/ROD for Refined Selected Alternative	Significance of Change
Migratory Birds	<ul style="list-style-type: none"> ▪ Not previously discussed in FEIS/ROD 	<ul style="list-style-type: none"> ▪ Construction of the Refined Selected Alternative could result in some direct mortality to migratory birds, and displacement of birds from habitat near construction areas. ▪ Replacement of bridges could impact swallow colonies nesting under the structures. 	<ul style="list-style-type: none"> ▪ MBTA rules will still apply. Nesting swallow colonies will require pre-construction surveys.
Wildlife	<ul style="list-style-type: none"> ▪ The Selected Alternative would result in a permanent loss of approximately 151 acres of upland habitat along the US 85 Corridor. Portions of several small black-tailed prairie dog colonies would be impacted, resulting in the loss of approximately 6.1 acres of black-tailed prairie dog habitat. ▪ The FEIS/Rod reported increased barrier effects for wildlife attempting to cross US 85, especially to ungulates and decreased permeability of the US 85 Corridor for species less likely to use extended bridges or culverts. ▪ The FEIS/ROD identified secondary impacts to wildlife habitat from increased operational capacity/activity, and habitat loss or degradation. ▪ Loss of black-tailed prairie dog habitat has the potential to secondarily affect numerous other species such as 4 species of reptiles, 23 species of birds, 	<ul style="list-style-type: none"> ▪ Direct impacts to terrestrial mammals would include impacts to approximately 8.06 acres of upland vegetation. Project construction will directly impact 0.25 acre of black-tailed prairie dog habitat in the study area. ▪ A benefit of proposed improvements would be modification of the existing High Line Canal Trail. The crossing at US 85 would be upgraded from an at-grade crossing to a grade-separated crossing. The grade-separated crossing could improve the movement corridor for large and small mammals traveling between Chatfield State Park and wildlife habitat east of US 85. 	<ul style="list-style-type: none"> ▪ Impacts to wildlife are similar to what was discussed in FEIS/ROD. Benefit of wider crossing at High Line Canal and wider wing walls at Marcy Gulch is a potential net benefit to wildlife species in study area.

Table 4. Impacts for Biological Resources from FEIS/ROD and the Refined Selected Alternative

Biological Resource	FEIS/ROD (Selected Alternative) Impacts	Changes in Impacts since FEIS/ROD for Refined Selected Alternative	Significance of Change
	<p>and 16 species of mammals that may be drawn to black-tailed prairie dog colonies.</p> <ul style="list-style-type: none"> ▪ Secondary impacts to riparian and aquatic habitats include degraded water quality and erosive effects of runoff. ▪ Vegetation clearing activities and noise generated during construction could temporarily displace wildlife from habitat in the immediate vicinity of the construction zone. 		
SB 40 Riparian Areas	The Selected Alternative results in impacts to some mesic shrub vegetation that occurs within dry gulches intersected by US 85 and some streamside riparian vegetation at Marcy Gulch and Spring Gulch.	Approximately 1.4 acre of riparian vegetation would be impacted at six locations in the study area (Figure 3) to facilitate construction of the Refined Selected Alternative. Riparian trees and shrubs removed during construction will be replaced as stipulated in CDOT’s Guidelines for Senate Bill 40 Wildlife Certification (CDOT 2013).	Significance of change is unknown since riparian impact quantities were not provided in FEIS/ROD.

1

- 1 • Inventory and map, prior to construction, state listed noxious weeds in the right-of-way and
2 adjacent areas of both corridors using North American Weed Management Association
3 protocols. The mapping must be compatible with the current CDOT geographic information
4 system (GIS).
- 5 • Analyze the potential spread of identified noxious weeds due to construction activities.
- 6 • Develop and implement a site-specific integrated pest management plan (IPMP) that
7 focuses on the prevention and elimination of noxious weed species in the project area.
- 8 • Include in the IPMP measures, such as coordination with other agencies; appropriate
9 herbicide selection and timing of herbicide spraying; using backpack herbicide sprayers in or
10 around sensitive areas (e.g., wetlands or riparian areas); cleaning equipment between sites
11 to reduce the spread of noxious weeds; hand pulling, stripping, and removing topsoil; re-
12 seeding areas with native seed, may be included in the IPMP.
- 13 • Use certified weed-free mulch and inspecting as regulated by the Weed Free Forage Act
14 (Title 35, Article 27.5, CRS).
- 15 • Reseed vegetation as necessary to maintain good erosion control practices.
- 16 • Denote shrubland, woodland, and riparian areas on the construction plans. Replace
17 impacted shrubs and trees contingent upon water availability and right-of-way maintenance.

18 **Wildlife**

19 Mitigation for lost habitat and permeability among habitats will be coordinated with the CPW and
20 will include:

- 21 • Providing mitigation for riparian habitat losses. Woody riparian vegetation will be mitigated at
22 a replacement ratio of 1:1 where water requirements can be met for planting riparian
23 vegetation. Mitigation will include enhancement and/or reclamation, and will consist of
24 revegetation (i.e., cottonwood and willow plantings, snowberry, etc.) and reseeding with
25 native grass and forb species specified by CDOT.
- 26 • Maintaining existing hydraulic structures (i.e., concrete box culverts, bridges, etc.) where
27 practical to facilitate movement of carnivores or mid-sized mammals, even if they are no
28 longer needed for water movement.

29 **Threatened, Endangered, and Other Special-Status Species**

30 Compensatory mitigation for the Preble's habitat will include:

- 31 • Restoring habitat that will be temporarily disturbed during construction (on-site restoration).
32 General restoration measures will include in-kind replacement of disturbed vegetation and
33 reconstruction of original slope contours where this would benefit restoration efforts.

- 1 • Restoring or enhancing habitat that has been degraded by non-project actions (i.e., check
2 dams on East Plum Creek).
- 3 • Protecting habitat of off-site areas within Douglas County.
- 4 • Compensatory mitigation for black-tailed prairie dog habitat conversion might include:
 - 5 ▶ Relocating black-tailed prairie dogs, where possible, to inactive colonies within the APE,
6 or relocating a colony in accordance with Senate Bill 99-111 requirements.
 - 7 ▶ Purchasing or otherwise protecting (e.g., conservation easement) land, where possible,
8 containing active black-tailed prairie dog colonies adjacent to undisturbed habitat.
9 Protected black-tailed prairie dog habitats should be equal in size to habitat lost from the
10 Preferred Alternative or Other Alternative.
 - 11 ▶ Contributing financially or in-kind services for the preservation of black-tailed prairie dog
12 habitat equal in size to habitat lost from the Selected Alternative. Work with Douglas
13 County Open Space, Chatfield Basin Conservation Network, and CPW to identify key
14 parcels for protection.
 - 15 ▶ Black-tailed prairie dogs may be turned over to the USFWS.
- 16 • Prior to construction, the USFWS and the CPW will review the final mitigation measures for
17 species under their respective jurisdictions. Final mitigation measures may include additional
18 information on timing of construction activities, steeper side slopes, or other means of
19 reducing impacts.

20 **Summary of New Mitigation Measures for Refined Selected Alternative**

21 The applicable mitigation measures for biological resources in the study area are included
22 below:

- 23 • Riparian trees and shrubs removed during construction will be replaced as stipulated in
24 CDOT's Guidelines for Senate Bill 40 Wildlife Certification, which state that trees removed
25 during construction, whether native or non-native, shall be replaced with a goal of 1:1
26 replacement based on a stem count of all trees with diameter at breast height of 2 inches or
27 greater (CDOT 2013b). Shrubs removed during construction, whether native or non-native,
28 will be replaced based on their preconstruction areal coverage. In all cases, all such trees
29 and shrubs will be replaced with native species. BMPs applicable in SB 40 jurisdictional
30 areas will be proposed to CPW in the SB 40 application package when specific project
31 impacts are determined in final design.
- 32 • In accordance with the SB 40 Memorandum of Agreement, success criteria for trees and
33 shrubs will be followed per CDOT Specification 214.

- 1 • Construction staging and materials stockpiling will be located greater than 50 feet from the
2 edge of wetlands or the edge of other waters of the U.S., when possible, to avoid
3 disturbance of vegetation and to prevent pollutant discharges into sensitive habitats.
4 Specific locations will be determined during construction planning.
- 5 • Equipment will be refueled within designated refueling containment areas away from the
6 ordinary high water mark and wetlands.
- 7 • Wetland/riparian areas not impacted by the project will be protected from construction
8 activities by temporary and/or construction limit fencing.
- 9 • When possible, vegetation shall be cleared outside of the active nesting period of April 1
10 through August 31. If construction is to commence between April 1 and August 31, to avoid
11 impacts to nesting birds in accordance with the MBTA, a qualified biologist will conduct a
12 nest survey prior to construction. If active nests are found, coordination with CPW and
13 USFWS is required to determine an appropriate course of action, which may include, but is
14 not limited to, a delay in construction to avoid the breeding season.
- 15 • CDOT Specification 240 includes additional details on the MBTA compliance. Construction
16 activities as a result of the Proposed Action will adhere to these specifications.
- 17 • Raptor nest surveys will be required if construction activities are scheduled between
18 February 1 and August 31 and will include a 0.5-mile buffer from the construction site. If
19 raptor nests are identified within the buffer, CPW recommended buffer zones and seasonal
20 restriction dates will be established.
- 21 • A survey for swallow nests shall be conducted for any work on structures during the period
22 of April 1 through August 31. Surveys will comply with CDOT Section 240 - Protection of
23 Migratory Birds during Structure Work. If swallow nests are present on the structure and
24 work is planned for this time, nests should be removed before April 1. If swallows are trying
25 to build nests between April 1 and August 31, the biologist should monitor the structure
26 every three days. If the swallows are building a nest, they should be removed before the
27 nest is complete.
- 28 • Mitigation for impacts caused by water depletions on Platte River species will be addressed
29 by FHWA and CDOT participation in the Platte River Recovery Implementation Program, the
30 South Platte Water Related Activities Program, Inc. (SPWRAP), and the existing
31 Programmatic Biological Assessment between CDOT and USFWS. Water used for this
32 project will be reported to the USFWS at the completion of the project.
- 33 • Temporary disturbance areas will be reseeded and protected using CDOT-approved BMPs.
34 Any disturbance to existing vegetation will be avoided to the maximum extent possible.
- 35 • Equipment will be refueled within designated refueling containment areas away from the
36 ordinary high water mark and wetlands.

- 1 • Wetland/riparian areas not impacted by the project will be protected from construction
2 activities by temporary and/or construction limit fencing.
- 3 • To the maximum extent practicable, limit disturbing (for example, crushing, trampling) or
4 removing (for example, cutting, clearing) all vegetation, such as willows, trees, shrubs, and
5 grasses within riparian and adjacent upland habitats to avoid impacts to Preble's.
- 6 • A Burrowing Owl survey should be completed according to the CPW Guidelines. CPW
7 recommends conducting burrowing owl clearance surveys in prairie dog towns that are
8 subject to poisoning and/or construction projects during the period from March 15 through
9 October 31. Construction occurring between November 1 and March 14 would not require
10 clearance surveys. Where burrowing owls are present, prairie dog removal should be
11 scheduled for November 1 to March 14. If burrowing owls are found within the construction
12 footprint, individual nest burrows and a 150-foot buffer around the burrow should be left
13 undisturbed during construction (CPW 2008).
- 14 • Mitigation for impacts to black-tailed prairie dogs in the study area will follow the 2009 CDOT
15 Impacted Black-tailed Prairie Dog Policy (CDOT 2009) and Douglas County Open Space
16 and Parks Divisions Prairie Dog Conservation Policy (Douglas County 2015).
- 17 • The contractor will assess the feasibility of passive relocation of impacted prairie dog
18 colonies as an option prior to or during construction.
- 19 • A Noxious Weed Management Plan will be prepared prior to construction that identifies
20 control methods (e.g., herbicides) and BMPs that will be used to eradicate or control weeds
21 during and after construction.
- 22 • The High Line Canal crossing would be upgraded from an at-grade crossing to a grade-
23 separated crossing that is 12 feet high and 14 feet wide.

24 **Changes in Mitigation since FEIS/ROD**

25 A revision was made to include the following mitigation measure for Burrowing Owls: If
26 construction in prairie dog colonies will occur during the Burrowing Owl nesting season
27 (February 1 to August 31), a survey following CPW protocols will be conducted no more than 30
28 days prior to construction. If a nesting pair is discovered, no construction activity will occur
29 within 150 feet of the nest between March 15 and October 31.

30 A new mitigation measure was added that stipulates CDOT's Guidelines for Senate Bill 40
31 Wildlife Certification will be followed (CDOT 2013b).

32 A new mitigation measure was added for impacts caused by water depletions on federally listed
33 species.

1 Mitigation for impacts to black-tailed prairie dogs in the study area was modified to follow the
2 2009 CDOT Impacted Black-tailed Prairie Dog Policy (CDOT 2009) instead of Senate Bill 99-
3 111 requirements.

4 Mitigation measures for the protection of migratory birds were added that include timing
5 windows, surveys for swallow nests under structures, and raptor nest surveys. CPW-
6 recommended buffer zones and seasonal restriction dates were included.

7 The requirement for an IPMP was changed to a Noxious Weed Management Plan.

8 **7.0 Agency Coordination Conducted**

9 CDOT has initiated coordination with federal agencies including the USFWS and CPW for the
10 proposed project. Coordination with Alison Michael (USFWS) was conducted prior to biological
11 field surveys to determine appropriate surveys for study area. Alison Michael confirmed that the
12 study area is not likely to provide habitat for any federally listed species except for the Preble's
13 meadow jumping mouse and that official concurrence from USFWS will be required for potential
14 impacts to its habitat.

15 A resource agency meeting was held on September 24, 2015, to discuss the Refined Selected
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Appendix A.
USFWS Online Information, Planning,
and Conservation (IPaC) System Letter





United States Department of the Interior



FISH AND WILDLIFE SERVICE
Colorado Ecological Services Field Office
134 UNION BOULEVARD, SUITE 670
LAKEWOOD, CO 80228

PHONE: (303)236-4773 FAX: (303)236-4005

URL: www.fws.gov/coloradoES; www.fws.gov/platteriver

Consultation Code: 06E24000-2016-SLI-0395

August 02, 2016

Event Code: 06E24000-2016-E-01596

Project Name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Official Species List

Provided by:

Colorado Ecological Services Field Office

DENVER FEDERAL CENTER

P.O. BOX 25486

DENVER, CO 80225

(303) 236-4773

<http://www.fws.gov/coloradoES>

<http://www.fws.gov/platteriver>

Consultation Code: 06E24000-2016-SLI-0395

Event Code: 06E24000-2016-E-01596

Project Type: TRANSPORTATION

Project Name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Project Description: Corridor improvements in between Highlands Ranch parkway and CO 470.

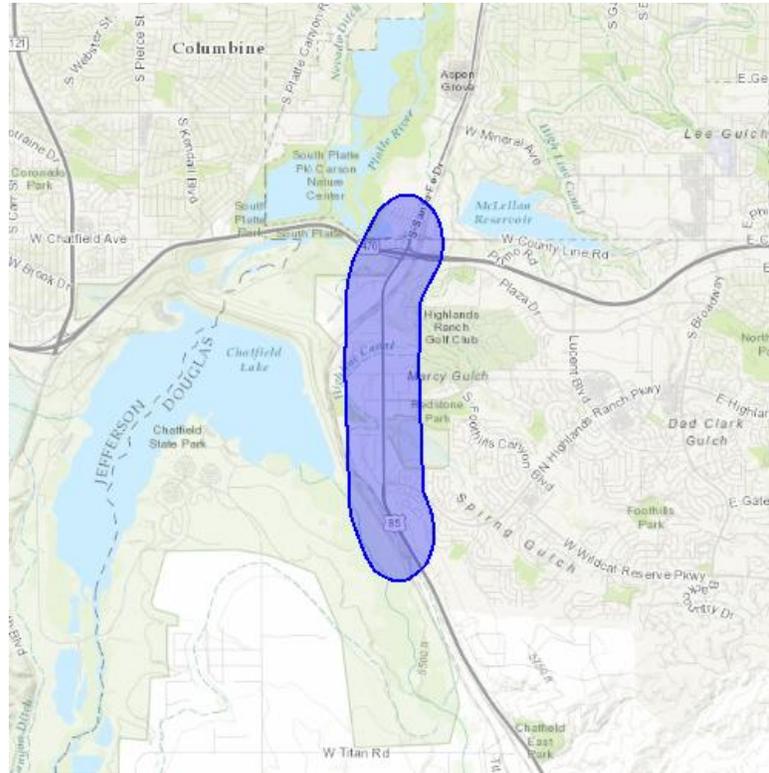
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Arapahoe, CO | Douglas, CO



United States Department of Interior
Fish and Wildlife Service

Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Endangered Species Act Species List

There are a total of 10 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 5 of these species should be considered only under certain conditions. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Least tern (<i>Sterna antillarum</i>) Population: interior pop.	Endangered		Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.
Mexican Spotted owl (<i>Strix occidentalis lucida</i>) Population: Entire	Threatened	Final designated	
Piping Plover (<i>Charadrius melodus</i>) Population: except Great Lakes watershed	Threatened	Final designated	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.
Whooping crane (<i>Grus americana</i>) Population: except where EXPN	Endangered	Final designated	Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.



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Fishes			
Greenback Cutthroat trout <i>(Oncorhynchus clarki stomias)</i> Population: Entire	Threatened		
Pallid sturgeon <i>(Scaphirhynchus albus)</i> Population: Entire	Endangered		Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.
Flowering Plants			
Colorado Butterfly plant <i>(Gaura neomexicana var. coloradensis)</i>	Threatened	Final designated	
Ute ladies'-tresses <i>(Spiranthes diluvialis)</i>	Threatened		
Western Prairie Fringed Orchid <i>(Platanthera praeclara)</i>	Threatened		Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska.
Mammals			
Preble's meadow jumping mouse <i>(Zapus hudsonius preblei)</i> Population: wherever found	Threatened	Final designated	



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Fish and Wildlife Service

Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Mammals	Critical Habitat Type
Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>) Population: wherever found	Final designated



United States Department of Interior
Fish and Wildlife Service

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Appendix A: FWS National Wildlife Refuges and Fish Hatcheries

There are no refuges or fish hatcheries within your project area.



United States Department of Interior
Fish and Wildlife Service

Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Appendix B: FWS Migratory Birds

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no otherwise lawful activities. For more information regarding these Acts see: <http://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>
<http://www.fws.gov/birds/policies-and-regulations/laws-legislations/bald-and-golden-eagle-protection-act.php>

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:

<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

For information about conservation measures that help avoid or minimize impacts to birds, please visit:

<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tools at:

<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>



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Fish and Wildlife Service

Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Migratory birds that may be affected by your project:

There are 23 birds on your migratory bird list. The list may include birds occurring outside this FWS office jurisdiction.

Species Name	Bird of Conservation Concern (BCC)	Seasonal Occurrence in Project Area
American bittern (<i>Botaurus lentiginosus</i>)	Yes	Breeding
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Yes	Year-round
Black Rosy-Finch (<i>Leucosticte atrata</i>)	Yes	Year-round
Brewer's Sparrow (<i>Spizella breweri</i>)	Yes	Breeding
Burrowing Owl (<i>Athene cunicularia</i>)	Yes	Breeding
Cassin's Finch (<i>Carpodacus cassinii</i>)	Yes	Year-round
Dickcissel (<i>Spiza americana</i>)	Yes	Breeding
Ferruginous hawk (<i>Buteo regalis</i>)	Yes	Year-round
Flammulated owl (<i>Otus flammeolus</i>)	Yes	Breeding
Golden eagle (<i>Aquila chrysaetos</i>)	Yes	Year-round
Lewis's Woodpecker (<i>Melanerpes lewis</i>)	Yes	Breeding
Loggerhead Shrike (<i>Lanius ludovicianus</i>)	Yes	Breeding
Long-Billed curlew (<i>Numenius americanus</i>)	Yes	Breeding
Mountain plover (<i>Charadrius montanus</i>)	Yes	Breeding
Peregrine Falcon (<i>Falco peregrinus</i>)	Yes	Breeding
Prairie Falcon (<i>Falco mexicanus</i>)	Yes	Year-round
Sage Thrasher (<i>Oreoscoptes montanus</i>)	Yes	Breeding



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Short-eared Owl (<i>Asio flammeus</i>)	Yes	Wintering
Swainson's hawk (<i>Buteo swainsoni</i>)	Yes	Breeding
Virginia's Warbler (<i>Vermivora virginiae</i>)	Yes	Breeding
Western grebe (<i>aechmophorus occidentalis</i>)	Yes	Breeding
Williamson's Sapsucker (<i>Sphyrapicus thyroideus</i>)	Yes	Breeding
Willow Flycatcher (<i>Empidonax traillii</i>)	Yes	Breeding



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Appendix C: NWI Wetlands

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of



United States Department of Interior
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Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following NWI Wetland types intersect your project area in one or more locations. To understand the NWI Classification Code, see <https://ecos.fws.gov/ipac/wetlands/decoder>. To view the National Wetlands Inventory on a map go to <http://www.fws.gov/wetlands/Data/Mapper.html>.

Wetland Types	NWI Classification Code
Freshwater Emergent Wetland	PEM1A
Freshwater Emergent Wetland	PEM1C
Freshwater Emergent Wetland	PEM1Cx
Freshwater Forested/Shrub Wetland	PFOA
Freshwater Forested/Shrub Wetland	PFOAx
Freshwater Forested/Shrub Wetland	PSSA
Freshwater Forested/Shrub Wetland	PSSAx
Freshwater Forested/Shrub Wetland	PSSC
Freshwater Forested/Shrub Wetland	PFOAh
Freshwater Pond	PABGh
Freshwater Pond	PABGx
Freshwater Pond	PUBFx
Freshwater Pond	PUBGx
Freshwater Pond	PUSA
Lake	L2ABGh



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Project name: US 85 Corridor Improvements Highlands Ranch Parkway to C-470

Riverine	R4SBC
Riverine	R4SBCx
Riverine	R2UBF
Riverine	R3UBH
Riverine	R2UBFx

