

US 6 Bridges Design Build Project

BR 0061-083
Sub Account Number 18838 (CN)

Biological Resources Report

Prepared for:
Colorado Department of Transportation
Federal Highway Administration

Prepared by:

**PARSONS
BRINCKERHOFF**



| ~~October-November~~ 2012

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List of Abbreviated Terms

AE	American Elm
As	Arsenic
<u>BGEPA</u>	<u>Bald and Golden Eagle Protection Act</u>
BRR	Biological Resources Report
CCD	City and County of Denver
CDOT	Colorado Department of Transportation
CDOW	Colorado Division of Wildlife
CDPW	Colorado Division of Parks and Wildlife
CDPHE	Colorado Department of Public Health & Environment
CRS	Colorado Revised Statute
CVCP	Colorado Vegetation Classification Project
CT	Canada Thistle
CWA	Clean Water Act
DBH	Diameter at Breast Height
EIS	Environmental Impact Statement
<u>FACWet</u>	<u>Functional Assessment of Colorado Wetlands</u>
FB	Field Bindweed
<u>FC</u>	<u>Federal Candidate Species</u>
FHU	Felsburg Holt & Ullevig
FHWA	Federal Highway Administration
<u>GIS</u>	<u>Geographic Information System</u>
<u>GPS</u>	<u>Global Positioning System</u>
I-25	Interstate Highway 25
JG	Jointed Goatgrass
MBTA	Migratory Bird Treaty Act
NDIS	Natural Diversity Information Source
NEPA	National Environmental Policy Act
<u>OHWM</u>	<u>Ordinary High Water Mark</u>
PB	Parsons Brinckerhoff, Inc.
<u>PBA</u>	<u>Programmatic Biological Assessment</u>
PC	Plains Cottonwood
PV	Puncture Vine
ROD	Record of Decision
<u>ROD2</u>	<u>Record of Decision 2</u>
ROW	Right-of-Way
<u>RTP</u>	<u>Regional Transportation Plan</u>
<u>SB</u>	<u>southbound</u>
SB 40	Colorado Senate Bill 40
<u>SC</u>	<u>State Species of Special Concern</u>
<u>SP-WRAP</u>	<u>South Platte Water Related Activities Program</u>
ST	Scotch Thistle
T & E	Threatened & Endangered
TMDL	Total Maximum Daily Load
US 6	US Highway 6
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency

USFWS US Department of Interior Fish and Wildlife Service
WB westbound
WUS Waters of the US

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1. PROJECT BACKGROUND

The Project includes modifications to the roadway, interchanges, and bridges along 6th Avenue (US 6) between Sheridan Boulevard and the BNSF Railway in Denver, Colorado. The Colorado Department of Transportation (CDOT) is preparing a Reevaluation and Record of Decision (ROD2) to document the impacts of and mitigation for the Project.

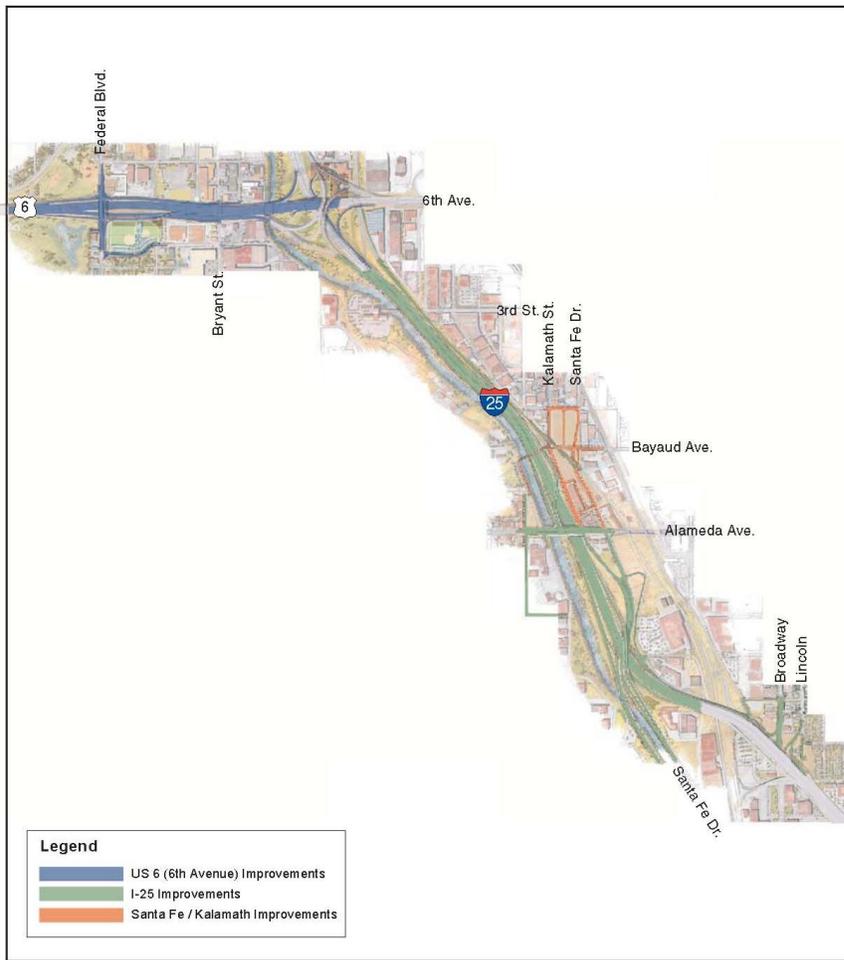
1.1 The Valley Highway Project

The Federal Highway Administration (FHWA) and CDOT prepared a Final Environmental Impact Statement (FEIS) in 2006 and a ROD in 2007 for the Interstate 25 (I-25) Valley Highway Project, located in Denver, Colorado. The Valley Highway Project includes the reconstruction of I-25 and reconfiguration of interchanges from Logan Street to United States Highway (US) 6, US 6 from I-25 to Federal Boulevard, and the crossing of Santa Fe Drive and Kalamath Street at the Consolidated Main Line railroad. The Preferred Alternative, as described in the FEIS, includes the following elements:

- I-25 Mainline: Widening of I-25 to provide a consistent section with four through lanes plus auxiliary lanes in each direction throughout the project area
- I-25/Broadway: Tight diamond interchange
- I-25/Santa Fe Drive: Single point urban interchange with a flyover ramp for northbound Santa Fe Drive to northbound I-25
- I-25/Alameda/Santa Fe/Kalamath: Offset partial urban interchange at I-25 and Alameda Avenue; Santa Fe Drive and Kalamath Street grade separated under the railroad close to their current alignments
- US 6: Ramp improvements at the I-25/US 6 interchange; closure of the Bryant Street interchange; diamond interchange at US 6/Federal Boulevard with slip ramps to Bryant Street and a braided ramp from Federal Boulevard to eastbound US 6; reconstruction of US 6 with collector-distributor roads/auxiliary lanes throughout the project area

The Preferred Alternative of the Valley Highway Project is shown in Figure 1.

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Figure 1: I-25 Valley Highway Project Preferred Alternative

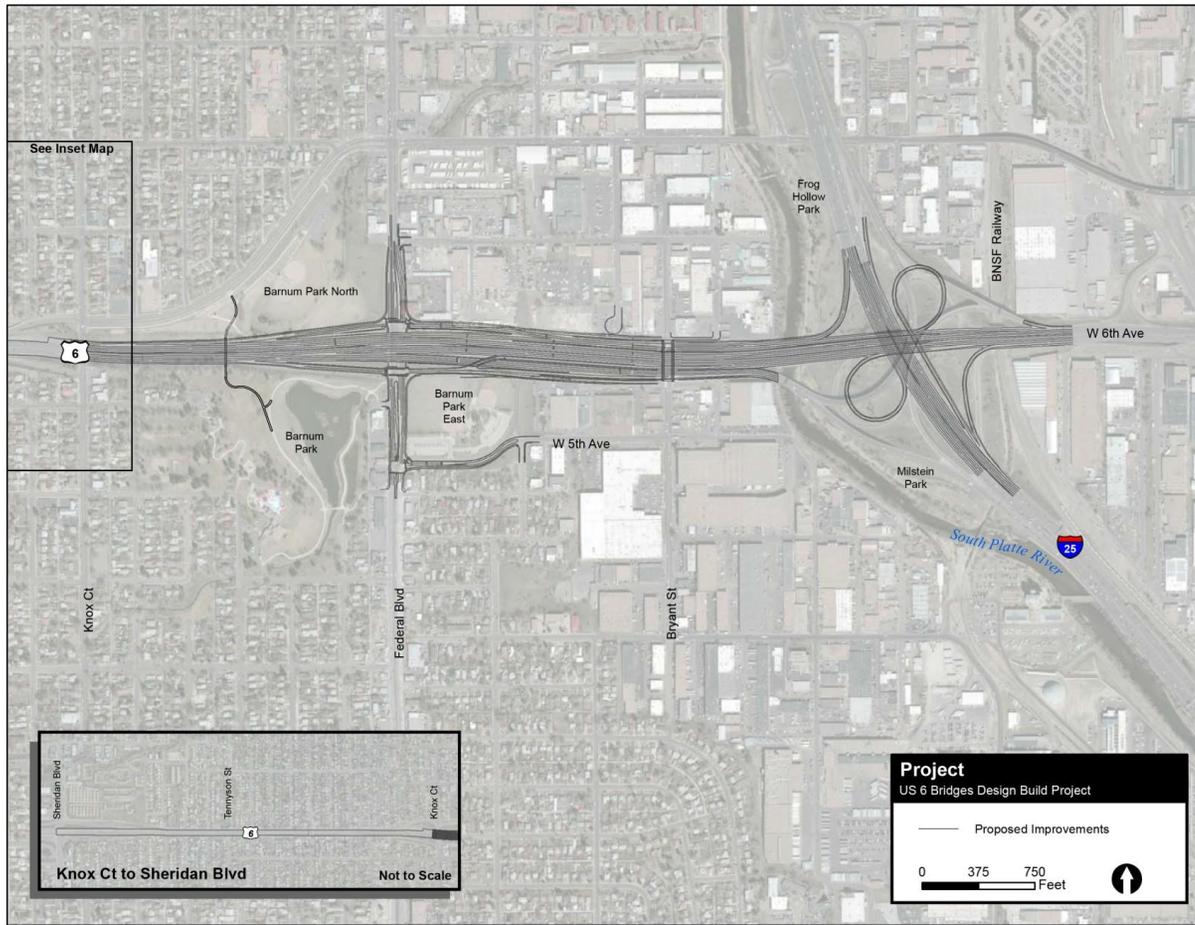
1.2 US 6 Bridges Design Build Project

The Project includes the reconstruction of US 6, reconfiguration of interchanges from Federal Boulevard to I-25, and replacement of the US 6 bridges from Federal Boulevard to the bridge over the BNSF Railway. More specifically, the Project includes the following elements:

- The replacement of five bridges along US 6: Federal Boulevard, Bryant Street, South Platte River, I-25, and BNSF Railway. Three of these bridges are in poor condition and the other two are functionally obsolete. The project would also add a tunnel immediately east of I-25 under US 6 to separate traffic on northbound I-25 from traffic exiting the interstate to travel east and west on US 6.
- Ramp improvements at the I-25/US 6 interchange, closure of the westbound (WB) US 6 to Bryant Street ramp, a diamond interchange at US 6/Federal Boulevard with slip ramps to Bryant Street, and a braided ramp from Federal Boulevard to eastbound (EB) US 6.
- Reconstruction of US 6 with collector-distributor roads/auxiliary lanes from Federal Boulevard to the BNSF Railway bridge structure
- Conversion of 5th Avenue to two-way traffic from Federal Boulevard to Decatur Street
- Widening of Federal Boulevard, from five to six lanes, from 5th to 7th Avenues to accommodate current and future improvements
- Pavement resurfacing of US 6 from Knox Boulevard to Sheridan Boulevard
- In-kind replacement of impacted facilities for Barnum East Park
- A bicycle/pedestrian bridge structure over US 6, connecting Barnum North Park and Barnum Park (also known as Barnum Park South, and herein referred to as Barnum Park South)
- Upgrading portions of the South Platte River Trail to current standards

Figure 2 shows the Project.

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Figure 2: Project

1.3 Relationship of the Valley Highway Project and the US 6 Bridges Design Build Project

At the time of the FEIS, funding had not been identified for the entire Preferred Alternative. Although budget placeholders were included in the 2030 Regional Transportation Plan (RTP), these budgets fell short of the estimated cost of the Preferred Alternative. Therefore, FHWA and CDOT planned for a phased implementation of the Preferred Alternative. These six phases are outlined in Chapter 7 of the FEIS. The ROD2 for the Project will reevaluate part of Phase 1 (the part including the US 6/Federal Boulevard interchange) as presented in the 2007 ROD, and provide a decision for Phase 5 of the Valley Highway Project. The ROD2 for the Project will also address six new, minor project elements, which were not part of the FEIS. Due to the minor environmental significance and nature of these additional components, they are included in the ROD2 and will not affect the independent utility, logical termini, or Preferred Alternative of the Valley Highway Project.

1.3.1 Phasing of the FEIS Preferred Alternative

The Project includes elements of two of the six construction phases—Phase 1 and Phase 5—from the Valley Highway Project. A decision on construction Phase 1 of the Valley Highway Project, which included the US 6/Federal Boulevard bridge and ramps, excluding the braided ramp, was made in the 2007 ROD. Figure 3 shows the phases of the Valley Highway Project’s Preferred Alternative and Figure 4 shows the Project Elements and how they relate to the FEIS phasing.

1.3.2 Additional Project Elements in the Project

At this time, the Project includes six additional elements that were not included in the FEIS or 2007 ROD:

- Reconstruction of the southbound (SB) I-25 to EB US 6 ramp;
- A bicycle/pedestrian bridge structure over US 6, connecting Barnum North and Barnum South parks;
- Replacement of the US 6 bridge over Bryant Street;
- Replacement of the US 6 bridge over I-25;
- Replacement of the US 6 bridge over the BNSF Railway; and
- Pavement resurfacing of US 6 between Sheridan Boulevard and Knox Court

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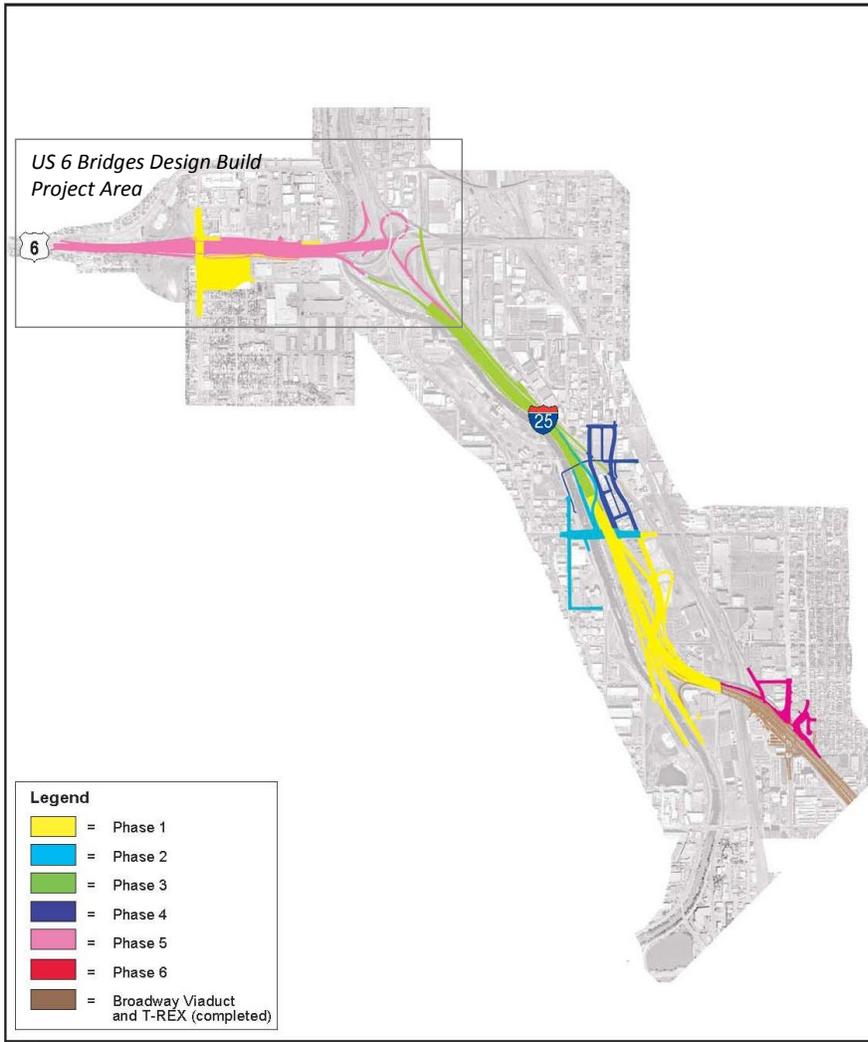


Figure 3: FEIS Phased Implementation of the Preferred Alternative

(source: I-25 Valley Highway FEIS)

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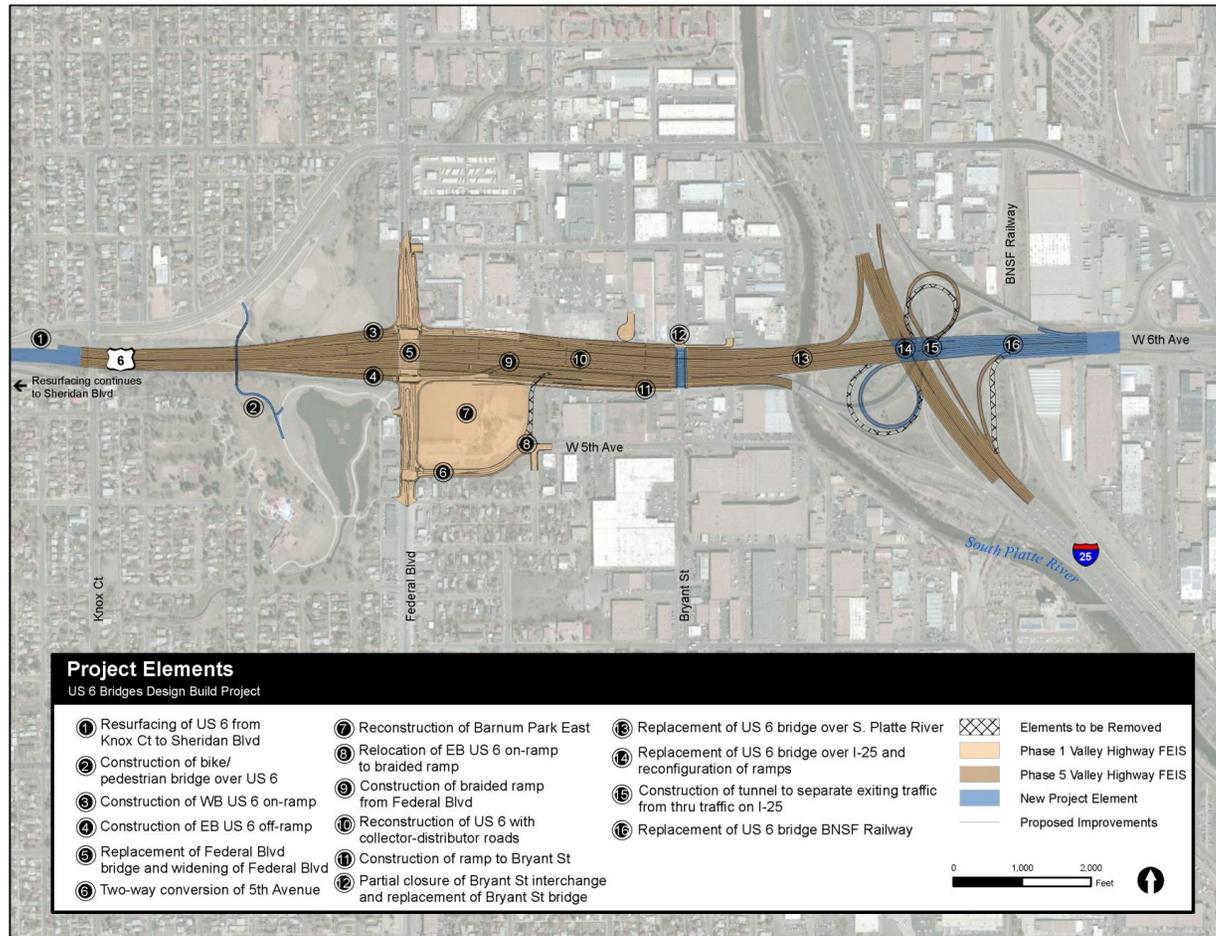


Figure 4: Project Elements

1. PROJECT BACKGROUND

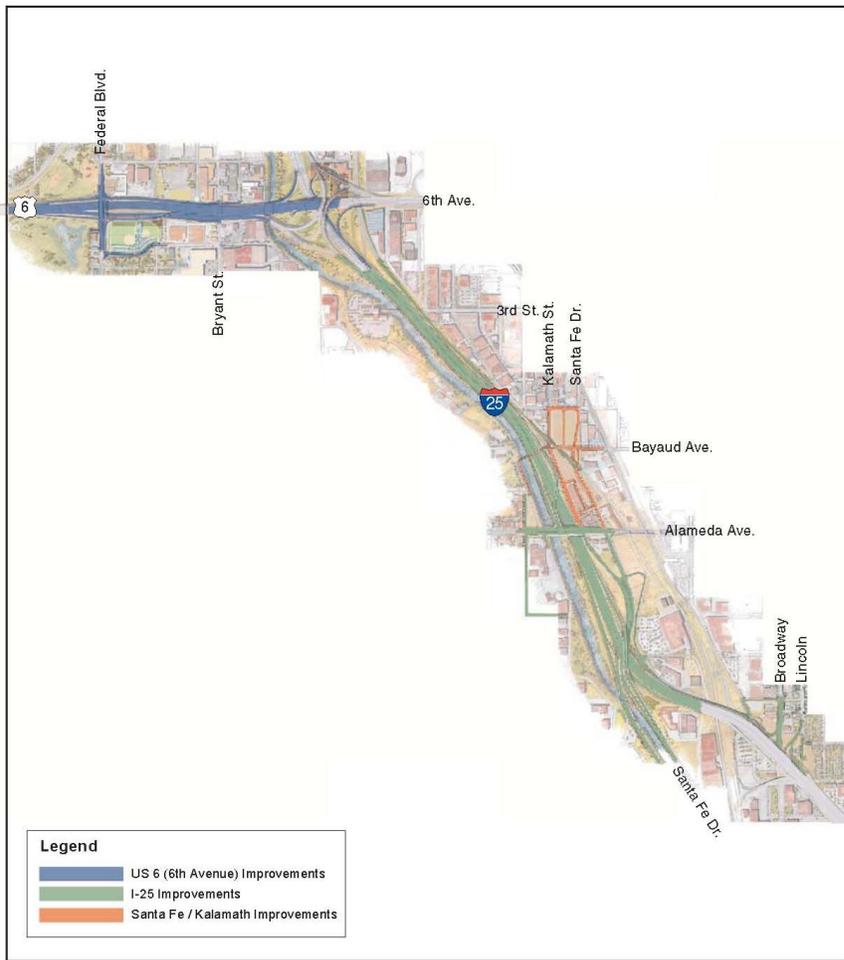
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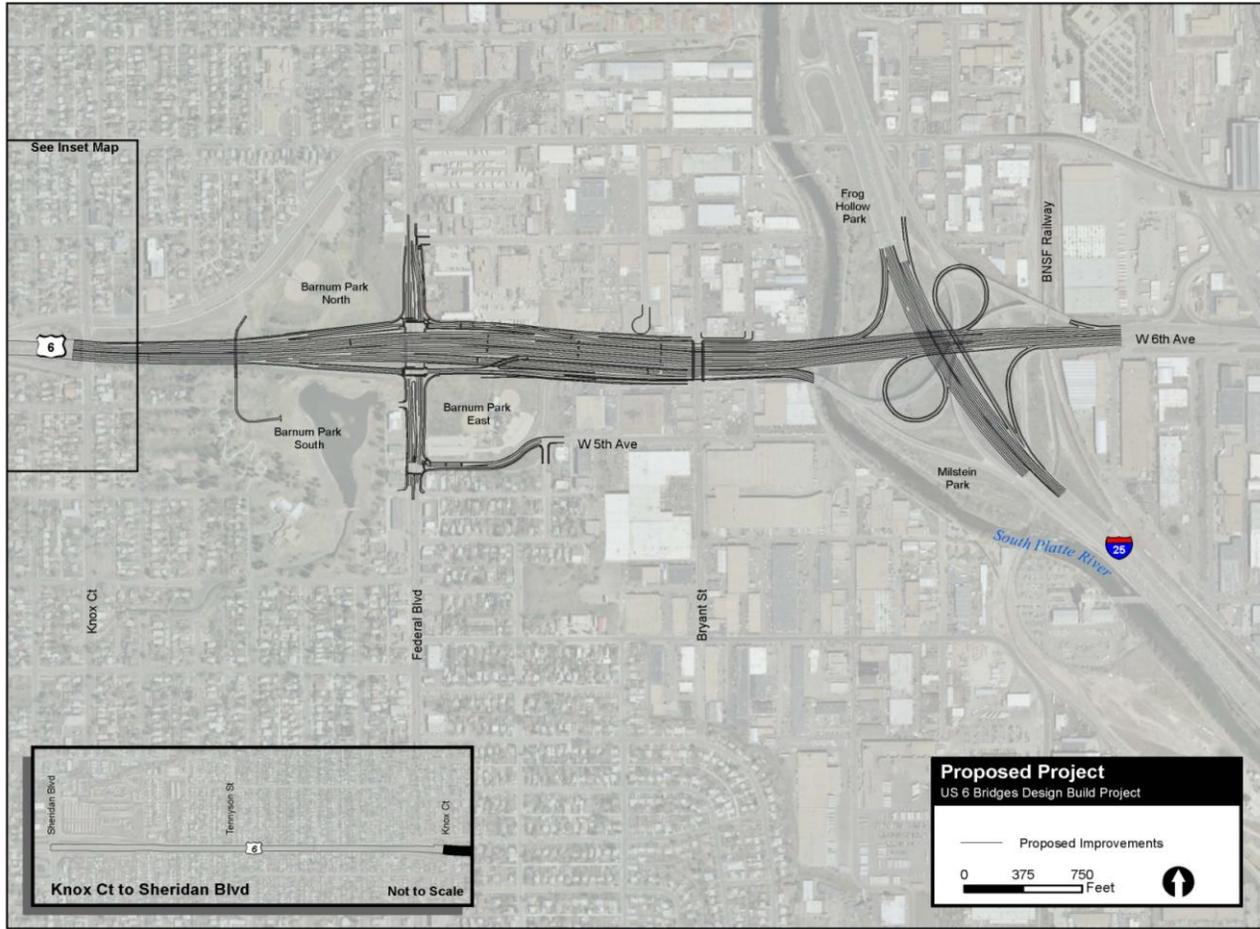
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Figure 2: Proposed Project

1.3—Relationship of the Valley Highway Project and the US 6 Bridges Design Build Project

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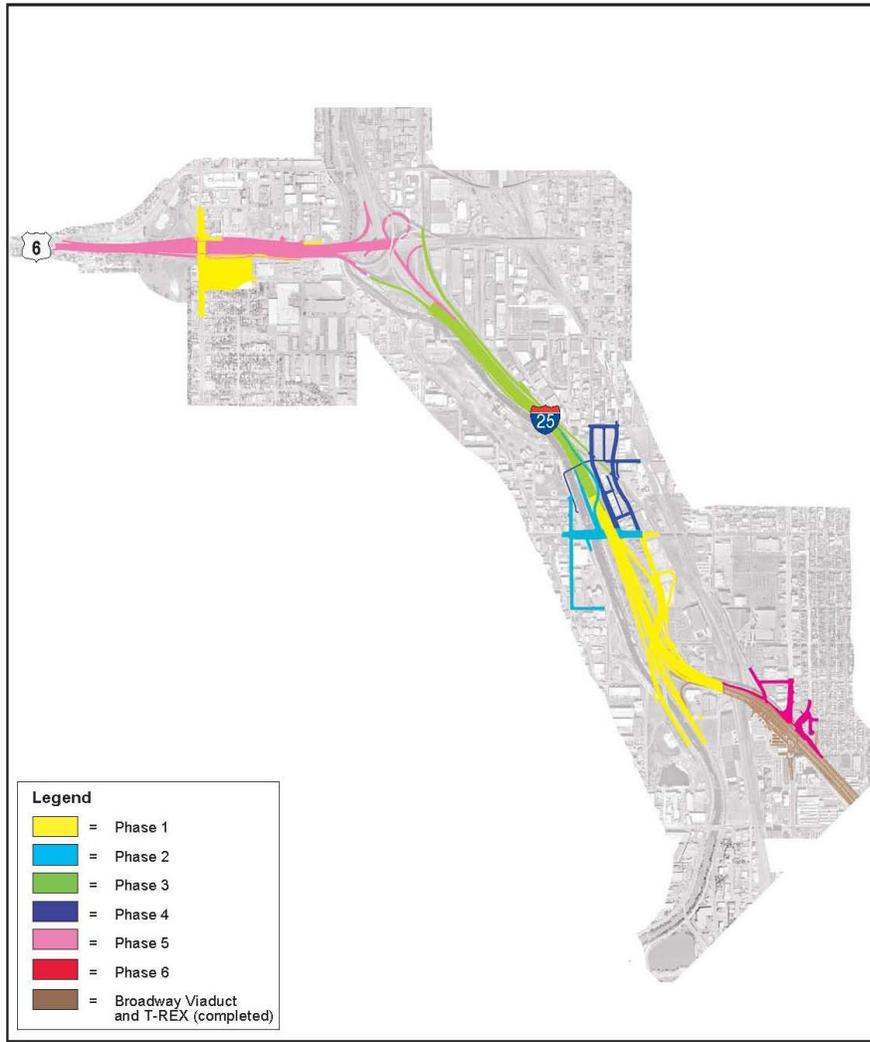


Figure 3: Valley Highway EIS Phased Implementation of the Preferred Alternative

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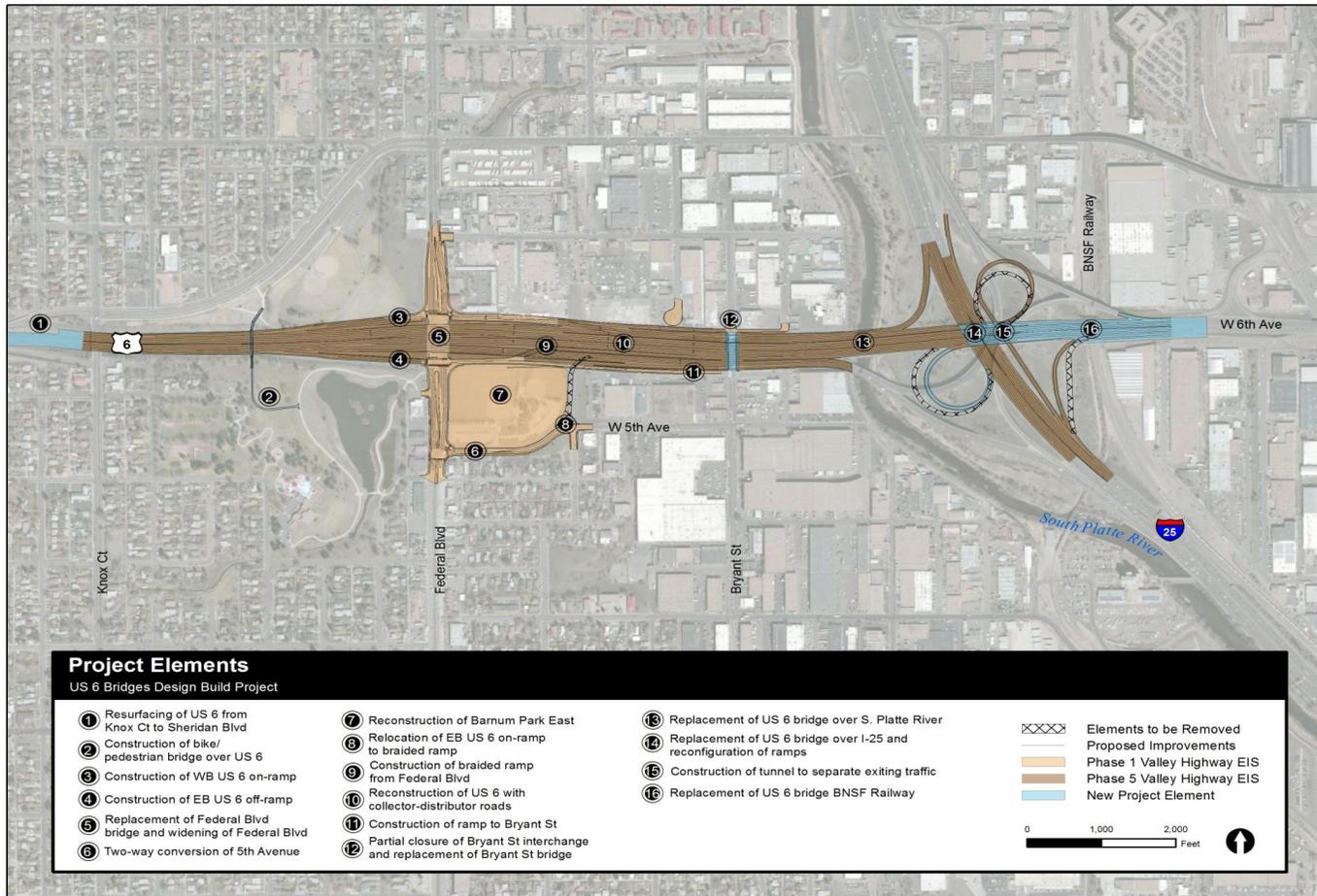


Figure 4: Proposed Project Elements

2. EXISTING CONDITIONS AND PROJECT IMPACTS

The National Environmental Policy Act (NEPA) of 1969 established a mandate for federal agencies to consider the potential environmental consequences of their proposed actions, to document the analysis, and to make the information available to the public. In accordance with NEPA and related regulations, CDOT has prepared this Biological Resources Report (BRR) for the ~~Proposed Project~~Project. The BRR Project Area is limited to the area defined in the Project Area. This area includes existing CDOT right-of-way (ROW) adjacent to the Project Area and small slivers of ROW to be acquired as part of ~~this Proposed~~the Project at the US 6 and Federal Boulevard interchange. This document evaluates the ecological conditions of the site and the anticipated impacts. The resources discussed in this report include: vegetation, noxious weeds, wetlands, wildlife, migratory birds, and Senate Bill 40 (SB 40) resources.

The information presented in this report is based upon surveys conducted by Felsburg Holt & Ullevig (FHU), in support of the Biological Resources Report (BRR) for the US 6 Bridge Reconstruction: Bryant Street, S. Platte River and I-25 Project. Surveys by Wilson & Company supported a 2011 Biological Review memorandum, summarizing the natural environment in the area of US 6 over the BNSF Railway bridge. Additionally, FHU composed the Vegetation and Wildlife Sections for the Valley Highway Project as provided in the 2006 Environmental Impact Statement (EIS) and 2007 Record of Decision (ROD). The purposes of these biological reviews were in support of US 6 Bridge Project, which is part of the overall Valley Highway Project. This document addresses the biological resources found within the Project Area (Figure 5).

Due to the initial scope of the Project, site visits were conducted by three different firms for the Project Area. Therefore, the information presented in this report is based upon field visits in October 2011 by Alex Pulley, Kevin Maddoux, and Keith Hidalgo (Environmental Scientists), from Felsburg, Holt and Ullevig (FHU) and Tom Roberts (Landscape Architect) from Parsons Brinckerhoff, Inc. (PB). In September 2011, Robert Belford (Biologist) of Wilson & Company, conducted a site visit of the vicinity of the BNSF bridge, which falls within the overall Project Area. A memo summarizing any resources at this location was prepared by Wilson & Company and referenced throughout this Biological Resources Technical Report for the overall US 6 Design Build Project (**Appendix 3**). Additional surveys were conducted in May 2012 by Keith Hidalgo and Jake Lloyd (Landscape Architect) with FHU to expand the survey area. Hillary Seminick (Environmental Scientist, PB) conducted an additional tree survey to cover the area to the east of the BNSF bridge that was not provided by Wilson & Company. The majority of the species observed are plant species easily identified late in the growing season and therefore should not be considered comprehensive.

The Project Area is located in the City and County of Denver (CCD), Colorado, at approximately 5,210 feet above sea level. The Project Area is in the flat to rolling plains area of the High Plains Ecoregion. This ecoregion (US Environmental Protection Agency [USEPA] 2003) is described as:

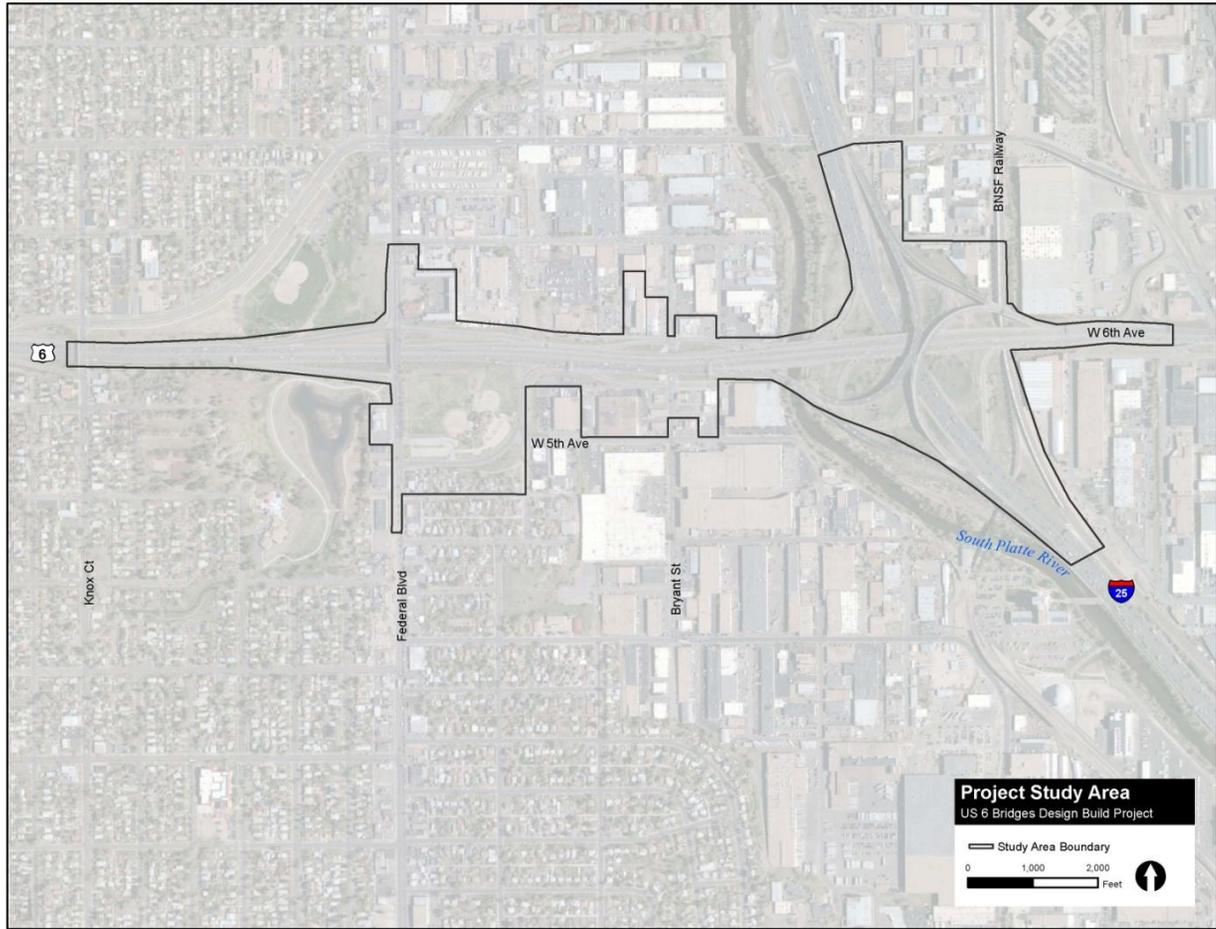


Figure 55: Project Study Area

Higher and drier than the Central Great Plains to the east, and in contrast to the irregular, mostly grassland or grazing land of the Northwestern Great Plains, much of the Western High Plains comprises smooth to slightly irregular plains having a high percentage of cropland. Grama-buffalo grass is the potential natural vegetation in this region as compared to mostly wheatgrass-needlegrass to the north, Trans-Pecos shrub savanna to the south, and taller grasses to the east. The northern boundary of this ecological region is also the approximate northern limit of winter wheat and sorghum and the southern limit of spring wheat. (USEPA 2003)

Generally, the Project Area lies within a high density urban area that does not have the natural characteristics described above. Much of the area immediately surrounding the Project Area is occupied by light industrial uses such as railroad tracks, industrial buildings, and commercial buildings. All of these locations contain extensive parking lots. There are other immediately adjacent areas that are part of the CCD's parks and open space system. The ~~Proposed Project~~ is associated with a major highway interchange in the middle of Denver, Colorado. The South Platte River flows south to north through the ~~Proposed Project~~ and passes underneath one of the project US 6 bridges. The natural vegetation in the Project Area consists primarily of native and non-native grasses, weedy forbs, shrubs, and trees on either side of the South Platte River.

The Project Area lies within the South Platte River-Little Dry Creek to Lakewood Gulch watershed, part of the South Platte River Basin, in the 6th level Hydrologic Unit Code (101900020908). The South Platte River (COSPLUS14) currently is on the Colorado Department of Public Health and Environment's (CDPHE) 303(d) list and has high priority stream impairment for arsenic (As) (CDPHE 2010). If a stream segment is on the 303(d) list, the segment requires the development of a total maximum daily load (TMDL). TMDL is a term that represents the total amount of a pollutant that a water body can assimilate and still meet standards. This segment of the South Platte River has two TMDLs: one for Escherichia coli (E. coli) and one for nitrate. Currently, a TMDL has not been developed for Arsenic.

2.1 Vegetation

2.1.1 Colorado Vegetation Classification Project (CVCP)

Based on a review of the Natural Diversity Information Source (NDIS) Colorado Vegetation Classification Project (CVCP), seven land cover types are identified in the Project Area and are listed in Table 1, and briefly discussed below. Photographs of the Project Area can be found in **Appendix 1**.

Table 1. Land Cover Types in the Project Area

Land Cover Type ¹	Area (acres)	Percent of Project Area
Barren Land	2.75	2.20%
Commercial	75.01	59.95%
Cottonwood	0.77	.63%
Grass Dominated	11.00	9.01%

Land Cover Type ¹	Area (acres)	Percent of Project Area
Grass/Forb Mix	2.26	1.81%
Residential	22.39	18.34%
Urban / Built Up	1.48	1.21%
Water	6.44	5.27%
Total	122.08	100.00%

¹ All cover types correspond to those in the CVCP (NDIS 2010).

The majority of vegetation present in the Project Area is non-native and/or landscaped species, except for the banks of the South Platte River which contain a mixture of native and non-native vegetation. Generally, the Commercial, Residential, and Urban/Built Up cover types primarily consist of various ornamental woody and herbaceous species including Russian olive (*Elaeagnus angustifolia*), Siberian elm (*Ulmus pumila*), smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), and common dandelion (*Taraxacum officinale*) plants. This vegetation is relatively low quality because of the lack of maintenance or irrigation.

Cottonwood cover type is dominated by various cottonwood species such as narrowleaf cottonwood (*Populus angustifolia*) and plains cottonwood (*Populus deltoides*).

The Grass Dominated Rangeland cover type characterization is identified as an area dominated by annual and perennial grasses. Examples include Kentucky bluegrass, smooth brome, western wheatgrass (*Pascopyrum smithii*), and needle and thread grass (*Hesperostipa comate*).

The Grass/Forb Rangeland cover type is characterized by perennial and annual grasslands. Low elevation (< 6,000') species include Blue Grama (*Bouteloua gracilis*), Needle & Thread, Sand Drop Seed (*Sporobolus cryptandrus*), and brome species (*Bromus spp.*).

The Water cover type characterizes lakes, streams and rivers. The South Platte River and Barnum Park Lake primarily make up this cover type.

The field visits provided an opportunity to verify the CVCP data. Using the CVCP's vegetation categories, FHU identified that the Commercial and Water categories are the most accurate cover types within the Project Area.

2.1.2 Existing Vegetation

Most areas of the ROW within the Project Area contain grasses and weedy forbs with many trees lining the banks of the South Platte River. Most of the grasses are non-native species, the majority of which is downy brome (*Bromus tectorum*) along with other grasses and weedy forbs, mainly field bindweed (*Convolvulus arvensis*) (**Appendix 2**). The habitat adjacent to the South Platte River is relatively moderate when compared to a pristine riparian habitat, due to the presence of sandbar willow (*Salix exigua*), Emory's sedge (*Carex emoryi*), and other sedges (*Carex spp.*). In all other areas the habitat is degraded and dominated by non-native species.

This river corridor has been heavily developed and modified from its natural setting and has limited ecological value when compared to more pristine habitats with little to no man-made development. The South Platte River has been channelized through the Project Area due to development within the floodplain.

2.1.3 Senate Bill 40 Resources

Senate Bill 40 (SB 40) is statutory and requires agents of the state to obtain a certification from the Colorado Department of Natural Resources – Division and Parks and Wildlife (CDPW) when a project meets one or more of 10 criteria including impacts to “...any stream or its bank or tributaries...” (33-5-101-107, CRS 1973 as amended; CDOW & CDOT 2003). Because of the presence of the South Platte River in the Project Area, a SB 40 Wildlife Certification is needed for this ~~Proposed Project~~the Project for impacts to SB 40 trees within the riparian area of the South Platte River.

SB 40 shrub areas were limited to those areas that were previously delineated as wetlands in the Valley Highway EIS. No new SB 40 shrub areas were delineated. Where SB 40 shrubs exist (sandbar willow in most areas along the South Platte River) permitting under Section 404 of the Clean Water Act takes precedence so as not to double count SB 40 shrubs where mitigation is required by CDOT. A formal application for SB 40 Wildlife Certification shall be made by CDOT 60 days prior to construction activities.

The SB 40 tree species identified during the field visits are shown in Figure 6 and in **Appendix 2**. This is based on the proximity to the South Platte River and the size of the tree (SB 40 trees are at least 2 inches diameter-breast-height [dbh]).

Of these trees, a total of 169 SB 40 trees were identified within the Project Area. SB 40 trees which are removed as a result of this ~~Proposed Project~~the Project will be replaced at a 1:1 ratio within the South Platte riparian corridor.



Figure 66: Senate Bill 40 Trees

2.1.4 Upland Tree Resources

CDOT Region 6 mitigates for the removal of both native and non-native trees greater than four inches DBH. Trees greater or equal to this threshold were inventoried and data was collected with sub-meter accuracy Trimble GeoHX GPS units within the Project Area. A total of 750 trees were identified within the Project Area. As seen in the site photos, these trees include groups of American elm (*Ulmus americana*), Siberian elm, plains cottonwood (*Populus deltoides*), box elder (*Acer negundo*), and Ailanthus tree of heaven (*Ailanthus altissima*) trees. There are numerous trees located within the roadway ROW that will be affected by this project. Based on current design and grading plans, the ~~Proposed Project~~Project will remove 169 upland trees. These trees, shown in Figure 7, will be replaced with native species at a 1:1 ratio in accordance to CDOT Region 6 policy.

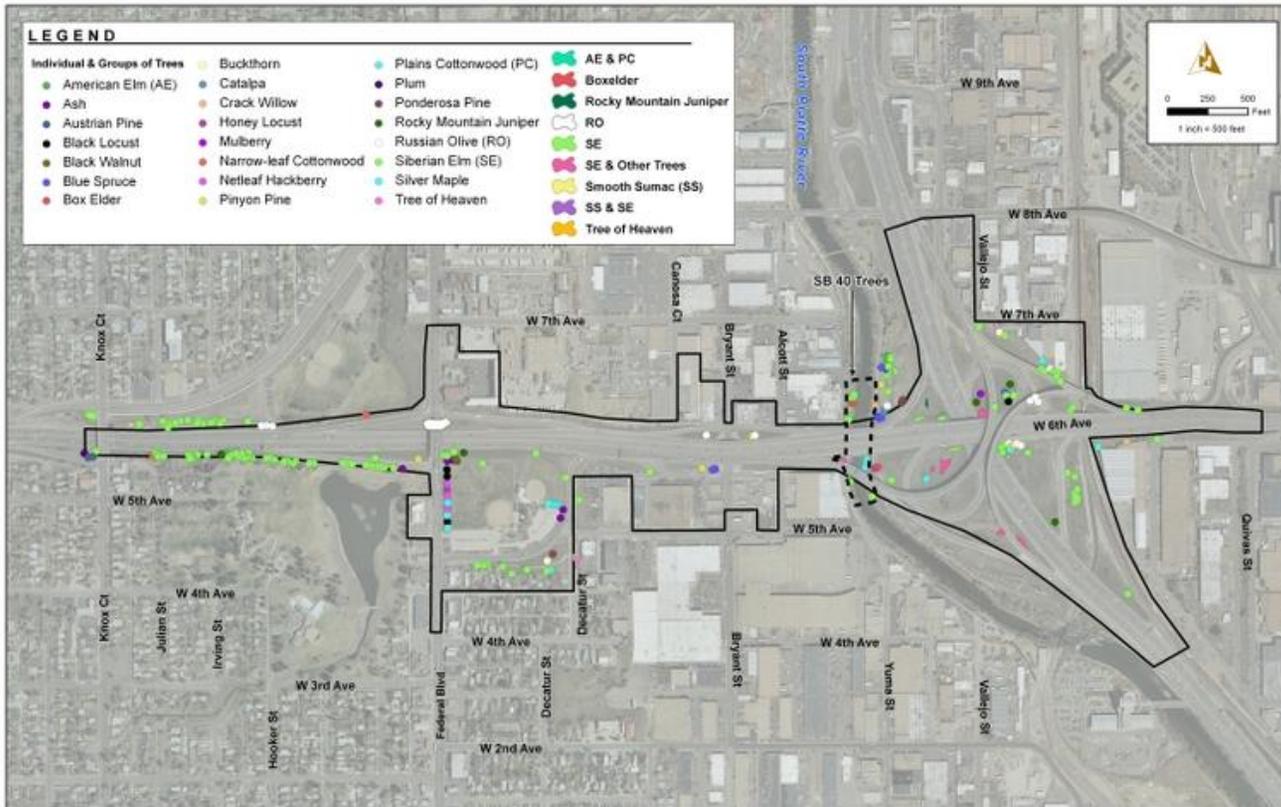


Figure 7: Upland Tree Resources

2.1.5 Noxious Weeds

The Colorado Noxious Weed Act requires the control of the 71 plant species designated as noxious weeds. According to the Colorado Department of Agriculture, noxious weeds are plants that reduce agricultural productivity, lower real estate values, endanger human health and well-being, and damage scenic values (CDA 2010). The state has divided the 71 noxious weeds into three groups: Lists A, B, and C.

List A includes 18 plant species that have very limited to no distribution in Colorado and are designated for immediate eradication. List B includes 39 species that are locally common but are managed to stop continued spreading. List C includes 14 species that are generally widespread and are not managed to stop spreading but to provide additional education research, and biological control.

An Integrated Noxious Weed Management Program will be included with the construction Contract and is intended to comply with the following regulations and guidelines:

- Colorado Department of Agriculture, Plant Industry Division, Colorado Noxious Weed Act, 35-5.5-101 119, Colorado Revised Statutes (CRS) (2003)
- Federal Executive Order 13112 Invasive Species
- Federal Highway Administration (FHWA) Guidance on Invasive Species (FHWA 1999)
- Template and Guidance for the Preparation of an Integrated Noxious Weed Management Plan for CDOT Region 6 Planning and Environment (CDOT 2006b)
- City and County of Denver Noxious Weed Management Plan (CCD 2011)
- Colorado Department of Agriculture, Plant Industry Division, Colorado Weed Free Forage Crop Certification Act, Title 35, Article 27.5 (CRS 2011)

This section includes a noxious weed inventory and description of preventative and control measures that will be implemented during the construction of the project. The noxious weeds considered in this management plan include those managed by CCD and the State of Colorado.

A total of eight plant species designated as noxious weeds by the State of Colorado were found in the Project Area, including five "List B" species and three "List C" species. No "List A" species were found. All of the noxious weeds found in the Project Area are listed in Table 2 along with their listing status, including the the Colorado Department of Agriculture Division of Plant Industry list (CDA 2003), CCD list (CCD 2011), and the CDOT Noxious Weed List (CDOT 2006).

Noxious weeds were surveyed for in October 2011 and in May 2012 by FHU staff using a Trimble® GeoXH™ global positioning system (GPS) with ESRI® ArcPad™ version 10.0 mobile geographic information system (GIS). The Project Area contained scattered populations of noxious weeds and in some areas, individual plants. Staff delineated noxious weed populations greater than 5 percent ground cover throughout the Project Area; these mapped areas can be found in Figure 8. The period of the survey and maintenance activities, such as mowing, within the Project Area ROW created occasional challenges in vegetation identification.

All eight of these species are found throughout the infields and in open, native seeding areas throughout the interchange. Photographs 7, 8, and 12 included in **Appendix 1** illustrate the typical site conditions in CDOT's ROW at the time of the field review.

According to the 2011 BNSF Biological Review Memo provided by Wilson & Company (**Appendix 3**), no noxious weed species were found around in the vicinity of the BNSF Bridge.

Table 2. Noxious Weeds Present in the Project Area

Common Name	Scientific Name	CDA: List A, B, or C	CCD	CDOT	Density
Canada Thistle	<i>Cersium arvense</i>	B	X	X	Scattered
Jointed Goatgrass	<i>Aegilops cylindrical</i>	B		X	Uncommon
Leafy Spurge	<i>Euphorbia esula</i>	B	X	X	Common
Russian Olive	<i>Elaeagnus angustifolia</i>	B		X	Scattered
Scotch Thistle	<i>Onopordum acanthium</i>	B	X	X	Uncommon
Downy Brome	<i>Bromus tectorum</i>	C			Common
Field Bindweed	<i>Convolvulus arvensis</i>	C			Common
Puncture Vine	<i>Tribulus terrestris</i>	C			Scattered

Source: CDA 2010

In order to effectively manage noxious weeds, management actions must be implemented in accordance with specific goals and priorities. The goal of this plan is to maintain and improve the health of the ecosystem in the Project Area by avoiding additional spreading of noxious weeds as a result of project construction.

Noxious weed management objectives are intended to support the overall management goal of maintaining the health of the ecosystem. There are two main management objectives and they include:

- Preventing the establishment of new noxious weed populations in the Project Area as a result of project construction.
- Preventing the continued spreading of noxious weeds in the Project Area as a result of project construction.

These objectives will generally be met by implementing the following actions at the project site:

- Follow CDOT Standard Specifications for Road and Bridge Construction controls during the construction of the **Proposed Project** (CDOT 2011), including 217 Herbicide Treatment.
- Pre-treat all noxious weed populations in areas where topsoil salvage is planned with proper herbicides based on a Project Special Specification 217.

- Minimize ground disturbance and promptly stabilize any exposed soil to prevent weed establishment.
- Properly revegetate all disturbed areas with the native seeding plan recommended by the CDOT Region 6 Landscape Architect.
- Implementation of the Integrated Noxious Weed Management Plan found in **Appendix 5**.

Revegetated areas will be monitored for success. If treatments for future weed infestations are required, coordination between the contractor and the CDOT Region 6 Environmental Staff must occur.

2.2 Wetland Resources

In 1977, the US Congress passed the Clean Water Act (CWA) to protect the quality of waters of the US, including adjacent wetlands. Section 404 of the CWA defines Waters of the US (WUS) as all traditional navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. The US Army Corps of Engineers (USACE) Regulatory Program administers and the USEPA enforces Section 404 of the CWA.

The definition of WUS under USACE jurisdiction does not include wetlands that lack a surface connection to, and therefore are isolated from, regulated waters. However, in projects with federal funding or oversight, a second federal requirement, Executive Order 11990 Protection of Wetlands, directs the lead federal agencies, in this instance FHWA, to protect isolated wetlands by avoiding direct or indirect support of construction in wetlands when a practicable alternative is available.

Site photographs included in **Appendix 1** illustrate field conditions in October 2011 and May 2012. A wetland delineation was completed in support of the EIS (CDOT 2006a). The wetland delineation was completed by ERO Resources in March 2004 (ERO 2004). Wetlands identified in 2004 were documented using Wetland Determination Forms from the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987). Wetlands identified within the Project Area during the 2004 delineation can be found in Figure 4.11-1 of 4.11.1 of the ~~VHEIS/EIS~~. Because the time between the original delineation and the current effort has been over seven years, an update to the delineation was deemed appropriate to ensure that no changes have occurred and to follow the latest Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (USACE 2010).

The approach taken for ~~this Proposed~~the Project was to verify that the wetland characteristics described in the 2004 delineation are still applicable and to adjust or confirm the previously delineated wetland boundaries. FHU performed a field verification of the delineated wetlands in October 2011 (**Appendix 4**) and the wetland boundaries were either adjusted or verified in the field using a Trimble® GeoXH™ global positioning system (GPS), which has sub-meter accuracy, with ESRI® ArcPad™ version 10.0 mobile geographic information system (GIS) and impacts were analyzed in the office with ESRI® ArcMap™ GIS v.9.3. If additional wetlands that were not previously identified in the 2004 delineation were present, the boundaries were collected using the Trimble® GeoXH™ GPS (sub-meter accuracy).

The wetland characteristics and boundaries described in the 2004 delineation report are generally consistent with the current conditions. No adjustments to the previous 2004 wetland boundaries along the banks of the South Platte River were made in 2011. A new wetland was identified in the Project Area in 2011.

The newly deposited soils in areas of the South Platte River are still too young to show hydric soil indicators. Figure 9 and **Figure 10** show the wetlands identified in and adjacent to the Project Area in the 2004 delineation and one new wetland identified in the October 2011 wetland delineation. A Great Plains Regional Supplement Wetland Determination Form was completed for this wetland, identified as NE-1. This new wetland, which was previously identified in the 2004 delineation, was identified on the

northeast side of the US 6 bridge over the South Platte River. The wetland area is a fringe wetland (about 4 feet wide or less) (**Appendix 1, Photo 6**) that is found on a lower bank of the river where sediment has deposited in the last seven years. Refer to the *US 6 Bridges Design Build Project Wetland Delineation Report* (FHU 2012) for additional information on characteristics of wetlands in the Project Area, wetland determination forms, and the 2004 delineation (attached as **Appendix** in that report). No other wetlands were identified.

The South Platte River is considered a WUS and is protected under Section 404 of the Clean Water Act. Any impacts to the South Platte River below the Ordinary High Water Mark (OHWM) require mitigation as shown on Figure 10. The WUS and OHWM boundary for the South Platte River depicted in Figure 10 are the same.

According to the 2011 BNSF Biological Review Memo provided by Wilson & Company (**Appendix 4**), no wetlands, waterways or riparian vegetation communities exist within this BNSF bridge area of the project. A concrete-lined drainage ditch with a few scattered wetland plants was present at the time of the field review just outside the Project Area. This concrete-lined drainage ditch lacked sufficient hydric soils and a surface connection to a WUS; therefore would not be considered either a jurisdictional or non-jurisdictional wetland.

2.2.1 Wetland Impacts

The ~~Proposed Project~~ Project will require a Nationwide CWA Section 404 Permit for channel impacts below the OHWM of the South Platte River and impacts to 0.002 acres (100 square feet) of wetlands for the replacement of the US 6 bridge over the South Platte River and the on ramp from SB I-25 to EB US 6. Although certain wetlands may not fall under USACE jurisdiction and therefore are not afforded protection under the Clean Water Act and Executive Order 11990, CDOT policy requires that impacts to all wetlands be avoided and minimized to the greatest possible extent. Therefore, unavoidable impacts to all wetlands will be mitigated under this project. CDOT will seek approval from the USACE to utilize pre-purchased mitigation bank credits for any impacts to wetlands. CDOT will mitigate for the permanently impacted wetland areas (0.002 acres/100 square feet). GPS files from both the 2004 and 2011 wetland delineation report, including the OHWM and WUS boundaries will be provided to the contractor and CDOT to assess impacts below the OHWM of the South Platte River and to wetlands within the Project Area.

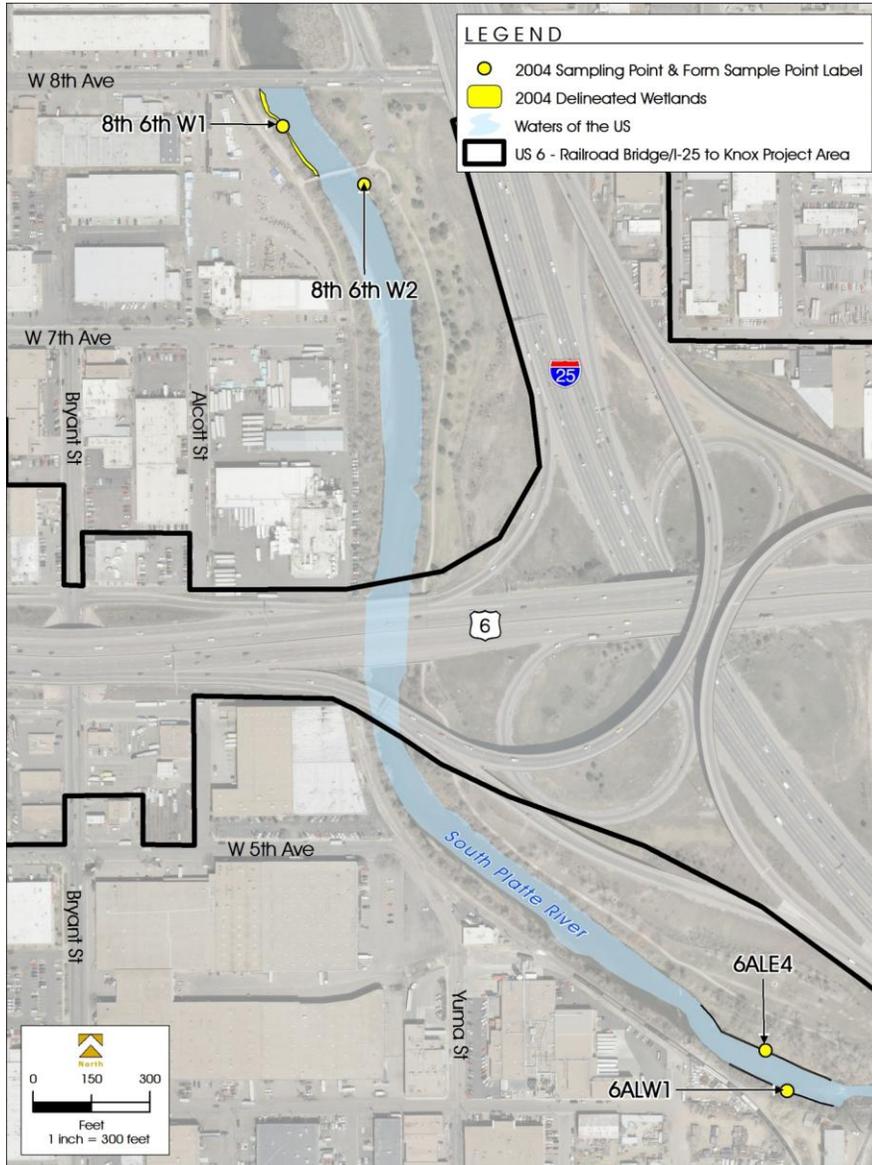


Figure 99: 2004 Delineated Wetlands near the Project Area

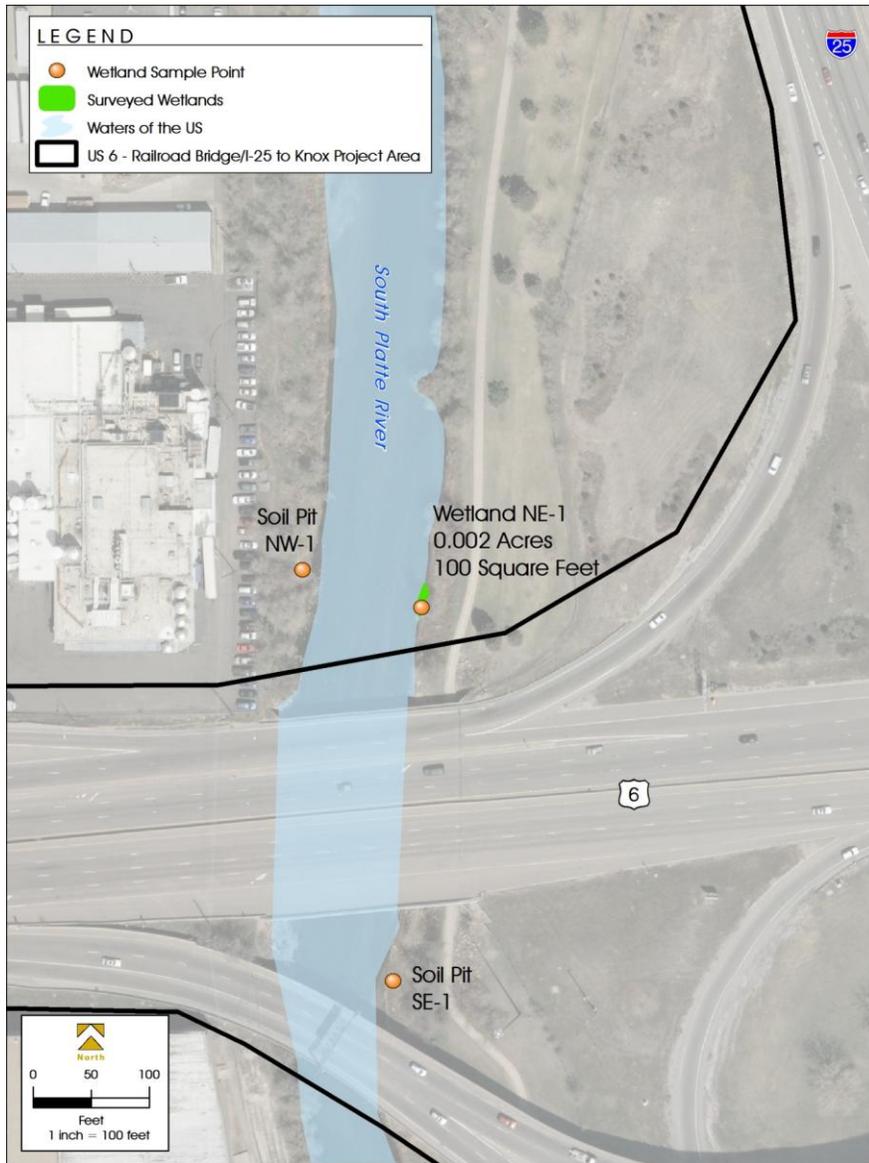


Figure 1010: 2011 Delineated Wetlands near the Project Area

2.3 Wildlife

This section discusses the wildlife species that are known or are potentially present in or near the Project Area. Information on species distribution was obtained from existing literature, NDIS database (NDIS 2011), existing reports for nearby and overlapping projects, including the Valley Highway EIS: Logan Street to 6th Avenue (CDOT 2006), and information collected during field surveys conducted in October 2011. A raptor survey was conducted during the site visits in October 2011 and May 2012 (Section 2.4).

This corridor is used by waterfowl, of which both Canada Geese (*Branta canadensis*) and Mallard Ducks (*Anas platyrhynchos*) were observed at the time of the field surveys. Other wildlife tracks identified include raccoon (*Procyon lotor*), coyote (*Canus latrans*), and muskrat (*Ondatra zibethicus*).

Based on the habitats present in the Project Area (Section 2.1), mammals, birds, reptiles, and amphibians could occur within the Project Area. The following section provides a brief description of those that were either observed during field visits or potentially occur within the Project Area.

2.3.1 Mammals

According to the NDIS database, over 44 mammal species are known or likely to occur in CCD (NDIS 2011). These include big game species (hoofed animals), carnivores (canines, cats, and weasels), bats, lagomorphs (rabbits and hares), and rodents (squirrels, chipmunks, mice, voles) (NDIS 2011). These groups of mammals are briefly discussed below.

Big game, including mule deer (*Odocoileus hemionus*) and white-tailed deer (*Odocoileus virginianus*), occupy a variety of habitats within Colorado and both species are known to occur within the South Platte River Drainage. There were no indicators such as tracks or scat of either the two big game species observed during the field review. While these species may incidentally forage within the Project Area; the available foraging habitat within and adjacent to the Project Area has been drastically reduced as a result of noxious weed invasion, human disturbance; residential, commercial and industrial development; and associated infrastructure.

Numerous carnivore species occur in the Project Area, the most common being raccoon (*Procyon lotor*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and striped skunk (*Mephitis mephitis*). All of these animals use a variety of habitats and their range encompasses large areas (Fitzgerald, et al. 1994). These species may utilize Project Area as a transient individual or for hunting purposes. In some instances, some carnivore species adapted to human presence, such as raccoons, may utilize the Project Area for denning habitat. Tracks and scat were observed and identified as being raccoon and coyote.

There are several bat and lagomorph species that forage within the Project Area. This group includes big brown bat (*Eptesicus fuscus*), big free-tailed bat (*Nyctinomops macrotis*), hoary bat (*Lasiurus cinereus*), little brown myotis (*Myotis lucifugus*), long-eared myotis (*Myotis evotis*), silver-haired bat (*Lasionycteris noctivagans*), eastern cottontail (*Sylvilagus floridanus*), and the white-tailed jackrabbit (*Lepus townsendii*). All of these animals use a variety of habitats, mostly large open areas or edge habitat

(Fitzgerald, et al. 1994). No tracks, scat, dens, roosts, or other sign of these species were observed during the field survey.

There are many rodent species that may occur in the Project Area. This group is very large and species common in the Project Area included muskrat (*Ondata zibethicus*) and fox squirrel (*Sciurus niger*). Various mice and voles, and woodrats (*Neotoma* spp.) would also use the Project Area.

2.3.2 Birds

According to NDIS, there are 271 species of birds known to occur in CCD (NDIS 2011), and according to the Colorado Breeding Bird Atlas II for Block 95F1SE (Incomplete Block Status) there are 9 total species within the Project Area (2011). As a result of the habitats present in the Project Area, many species adapted to human activities are likely to utilize the area. These include the American Robin (*Turdus migratorius*), Red-Tailed Hawk (*Buteo jamaicensis*), Rock Dove (*Columba livia*), and Cliff Swallow (*Petrochelidon pyrrhonota*). Many other bird species may use or pass through the Project Area. Mallard Ducks (*Anas platyrhynchos*), Canada Geese (*Branta canadensis*) and a Black-Crowned Night Heron (*Nycticorax nycticorax*) were observed during the field survey in October 2011.

2.3.3 Fish, Reptiles and Amphibians

According to NDIS, there are 21 species of reptiles and 7 amphibians known to occur in CCD (NDIS 2011). Only a few reptile species (snakes and turtles) are anticipated in the Project Area and one amphibian is anticipated because the South Platte River corridor is degraded and has been channelized to limit flood events. This channelization process has caused a reduction in wildlife habitat. Species like the common garter snake (*Thamnophis sirtalis*) and northern leopard frog (*Rana pipiens*) are potential species in the Project Area.

Fish commonly found within the Denver County segment of the South Platte River include common carp (*Cyprinus carpio*), longnose dace (*Rhinichthys cataractae*), longnose sucker (*Catostomus catostomus*), largemouth bass (*Micropterus salmoides*), yellow perch (*Perca flavescens*), white sucker (*Catostomus commersonii*), fathead minnow (*Pimephales promelas*) and creek chub (*Semotilus atromaculatus*) (USGS 1995). While all species have different life histories and habitat requirements; white sucker, common carp, fathead minnow and creek chub are tolerant species; adaptable to degraded water conditions, habitat alterations, siltation, organic pollution, channelization, or flow fluctuation (USGS 1995). While a fish survey was not conducted, it is anticipated these species would occur in greater abundance than the other species mentioned within the Project Area. Impacts to habitat as a result of the construction of the US 6 Bridge over the South Platte River could result from sediment release during the removal and placement of pilings and abutments and the removal of vegetation along the banks of the South Platte River. These impacts will be avoided, minimized and mitigated for in the provisions in the SB 40 Wildlife Certification and through BMPs implemented in the Nationwide CWA Permit.

2.4 Migratory Birds and Raptors

The vast majority of birds found in Colorado and their nests are protected under the Migratory Bird Treaty Act (MBTA) of 1918; -Bald and Golden Eagles have additional protections under the Bald and Golden Eagle Protection Act of 1940. Disturbance of these nests, if active (birds [actively building nest](#),

laying eggs, sitting on eggs, raising young, or other use of a nest), are prohibited. Removal of active bird nests requires a MBTA permit from the United States Fish & Wildlife Service (USFWS) if a *take* occurs or if the nest(s) are *collected* instead of being destroyed (USFWS 2003). Typically, a permit to take an active nest is not granted unless the project is needed to prevent injury or loss of human life.

There is no prohibition that applies to the destruction of a bird nest alone (without birds or eggs), as long as possession does not occur during the destruction (USFWS 2003). For projects with a potential to impact migratory bird nests, CDOT requires Project Special Specification 240 limits construction activity around nests between April 1 to August 31 (CDOT 2011). See **Appendix 6**.

During the site visits in 2011 and 2012, FHU conducted a breeding bird survey to identify the species and locations of breeding birds. During this survey, trees and structures were searched to identify any bird nests. Three individual inactive nests of unknown species and a colony of inactive Cliff Swallow nests were identified during the field visits in October 2011 and early May 2012 (Figure 11). The three unknown nests are north and south of the US 6 bridge over the South Platte River on the west bank of the river, while the colony of Cliff Swallow nests are found on the main US 6 bridge as well as the US 6 exit ramp to I-25. All were inactive at the time of the survey. Therefore, impacts to migratory birds could occur if bridge construction occurs within the nesting season for birds (April 1 to August 31).

No migratory birds or swallow nests were discovered within the vicinity of the BNSF bridge in the September 2011 survey conducted by Wilson & Company (**Appendix 4**).

To avoid any impacts to migratory nesting birds during the construction of the ~~Proposed Project~~Project, clearing and grubbing will occur between September 1 and March 31. If clearing and grubbing is needed between April 1 and August 31, the contractor will be required to conduct a migratory bird survey and monitoring in accordance with Project Special Specification 240 prior to removal of vegetation. The Cliff Swallow nests on structures over the South Platte River will be removed between September 1 and March 31 to avoid any impacts to these migratory birds in accordance to Project Special Specification 240. If removal of the nests, or placement of netting to discourage nesting, is not completed between September 31 and March 31; the contractor will monitor the structures in accordance with Project Special Specification 240. Additionally, netting or other material will be used to keep Cliff Swallows from re-establishing nests on bridge structures. An additional migratory bird nest survey will be conducted to identify any new bird nests in the Project Area if construction starts between April 1 and August 31 to avoid any additional impacts to migratory birds. If a migratory bird nest is found within the project area, the contractor shall avoid the area within 50 feet of the active nests or the area within the distance recommended by the biologist until all nests within that area have become inactive.

Raptors (birds of prey such as: hawks, falcons, eagles, and owls) receive recommended temporal and spatial buffer areas established by the CDPW, the USFWS and in accordance with the Bald and Golden Eagles Protection Act (BGEPA). During the site visits by the project team, no raptors were observed within the Project Area during the breeding bird survey in October 2011 or in a follow-up survey conducted in May 2012. There were no inactive or abandoned raptor nests within the Project Area. Staff surveyed trees for visual cues of the presence of raptor nests, listened for raptors calling in or near the

Project Area, and looked for visible raptors flying and perching. There were no indications of raptors present or nesting within the Project Area at the time of these surveys. If an active raptor nest is established per CDOW guidelines (CDOW 2008), species-specific buffers for human surface activity will be identified, compliant with CDPW recommendations (CDOW 2008).

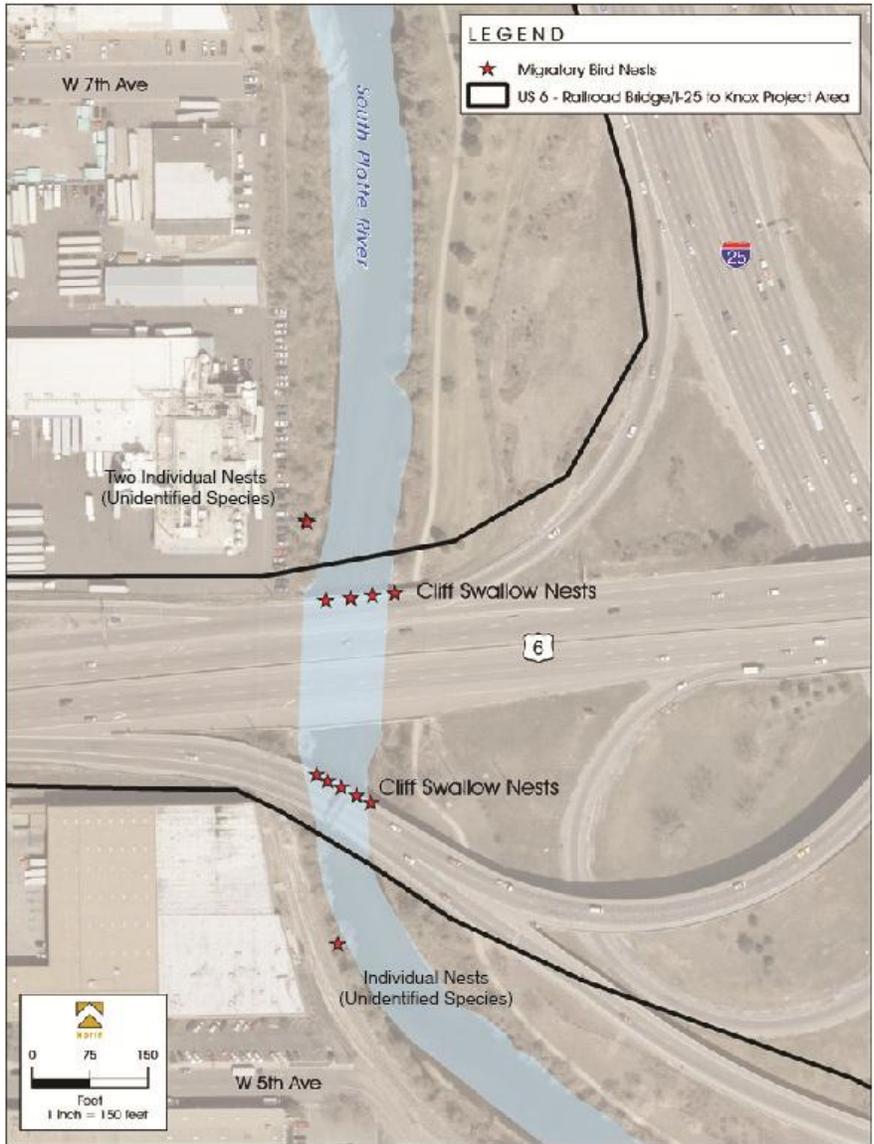


Figure 1111: Bird Nests in the Project Area

2.5 Threatened and Endangered Species

The USFWS (2012) lists seven federal threatened and endangered species that could be affected by activities in CCD. None of these species are anticipated in the Project Area because of a lack of suitable habitat. ~~Six~~ Five of these species can be affected by water depletions from the South Platte River downstream in other states.

The ~~Proposed Project~~ Project has elements that will cause a depletion to the South Platte River basin. In order to address the effects this depletion will have on federally listed species downstream that depend on the river for their survival, CDOT, as a state agency, is participating in the South Platte Water Related Activities Program (SP-WRAP). CDOT is cooperating with FHWA which provides a federal nexus for the ~~Proposed Project~~ Project. In response to the need for formal consultation for the water used from the South Platte basin, FHWA has prepared a Programmatic Biological Assessment (PBA) dated 02/22/2012 that estimates total water usage until 2019. The PBA addresses the following species: Least Tern (interior population) (*Sternula antillarum*), pallid sturgeon (*Scaphirhynchus albus*), Piping Plover (*Charadrius melodus*), western prairie fringed orchid (*Platanthera praeclara*), and the Whooping Crane (*Grus americana*). On 04/04/2012, the USFWS signed a Biological Opinion which concurs with this approach and requires a yearly reporting of water usage. The water used for ~~this Proposed~~ the Project will be reported to the USFWS at the year's end after the completion of the ~~Proposed Project~~ Project as per the aforementioned consultation. Effects to species not addressed in the PBA or affected by causes other than water depletions to the South Platte, will be analyzed separately.

The Project Area is within the Preble's meadow jumping mouse (*Zapus hudsonius prebelii*), a federal threatened species, Block Clearance Zone which was approved by the USFWS in 2010 (USFWS 2010). The USFWS Block Clearance Zone designation determines an absence of species within a given geographic area; therefore Preble's meadow jumping mouse is not present within the zone and no further coordination with the USFWS is required to address potential impacts to the mouse.

The Ute ladies-tresses orchid (*Spiranthes diluvialis*) requires riparian areas adjacent to nearby permanent water sources. However, the Project Area is within the Ute ladies-tresses orchid Block Clearance Zone, which was approved by the USFWS in 2010 (USFWS 2010) and no further coordination with the USFWS is required to address potential impacts to the orchid (USFWS 2010).

A complete list of federal (USFWS 2011) and state threatened and endangered species, federal candidate species (FC), and state species of special concern (SC) (NDIS 2011) that can be found in CCD are listed in Table 3.

Table 3. Threatened & Endangered Species, Federal Candidate (FC) Species, and State Species of Concern (SC) Found within the City and County of Denver

Common Name	Scientific Name	Threatened / Endangered / FC / SC	Habitat ¹	Habitat Present?
Bald eagle	<i>Haliaeetus leucocephalus</i>	State Threatened	Reservoirs and rivers. In winter they may also occur locally in semideserts and grasslands, especially near prairie dog towns.	Not Present
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	SC	They form large colonies or "towns" in shortgrass or mixed prairie.	Not Present
Common garter snake	<i>Thamnophis sirtalis</i>	SC	Inhabits marshes, ponds, and the edges of streams. Mostly restricted to aquatic, wetland, and riparian habitats.	Present
Ferruginous Hawk	<i>Buteo regalis</i>	SC	Inhabits grasslands and semidesert shrublands, and is rare in pinon-juniper woodlands.	Not Present
Greater Sandhill Crane	<i>Grus canadensis</i>	SC	Migrants occur in mudflats around reservoirs, in moist meadows, and in agricultural areas.	Not Present
Least Tern ² (interior population)	<i>Sternula antillarum</i>	Federal Endangered; State Endangered	Nest on bare sandy shorelines of islands and reservoirs. Migrants occur at reservoirs, lakes, and rivers with bare sandy shorelines.	Not present
Long-Billed Curlew	<i>Numenius americanus</i>	SC	Short-grass grasslands and sometimes in wheatfields or fallow fields. Most nest close to standing water.	Not Present
Midget faded rattlesnake ¹	<i>Crotalus viridis concolor</i>	SC	Tend to prefer rocky outcrops in areas where sage is the abundant vegetation. (venomousreptiles.org 2010)	Not Present
Northern leopard frog	<i>Rana pipiens</i>	SC	Wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches.	Present
Pallid sturgeon ²	<i>Scaphirhynchus albus</i>	Federal Endangered	Adapted to living close to the bottom of large, silty rivers. Preferred habitat has a diversity of depths and velocities formed by braided channels, sand bars, sand flats and gravel bars.	Not present
Peregrine Falcon	<i>Falco peregrines</i>	SC	Nest on cliffs and forage over adjacent coniferous and riparian forests. Migrants occur mostly around waterbodies but may also be seen in grasslands and agricultural areas.	Not Present
Piping Plover ²	<i>Charadrius melodus</i>	Federal Threatened; State Threatened	Inhabits mudflats and shorelines of reservoirs and lakes. Breeding birds are found on sandy open shorelines with pebbles.	Not present
Plains Sharp-Tailed Grouse	<i>Tympanuchus phasianellus jamesii</i>	State Endangered	Occurs in Gambel oak and other shrublands lacking conifers. Cropland and riparian areas are also used, especially in fall and winter. Leks are located in wet meadows, ridges and knolls, or recently burned areas.	Not Present
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Federal Threatened; State Threatened	Inhabits riparian areas near standing or running water in lowland areas that are dominated by forested wetlands, shrub dominated wetlands, and grass/forb dominated wetlands between 4,000 and 8,000 ft in elevation.	Not present, also within Block Clearance Zone

Common Name	Scientific Name	Threatened / Endangered / FC / SC	Habitat ¹	Habitat Present?
Swift fox	<i>Vulpes velox</i>	SC	Inhabits grasslands, from shortgrass to midgrass prairies over most of the Great Plains.	Not Present
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	Federal Threatened	Occurs along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams.	Not present, also within block clearance zone
Western Burrowing Owl	<i>Athene cunicularia</i>	State Threatened	Occurs in grasslands in or near prairie dog towns. Summer resident in eastern part of state.	Not present
Western prairie fringed orchid ²	<i>Platanthera praeclara</i>	Federal Threatened	Occurs most often in mesic to wet unplowed tallgrass prairies and meadows but have been found in old fields and roadside ditches.	Not present
Western Snowy Plover ¹	<i>Charadrius alexandrinus nivosus</i>	SC	Nests on sand spits, dune-backed beaches, beaches at creek and river mouths and the banks of lagoons and estuaries. (westernsnowyplover.org 2010)	Not Present
Whooping Crane ²	<i>Grus Americana</i>	Federal Endangered; State Endangered	Has been recorded in mudflats around reservoirs and in agricultural areas.	Not present
Yellow-Billed Cuckoo ²	<i>Coccyzus americanus</i>	FC	They inhabit lowland riparian forests and urban areas with tall trees. Rare spring and fall migrant, inhabits areas farther south and mountain parks.	Not Present

Notes: 1 All habitat information taken from CDOW-NDIS 2011 and USFWS 2011, unless otherwise noted.
2 Water depletions in the South Platte River may affect the species and/or critical habitat in downstream reaches in other states.

No State threatened or endangered species are anticipated to occur in the Project Area. Potential habitat exists on either side of the South Platte River for the northern leopard frog and the common garter snake, both species of State Special Concern.

2.5.1 Common Garter Snake

Habitat for the common garter snake (wetlands and riparian habitats) is present in the Project Area, but these habitats are of marginal quality. The ~~Proposed Project~~Project will result in a small loss of riparian habitat due to the bridge replacement on US 6 over the South Platte River. The ability to completely avoid impacts to potentially suitable habitat within the Project Area is not feasible because of the limited area to expand the roadway and proximity of this habitat is to the current roadway. Impacts to the common garter snake include foraging habitat loss.

2.5.2 Northern Leopard Frog

Northern leopard frogs inhabit wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches. Northern leopard frogs inhabit elevations ranging from below 3,500 feet to above 11,000 feet (NDIS 2011). The reconstruction of the bridges over the South Platte River will impact suitable breeding habitat for the northern leopard frog through removal of vegetation and sediment release into the South Platte River.

2.5.3 Impacts to State Sensitive Species

The ability to completely avoid impacting the common garter snake and the northern leopard frog during the removal and replacement of the US 6 Bridge over the South Platte River is not feasible because of the limited area to expand the roadway and proximity of the habitat to the current roadway. Impacts to this area will be mitigated by erosion control to keep sediment out of the South Platte River during construction and 1:1 replacement of all Senate Bill 40 vegetation. Impacts to suitable northern leopard frog and common garter snake habitat will be minimal.

3. CONCLUSIONS

Vegetation

There will be impacts to urban and riparian vegetation as a result of the ~~Proposed Project~~ Project. There are numerous trees located within the existing Project Area ROW that will be affected by the Project. Based on current design and grading plans, the ~~Proposed Project~~ Project will remove 169 upland trees. These trees will be replaced with native species at a 1:1 ratio in accordance to CDOT Region 6 policy.

Wetland Resources

A total of 100 square feet of jurisdictional wetlands will be impacted as a result of the Project. FHWA and CDOT policy requires compensatory mitigation for permanent impacts to both jurisdictional and non-jurisdictional wetlands. Wetland mitigation is typically done on a 1:1 basis; however, a Clean Water Act Section 404 permit that is issued by the USACE for jurisdictional impacts may require higher ratios if unique or high quality wetlands are impacted. Permanent impacts to wetlands are less than 0.10 acres; therefore, a Functional Assessment for Colorado Wetlands (FACWet) analysis is not required. The ~~Proposed Project~~ Project will permanently impact less than 500 square feet of wetlands, a Wetland Finding is not required.

Wildlife

The aquatic/open water habitat provides habitat for fish such as common carp, white sucker and fathead minnow. Habitat for these fish could be impacted as a result of the replacement of the structures over the South Platte River.

Migratory Birds and Raptors

The US 6 Bridges Design Build Project has a potential to impact migratory birds as a result of removal of vegetation throughout the project area and the replacement of the structures over the South Platte River. In order to mitigate impacts to migratory birds within the Project Area, CDOT Project Special Provision 240 will be followed.

Threatened and Endangered Species

Since the 2006 ~~VHEIS~~ FEIS and 2007 ~~VHEIS~~ Phase 1 ROD, a USFWS Block Clearance Zone (2008) was established for Ute ladies tresses orchid, Preble's meadow jumping mouse and the Colorado butterfly plant. The Project Area falls completely within this Block Clearance Zone; therefore, no additional

coordination was required. No suitable habitat for any federally listed threatened or endangered species occurs within the Project Area.

The Project will result in a depletion to the South Platte River; therefore there is a potential to impact the following federally listed threatened or endangered species: Least Tern, pallid sturgeon, Piping Plover, western prairie fringe orchid, and the Whooping Crane. Impacts to these species as a result of a depletion to the South Platte River are addressed by the April 24, 2012 Biological Opinion issued by the USFWS addressing depletions and impacts to those species.

State Sensitive Species

There will be minor impacts to the northern leopard frog and the common garter snake. Impacts to habitat to the northern leopard frog and the common garter snake will be mitigated by erosion control to keep sediment out of the South Platte River during construction and 1:1 replacement of all Senate Bill 40 vegetation. Measures will be outlined in provisions of the SB 40 Wildlife Certification and BMPs associated with the CWA 404 Permit.

Table 4. Summary of Previously and Currently Identified Biological Resource Impacts and Mitigation

Resource	EIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
Migratory Bird Treaty Act (MBTA)	Potential to disturb migratory bird nests as a result of demolition or construction activities.	To avoid a disturbance or “take” of a migratory bird nest, any trees or man-made structures, such as bridges or highway overpasses, which would be removed during the nesting season, will be surveyed for the presence of active bird nests. If no active nests are observed, the trees or bridges can be removed. However, should removal occur during nesting season, every effort will be made to prevent the nesting of birds, such as swallows, leading up to the demolition of existing structures.	MBTA rules will still apply. The Proposed Project will still require the replacement of the structures over the South Platte River and the removal of trees throughout the project area.	Potential to disturb migratory bird nests as a result of tree removal. Potential to disturb nesting Cliff Swallow demolition or construction activities of the structures over the South Platte River.	The Contractor will follow CDOT Project Special Provision 240. If construction is to commence between April 1 and August 31, to avoid impacts to nesting birds in accordance with the MBTA, a qualified biologist will conduct a nest survey prior to construction. If active nests are found during construction, coordination with CPW and USFWS is required to determine an appropriate course of action, which may include, but is not limited to, a delay in construction to avoid the breeding season.

Resource	FIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
Threatened and Endangered Species	There would be no impacts to threatened and endangered species under any of the system alternatives.	N/A	Depletion to the South Platte River as a result of the construction of the structures over the South Platte River.	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 depletion to the South Platte River.	On 04/04/2012, the USFWS signed a Biological Opinion which concurs with this approach and requires a yearly reporting of water usage. The water used for this Project is to be reported to the USFWS at the year's end after the completion of the Project as per the aforementioned consultation. Effects to species not addressed in the PBA or affected by causes other than water depletions to the South Platte, will be analyzed separately. All of this reporting and analysis is done by CDOT's Wildlife Specialist, Jeff Peterson as part of the SPWRAP and does not to be included in the Project Mitigation Tracking Form.
Threatened and Endangered Species	There would be no impacts to threatened and endangered species under any of the system alternatives.	N/A	USFWS Block Clearance (2008) created for Ute ladies tresses orchid, Prebles meadow jumping mouse and the Colorado butterfly plant.	N/A	The project area falls completely within the USFWS Block Clearance Zone for these species; therefore, mitigation will not be required.

Resource	FEIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
Vegetation	<p>Direct permanent impacts to vegetation would result from the increased footprint of the highway facilities in each system alternative, including the Preferred Alternative, through widened bridges, reconfigured interchanges, and the widening of I-25 and US 6. Temporary impacts to vegetation will occur throughout the project area during construction due to equipment movement, material storage, and staging area disturbances.</p> <p>Of the five vegetation types identified, the majority of disturbance will occur in the industrial and riparian areas. Impacts to riparian areas will occur at 6th Avenue. Urban landscape vegetation impacts were discussed in Sections 4.3 <i>Parks and Recreation</i> and 4.4 <i>Aesthetics and Urban Design</i> of the VHEISFEIS.</p>	N/A	<p>Impacts to vegetation will be similar to those outlined in the VHEISFEIS; however, will be limited to the project area defined in this study. These impacts will be limited to CDOT ROW adjacent to the US 6 corridor from the I-25 interchange to Knox Court. There will be impacts to vegetation adjacent to Barnum Park; however, these impacts are discussed in the Aesthetics and Urban Design Technical Report.</p> <p>3-37</p>	<p>There will be impacts to urban and riparian vegetation as a result of this project.</p>	<p>Enhance and incorporate impacted landscape areas (irrigated or otherwise) into final design to ensure the existing landscape does not become fragmented.</p> <p>The Contractor will prepare an SB-40 Wildlife Certification Application and Mitigation Plan and submit to CDOT for final review, approval, and CDOT submittal to the Colorado Parks and Wildlife prior to construction. The Contractor will be responsible for any replacement trees as required. CDOT shall review, approve and submit the application to CPW at least 60 days prior to planned construction or maintenance activities to allow for CPW review of the submitted documents and for follow up coordination, if required. CPW shall complete its review of the application and issue SB-40 Certification or request additional information or mitigation commitments within 30 days of submittal. CDOT Project Special Provision 240 will be followed.</p>

Resource	FIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
Vegetation	Disturbance to vegetation within the project corridor.	To minimize the adverse effects of disturbance to vegetation, the Preferred Alternative will follow CDOT revegetation practices. Disturbed areas will be seeded in phases throughout construction with a CDOT landscaped architect-approved native seed mix. Seeding will occur during appropriate seeding windows. If out of season, the slopes will be temporarily protected from erosion with mulch and mulch tackifier. Permanent seeding will occur throughout the project, bringing areas to completion as soon as possible.	N/A	Disturbance to vegetation within the project corridor.	<p>Reseed and protect temporary disturbance areas with CDOT-approved BMPs and avoid disturbance to existing vegetation, to the maximum extent possible.</p> <p>Seed, mulch, and mulch tackifier will be applied in accordance with CDOT Specifications.</p> <p>Implement the Integrated Noxious Weed Management Plan which is provided in the Biological Resources Report (Appendix G), or as otherwise approved by CDOT.</p>

Resource	FIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
Vegetation	Disturbance to SB 40 vegetation within the project corridor.	Mitigation for impacts to riparian areas will be coordinated with CDOW as required by Senate Bill 40 (33-5-101-107 CRS 1973) as amended. Replacement ratio for trees greater than 2 inches diameter in breast height will be one-to-one. Existing shrubs will be replaced with native species to their pre-construction area/coverage. Existing irrigation systems will be maintained and/or modified appropriately such that existing landscape features are preserved.	N/A	Disturbance to vegetation within the project corridor.	Trees removed during construction shall be replaced with a goal of 1:1 replacement based on a stem count of all trees with diameter at breast height of 2 inches or greater. Shrubs removed during construction, whether native or non-native, will be replaced based on their preconstruction aerial coverage. In all cases, all such trees and shrubs will be replaced with native species.

Resource	FEIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
Wetlands	Direct impacts to wetlands and other waters of the U.S. associated with the system alternatives would result from construction on existing or new bridges over the South Platte River, from stormwater drainage outfalls to the South Platte River, and from roadway and interchange reconfiguration.	<p>FHWA and CDOT policy requires compensatory mitigation for permanent impacts to both jurisdictional and non-jurisdictional wetlands. Wetland mitigation is typically done on a 1:1 basis; however, a Clean Water Act Section 404 permit that is issued by the USACE for jurisdictional impacts may require higher ratios if unique or high quality wetlands are impacted. More accurate estimates of temporary and permanent impacts to wetlands will be made during final design and permitting.</p> <p>While 0.45 acres of wetland with hydrological connection to connection to the South Platte River were indicated in the WHEIS/FEIS, none of these wetlands were within the vicinity of the US 6 structures over the South Platte River.</p>	A new wetland was delineated north of the US 6 structures over the South Platte River. This wetland is 100 SF in size.	Due to the proximity of this wetland to the structure at the South Platte River it is assumed this wetland will be permanently impacted in the construction of the structures over the South Platte River. A total of 100 square feet of jurisdictional wetlands will be impacted as a result of the Project.	<p>The Contractor must accurately estimate the amount of permanent and temporary impacts to all jurisdictional and non-jurisdictional wetlands including the 100 square foot area near the I-25 southbound ramp to US 6 identified in the Biological Resources Report and the impacts below the ordinary high water mark due to the replacement of the South Platte River bridge. The Contractor must provide those impact calculations to CDOT as part of the Section 404 permit application.</p> <p>The contractor must mitigate for temporary and permanent wetland impacts, through banking, to both jurisdictional and non-jurisdictional wetlands on a 1:1 basis, at a minimum. CDOT will pay for mitigation banking credits for <u>up to 100</u> square feet of wetland impacts. -The contractor is responsible to pay for any additional wetland bank credits <u>greater than 100 square feet, beyond the CDOT provided 100 square feet,</u> from a wetland mitigation bank approved by the USACE.</p>

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Resource	FIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
					<p><u>All wetlands delineated and mapped for the project as shown in Biological Resources Report that will not be impacted by the project, will be protected from construction activities by construction limit fencing. All wetlands delineated and mapped for the project as shown in Biological Resources Report will be protected from construction activities by construction limit fencing.</u></p>

Resource	FIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
					<p>CDOT will require the Contractor to prepare any applications for Clean Water Act Section 404 permits and submit to CDOT for final review, approval, and submittal to USACE. The Contractor will be responsible for purchasing any mitigation credits required.</p> <p>Design and construct minimum length culverts and use construction BMPs to reduce impacts to wetlands, waters of the US and riparian areas.</p> <p>Use construction BMPs to reduce temporary impacts; and use water quality BMPs to minimize indirect impacts.</p>
Fish	The aquatic/open water habitat provides habitat for fish such as common carp, white sucker and fathead minnow. Habitat for these fish could be impacted as a result of the replacement of the structures over the South Platte River	Where practicable, construction of bridges over the South Platte River will be conducted during the non-breeding season (August through March) to avoid impacts to spawning fish and spawn beds.	N/A	The aquatic/open water habitat provides habitat for fish such as common carp, white sucker and fathead minnow. Habitat for these fish could be impacted as a result of the replacement of the structures over the South Platte River.	Construct bridges over the South Platte River during the non-breeding season (August through March) to avoid impacts to spawning fish and spawn beds or as otherwise specified in the SB-40 Wildlife Certification.

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Resource	FIS and 2007 ROD		US 6 Bridges Design Build Project: What Has Changed	US 6 Bridges Design Build Project	
	Impacts of Proposed Action	Mitigation		Impacts of Proposed Action	Mitigation
State Sensitive Species	<i>Not previously discussed</i>	<i>Not previously discussed</i>	N/A	Potential for minor impacts to the northern leopard frog and the common garter snake.	Mitigate for impacts to habitat to the northern leopard frog and the common garter snake by installing any approved BMPs from the SB 40 Wildlife Certification and the Nationwide Clean Water Act Section 404 Permit.

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