

# **US 50 West: Wills Boulevard to McCulloch Boulevard (Milepost 313 to Milepost 307)**

Project Number: STA 0503-088  
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## **Biological Resources Report**

### **Prepared for:**

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## List of Acronyms and Abbreviations

Ave	Avenue
Bldv	Boulevard
BA	Biological Assessment
BO	Biological Opinion
CDA	Colorado Department of Agriculture
CDOT	Colorado Department of Transportation
CPW	Colorado Parks and Wildlife
CWA	Clean Water Act
EA	Environmental Assessment
ESA	Endangered Species Act
EXPN	Experimental population
FC	Federal candidate species
FE	Federally endangered species
FHWA	Federal Highway Administration
FT	Federally threatened species
IPaC	Information, Planning, and Conservation System
MBTA	Migratory Bird Treaty Act
NDIS	Natural Diversity Information Source
OTIS	Online Transportation Information System
PBS-1	Pueblo Boulevard South-1
PEL	Planning and Environmental Linkages
Rd.	Road
ROW	right-of-way
SB 40	Senate Bill 40
SC	State candidate species
SE	State endangered species
SGPI	Shortgrass Prairie Initiative
ST	State threatened species
SWMP	Stormwater Management Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
WCN-1	Williams Creek North-1
WCS-1	Williams Creek South-1
WHDC	Wild Horse Dry Creek-1
WUS	waters of the US

## 1. Introduction

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This environmental assessment (EA) is for safety and capacity improvements to US Highway 50 (US 50) between Wills Boulevard (Blvd) and McCulloch Blvd that the Colorado Department of Transportation (CDOT), is proposing, in consultation with Federal Highway Administration (FHWA), is proposing within the City of Pueblo, Pueblo County, and Pueblo West Metropolitan District (PWMD). This project is the third in a sequence of improvements that CDOT is making to US 50, all under the framework of the *US 50 West Planning and Environmental Linkages (PEL) Study* (CDOT, 2012a). The US 50 West PEL established the purpose and need, evaluated a full range of alternatives, and developed the *US 50 West PEL Implementation Plan* (CDOT, 2012b) for the PEL recommended Preferred Alternative within a 12-mile corridor from Swallows Road to Baltimore Avenue. Safety and capacity improvements included in the PEL recommended Preferred Alternative generally consist of widening US 50 from four lanes to six lanes from McCulloch Blvd to Wills Blvd and establishing grade-separated interchanges at McCulloch Blvd, Purcell Blvd, and Pueblo Blvd. US 50 would remain a four-lane highway west of McCulloch Blvd.

At the completion of the PEL Study, funds were not available to construct the recommended improvements for the entire PEL Corridor, leading CDOT to implement a sequence of improvement projects in coordination with FHWA. The following summarizes the sequence of completed National Environmental Policy Act (NEPA) studies and recent improvements for US 50 that have led to this *US 50 West Wills Blvd to McCulloch Blvd EA*, as shown in **Figure 1**:

- The *US 50 West Purcell Blvd to Wills Blvd EA* (CDOT, 2014) provides widening 3.4 miles of eastbound US 50 from two lanes to three lanes from Purcell Blvd to Wills Blvd to establish five lanes (three eastbound and two westbound). Safety improvements include adding northbound right turns onto US 50 at McCulloch Blvd and Purcell Blvd and establishing two water quality ponds on the east and west sides of Wild Horse Dry Creek. In addition, widening the eastbound bridge at Wild Horse Dry Creek accommodates a future pedestrian/bicycle path. Construction of these improvements is scheduled for completion in 2016.
- The *US 50 West Wills Blvd to BNSF Acceleration Lane Categorical Exclusion* (CDOT, 2015), recently approved by CDOT, establishes a westbound acceleration lane on US 50 from Wills Blvd to the BNSF right-of-way (ROW), east of the BNSF bridge, shown on **Figure 1**. Construction of the acceleration lane is scheduled for 2016.
- CDOT and FHWA are currently undertaking the *US 50 West Wills Blvd to McCulloch Blvd EA* to provide additional safety and capacity improvements to US 50. Improvements include widening 3.4 miles of westbound US 50 between Wills Blvd and Purcell Blvd, from two lanes to three lanes; and widening 2.4 miles of westbound and eastbound US 50 between Purcell Blvd and McCulloch Blvd, from two lanes to three lanes in each direction. Grade-separated interchanges would be established within the US 50 ROW at Purcell Blvd and Pueblo Blvd. A future pedestrian/bicycle path would also be accommodated between Wills Blvd and Pueblo Blvd. A regional water quality pond is proposed to treat US 50 runoff and PWMD municipal runoff.

The Proposed Action, in combination with the improvements under construction from Purcell Blvd to Wills Blvd, would establish six-lane capacity (three lanes in each direction) in the most congested portion of the PEL Corridor, between Wills Blvd and McCulloch Blvd.

1 For this EA, the existing features of US 50, including the improvements approved through the *US*  
2 *50 West Purcell Blvd to Wills Blvd EA* (CDOT, 2014) and the *US 50 West Wills Blvd to BNSF*  
3 *Acceleration Lane Categorical Exclusion*, represent the No Action Alternative. The No Action  
4 Alternative assumes that no other major capacity improvements would be made to US 50. The No  
5 Action Alternative also includes routine maintenance to keep the existing transportation network in  
6 good operating condition.

7 CDOT and FHWA prepared this EA to evaluate the Proposed Action benefits and environmental  
8 impacts, relevant to the No Action Alternative. This EA will also ensure that the Proposed Action  
9 would have logical termini and independent utility and would not restrict other reasonably  
10 foreseeable transportation improvements identified in the PEL recommended Preferred Alternative.

11 Future elements of the PEL recommended Preferred Alternative will undergo NEPA analysis as  
12 funding for design, ROW, and construction becomes available.

13 This biological resources assessment has been prepared in support of the *US 50 West Wills Blvd to*  
14 *McCulloch Blvd EA*. This technical report reviews biological resources previously surveyed for the  
15 eastbound project, describes new biological resources within and adjacent to the project area  
16 (biological resources study area), evaluates the potential for impacts as a result of the Proposed  
17 Action and No Action Alternative, and identifies proposed mitigation measures.

18 The following resources were included in the assessment:

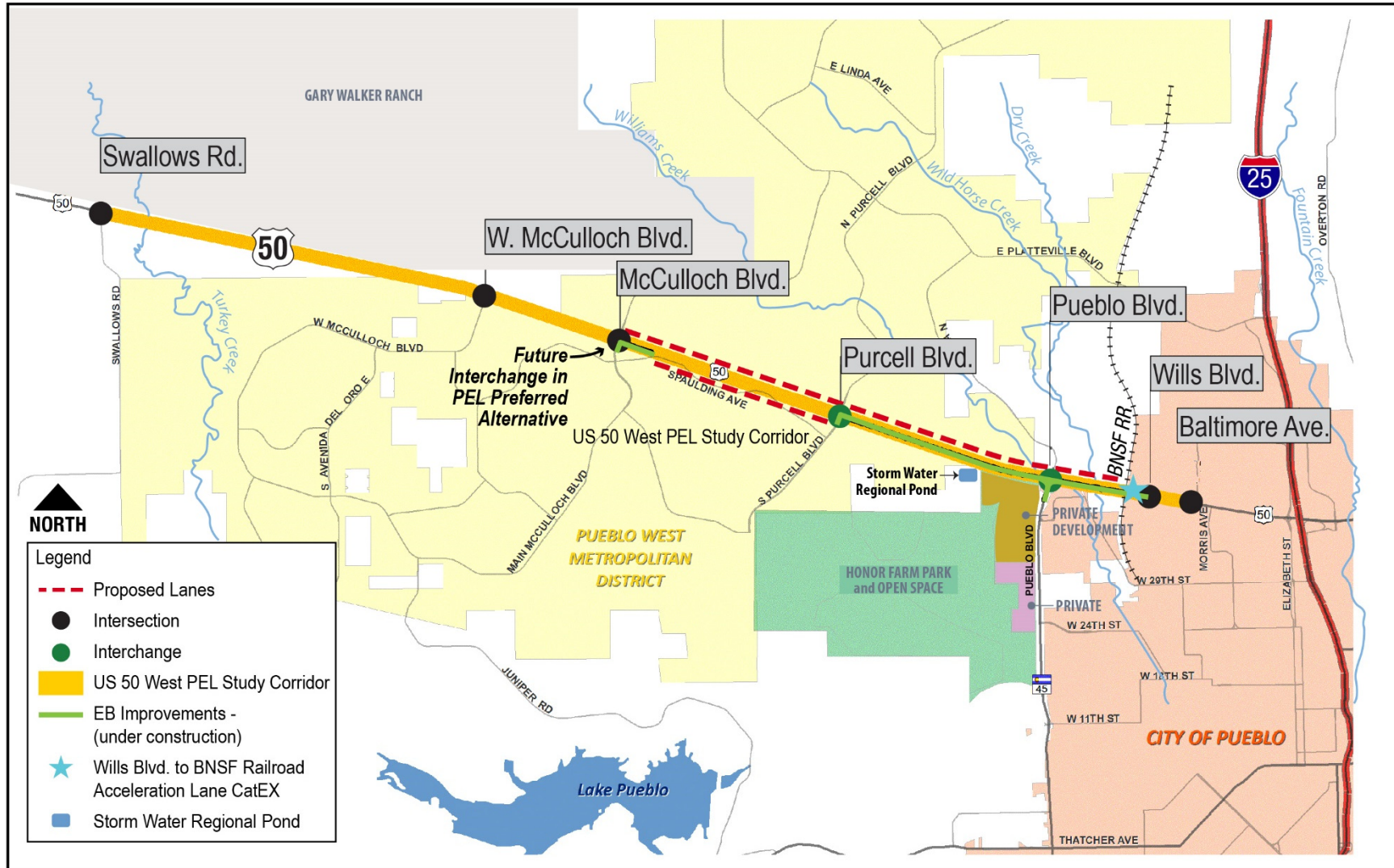
- 19     ▪ Vegetation, including noxious weeds
- 20     ▪ Potential habitat for special status species (federally-listed species, state-listed species, and  
21       non-listed rare plants)
- 22     ▪ Migratory bird activity and nests
- 23     ▪ Wetlands/Waters of the US (WUS)
- 24     ▪ Senate Bill 40 (SB 40) resources

25 The Proposed Action for the *US 50 West Wills Blvd to McCulloch Blvd EA* is located within CDOT's  
26 Shortgrass Prairie Initiative (SGPI) project area identified in the Programmatic Biological  
27 Assessment (BA) and Biological Opinion (BO) (2004), developed to mitigate anticipated impacts on  
28 the shortgrass prairie ecosystem from CDOT projects for species listed as threatened or endangered  
29 under the ESA and for declining non-listed species that may become listed in the future. However,  
30 the SGPI is not applicable to this project because transportation improvements would extend  
31 outside the CDOT right-of-way (ROW).



# 50 US 50 West Environmental Assessment

Figure 1. Proposed Action and PEL Study Corridor



## 2. Project Description

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### 2.1 Proposed Action

The Proposed Action for this *US 50 West Wills Blvd to McCulloch Blvd* EA involves widening 3.4 miles of westbound US 50 from two lanes to three lanes, to include a third westbound lane from Wills Blvd (Milepost 313.15) to Purcell Blvd (Milepost 309.78), and widening 2.4 miles of both westbound and eastbound US 50 from Purcell Blvd (Milepost 309.78) to McCulloch Blvd (Milepost 307.34). Grade-separated interchanges would be established at Pueblo Blvd and at Purcell Blvd. The Proposed Action from Wills Blvd to McCulloch Blvd, in combination with the eastbound improvements under construction from Purcell Blvd to Wills Blvd, would establish six-lane capacity (three lanes in each direction), for 5.8 miles of US 50, consistent with the *US 50 West PEL Implementation Plan* (CDOT, 2012b).

CDOT is proposing the following transportation improvements between Wills Blvd and McCulloch Blvd:

- **Wills Blvd Intersection to BNSF Railroad Bridge (Milepost 313.15 to Milepost 312.87)** – A third westbound lane would be established by restriping the Wills Blvd to BNSF acceleration lane (*US 50 West Wills Blvd to BNSF Acceleration Lane Categorical Exclusion*; CDOT, 2015) and by extending the westbound lane through the BNSF railroad bridge underpass to Pueblo Blvd.
- **BNSF Railroad Bridge through Pueblo Blvd Intersection (Milepost 312.87 to Milepost 312.65)** – The westbound lanes of US 50 in the vicinity of Pueblo Blvd would be realigned to be parallel to the eastbound lanes from Milepost 311.45 to Milepost 312.65, and the existing westbound bridge over Wild Horse Dry Creek would be replaced. A grade-separated interchange would be established, with Pueblo Blvd crossing over US 50. The Williams Creek concrete box culvert (CBC) under the eastbound US 50 lanes would be extended 160 ft. to accommodate the realigned westbound lanes, including the westbound third-lane widening. Pueblo Blvd would be widened to accommodate two additional left turn lanes onto westbound US 50 via a right-side exit ramp. The existing westbound US 50 lanes would be retained and modified to provide access from US 50 onto southbound Pueblo Blvd. The *US 50 West PEL Implementation Plan* (CDOT, 2012b) identifies the Proposed Action at US 50 at Pueblo Blvd to be implemented as phased improvements over time. The Proposed Action would implement a diamond-type interchange at Pueblo Blvd. The PEL recommends a Diverging Diamond Interchange configuration, which would be implemented at some time in the future when the Pueblo Blvd Extension is developed as an expressway between US 50 and I-25 (CDOT, 2012a).
- **Pueblo Blvd to Purcell Blvd Intersection (Milepost 312.65 to Milepost 309.78)** – The westbound third lane would extend from Pueblo Blvd to Purcell Blvd, and a full six-lane grade-separated interchange would be developed, with US 50 crossing over Purcell Blvd. A CBC under Purcell Blvd would be extended to accommodate a future pedestrian/bicycle trail and future widening of Purcell Blvd.

- 1       ■ **Purcell Blvd to McCulloch Blvd (Milepost 309.78 to Milepost 307.34)** – The Proposed  
2       Action would include a third westbound lane extending from Purcell Blvd and terminating at  
3       a right turn onto northbound McCulloch Blvd; and a third eastbound lane extending from  
4       the newly established northbound right turn from McCulloch Blvd and terminating at  
5       Purcell Blvd. The ultimate configuration for US 50 and McCulloch Blvd, although not part  
6       of this EA, is a grade-separated interchange as identified in the *US 50 West PEL*  
7       *Implementation Plan* (CDOT, 2012b).
- 8       ■ **Pedestrian/Bicycle Path** – The Proposed Action would accommodate a future  
9       pedestrian/bicycle path within CDOT ROW along the south side of US 50 from Wills Blvd  
10      to Pueblo Blvd, which is an element of the PEL recommended Preferred Alternative  
11      (CDOT, 2012a). The slope paving adjacent to the eastbound lanes at the BNSF railroad  
12      underpass would be modified to accommodate the pedestrian/bicycle path.
- 13      ■ **Municipal Separate Storm Sewer System (MS4) Improvements/Regional Pond** – The  
14      Proposed Action would include water quality improvements and a regional pond.  
15      Stormwater runoff for the westbound lane widening and interchange improvements between  
16      Wills Blvd and Pueblo Blvd (Milepost 313.5 to Milepost 311.15) would be directed to the  
17      two extended detention basins under construction on the east and west sides of Wild Horse  
18      Dry Creek. Stormwater runoff for the westbound and eastbound lanes between Pueblo Blvd  
19      and McCulloch Blvd (Milepost 311.5 to Milepost 307.34) would be directed to a proposed  
20      regional pond site within a private parcel west of Pueblo Blvd and south of US 50.

21 **Figure 2** provides a general map of the Proposed Action.

## 22 **2.2 No Action Alternative**

23 The existing features of US 50, including the improvements approved through the *US 50 West Purcell*  
24 *Blvd to Wills Blvd EA* (CDOT, 2014) and the *US 50 West Wills Blvd to BNSF Acceleration Lane*  
25 *Categorical Exclusion*, represent the No Action Alternative. The No Action Alternative assumes that  
26 no other major capacity improvements would be made to US 50. The No Action Alternative also  
27 includes routine maintenance to keep the existing transportation network in good operating  
28 condition.





## 3. Methods

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The biological resources assessment included the following to evaluate resources identified during surveys conducted in 2013 and 2014 for the eastbound US 50 EA:

- A review of previous environmental studies conducted in the project vicinity (FHU, 2014a, 2014b, 2014c)
- A review of existing environmental data
- Field surveys conducted on April 1, 2015, and December 3, 2015.

**Section 4** discusses the impact assessment that was completed for the Proposed Action and No Action Alternative.

### 3.1 Review of Previous Environmental Studies

Before field surveys were conducted, Felsburg Holt & Ullevig (FHU) staff reviewed the biological resources information from the US 50 West PEL Study (CDOT, 2012a), the *US 50 West Purcell Blvd to Wills Blvd EA Biological Resources Report* (FHU, 2014a), the eastbound *US 50 West Purcell Blvd to Wills Blvd EA Wetland Delineation Technical Report* (FHU, 2014b), and the eastbound *US 50 West Senate Bill 40 Formal Wildlife Certification Report* (FHU, 2014c) to collect baseline information on vegetation/noxious weeds, potential habitat for special status species (federally-listed and state-listed species), and wetlands/WUS within the study area. FHU staff then updated baseline information based on the most current conditions within the study area from site surveys on April 1, 2015, and December 3, 2015. The sections of this report directly correlate with *US 50 West Purcell Blvd to Wills Blvd EA Biological Resources Report* (FHU, 2014a) and incorporate additional information specific to the westbound US 50 EA project.

### 3.2 Review of Other Environmental Data

FHU staff collected and reviewed other environmental data related to the existing biological conditions within the study area from various sources, including the Colorado Parks and Wildlife (CPW) Natural Diversity Information Source (NDIS) database, CDOT, United States Fish and Wildlife Service (USFWS), relevant research publications, aerial photography, and topographic maps.

### 3.3 Field Surveys

FHU staff conducted multiple biological field surveys to collect information on vegetation/noxious weeds, wildlife species and habitats, special status species (federally-listed, state-listed, and non-listed rare plants), wetlands/WUS, and SB 40 resources within the biological resources study area.

FHU staff conducted an initial field survey within the Purcell Blvd to Wills Blvd portion of the project on June 3, 2013. The field survey included compiling an inventory of vegetation and noxious weeds; assessing wildlife, including aquatic resources, special status species, migratory bird activity and nests, and habitat; and conducting the wetland delineation.



1 FHU staff then conducted additional field surveys within the Purcell Blvd to Wills Blvd portion of  
2 the project on June 25 and 27, and on July 10 and 31, 2013, to identify the presence/absence of any  
3 rare plants endemic to Pueblo County and the Arkansas Valley shale barren region.

4 Wetlands were delineated in 2013, and the Purcell Wetland West was delineated on April 1, 2015.  
5 These surveys were conducted to identify the presence or absence of rare plants and noxious weeds,  
6 as well as to assess wildlife, including aquatic resources, special status species, migratory bird activity  
7 and nests, and habitat.

8 **Appendix A** includes photographs from all of the 2013 and 2015 field surveys.

## 9 **4. Existing Conditions**

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### 10 **4.1 Environmental Setting**

11 Land use surrounding US 50 in the study area is predominantly rangeland with scattered residential  
12 and commercial development (FHU, 2014a). Commercial development focuses on the four major  
13 arterial roads: McCulloch Blvd, Purcell Blvd, Pueblo Blvd, and Wills Blvd. Residential development  
14 is focused both to the north and south of US 50 between Pueblo Blvd and Purcell Blvd, and in the  
15 southwest corner of the McCulloch Blvd/Purcell Blvd intersection. The BNSF railroad also crosses  
16 US 50 within the study area.

17 The study area lies within both the Dry Creek watershed and the Wild Horse Creek watershed, both  
18 within the Upper Arkansas River Basin. Williams Creek and Wild Horse Dry Creek cross US 50 at  
19 the Pueblo Blvd intersection. Williams Creek flows from northwest to southeast and passes under  
20 the highway and under Pueblo Blvd. Wild Horse Dry Creek also flows from northwest to southeast  
21 and passes under the highway to the east of Pueblo Blvd. An unnamed tributary to Williams Creek  
22 also exists south of US 50 and crosses under Purcell Blvd in a narrow channelized ditch.

23 The McCulloch Blvd/US 50 intersection consists of formal landscaping in the two south quadrants  
24 of the intersection, which mark the gateway to Pueblo West. The landscaping consists of large beds  
25 of crushed red gravel, with clumps of shrubs and evergreen trees. The northern two quadrants of  
26 the intersection were not landscaped in the past, have little vegetation, and are dominated by prairie  
27 dog colonies.

28 Average annual precipitation in Pueblo County, from 1954 to 2004, was 11.8 inches (Western  
29 Regional Climate Center). Most of Pueblo County is currently recovering from a level D4  
30 (exceptional) drought, based on the US Drought Monitor classification system (USDA Drought  
31 Monitor, 2013). During the field surveys on April 1 and December 3, 2015, staff observed more  
32 robust vegetation in areas that were predominantly bare ground during the 2013 field surveys. This  
33 additional plant growth indicates that the region received higher precipitation and snow melt than  
34 the 2013 growing season and is slowly recovering.

35 Soils in the study area are a mosaic of Manvel silt loam on the plains, and Penrose-Minnequa and  
36 Penrose-rock outcrop complexes on the dissected drainages that have eroded through the  
37 underlying limestone and shale bedrock (Larsen et al., 1979). The erosion hazard is moderate in  
38 these soils. The Penrose-Minnequa complex occurs on shoulder slopes and on the side slopes of  
39 drainages and escarpments. These soils are very shallow to bedrock (usually only 10 to 12 inches  
40 deep) and have a high proportion of rock fragments in the limited loam and silt loam matrix.

#### 1 4.1.1 Vegetation

2 The study area is within the central shortgrass prairie of southeastern Colorado, in a region referred  
3 to as the Arkansas Valley Barrens. The Proposed Action associated with the westbound *US 50 West*  
4 *Wills Blvd to McCulloch Blvd EA* is located within CDOT's SGPI project area, but it is not applicable  
5 because transportation improvements would extend outside CDOT ROW.

6 Vegetation cover is typically sparse, growing in limited soils beneath a pavement of platy shale  
7 fragments. These conditions are characteristic of the geologic strata of the Niobrara Formation  
8 geology, including calcareous shale, limestone, and chalk layers, with clay and selenium components.  
9 Where the shale and chalk layers are exposed, they tend to form barrens with little soil development  
10 (Scott, 1964; Scott and Cobban, 1964).

11 Most of the vegetation present in the study area includes native shortgrass prairie grasses and  
12 wildflowers, native and non-native shrubs, and native and non-native trees. The primary native  
13 shortgrass prairie species found in the study area included blue grama (*Bouteloua gracilis*), buffalo  
14 grass (*Bouteloua dactyloides*), hoary false goldenaster (*Heterotheca canescens*), crested pricklypoppy  
15 (*Argemone polyanthemus*), ten-petal blazing star (*Mentzelia decapetala*), cowboy's delight (*Sphaeralcea*  
16 *coccinea*), purple groundcherry (*Quincula lobata*), vervain (*Glandularia bipinnatifida*), and zinnia (*Zinnia*  
17 *grandiflora*). Shrub and plant species adaptive to local sandy and droughty soil conditions include sand  
18 sagebrush (*Oligosporus filifolius*), sagebrush (*Artemisia* sp.), and fourwing saltbush (*Atriplex canescens*).  
19 Other characteristic shrub, sub-shrub, and cacti species include skunkbush (*Rhus aromatic* ssp.  
20 *pilosissima*), rubber rabbitbrush (*Ericameria nauseosa*), broom snakeweed (*Gutierrezia sarothrae*), yucca  
21 (*Yucca glauca*), plains pricklypear (*Opuntia polyacantha*), and other cacti. These plant and grass species  
22 occur sporadically along US 50 in the study area, with the greatest concentration within the divided  
23 eastbound and westbound lanes at US 50 and Pueblo Blvd.

24 FHU staff surveyed other landscaped tree species at McCulloch Blvd/US 50 and  
25 Purcell Blvd/US 50, including blue spruce (*Picea pungens*) trees, honey locust (*Gleditsia triacanthos*)  
26 trees, Rocky Mountain juniper (*Juniperus scopulorum*) trees, and pinyon pine (*Pinus edulis*) trees within  
27 the right-of-way (ROW) and Russian olive (*Elaeagnus angustifolia*) trees just outside the ROW.  
28 Otherwise, roadside disturbance and urban development have encroached and replaced much of the  
29 vegetation in proximity to US 50. The upland areas are sparsely vegetated, in contrast to the wetland  
30 and riparian vegetation within the Williams Creek and Wild Horse Dry Creek drainage channels.  
31 **Section 4.1.2** discusses non-native shrubs and weeds. **Section 4.1.7** discusses wetland vegetation,  
32 **Section 4.1.8** discusses SB 40 resources, and

33 The Williams Creek riparian area contains stands of Siberian elm (*Ulmus pumila*), golden currant  
34 (*Ribes aureum*), sandbar willow (*Salix interior*), narrowleaf cattail (*Typha angustifolia*), creeping bentgrass  
35 (*Agrostis stolonifera*), small spikerush (*Eleocharis minima*), and annual sunflowers (*Helianthus annuus*). The  
36 Wild Horse Dry Creek riparian area contains stands of tamarisk, creeping bentgrass, small spikerush,  
37 Nebraska sedge (*Carex nebrascensis*), perennial pepperweed (*Lepidium latifolium*), hoary cress (*Cardaria*  
38 *draba*), and prince's plume (*Stanleya pinnata*). These riparian areas are confined within the narrow creek  
39 channels, 10 to 12 feet below the surrounding uplands. **Section 4.1.7** and the *US 50 West Purcell Blvd*  
40 *to Wills Blvd EA Wetland Delineation Technical Report* (FHU, 2014b) include more information on  
41 wetlands in the study area.

42 Overall, the vegetation in the study area was previously stressed by a prolonged drought but is  
43 currently benefiting from increased precipitation. The study area has also been modified by roadside

1 earthwork, underground utility lines, the BNSF railroad crossing, and invasive weeds and shrubs. A  
2 network of “social trails” in proximity to the Wild Horse Dry Creek drainage that extends under the  
3 US 50 bridges is causing erosion and soil compaction along Wild Horse Dry Creek. The vegetation  
4 growth in the study area appears to be stunted, and percent cover ranges from 0 to 15 percent.  
5 Extensive areas of bare soil and weed infestation are present, especially along both sides of US 50  
6 within the ROW area. See **Section 4.1.2** for a discussion of non-native plants.

#### 7 **4.1.2 Noxious Weeds**

8 Noxious weeds are non-native plants that establish themselves in disturbed soils and can quickly  
9 spread and displace native vegetation and habitat. Federal Executive Order 13112, the Colorado  
10 Noxious Weed Act (Title 35, Article 5.5), Colorado Executive Order D-006-99, and Colorado  
11 Regulations 8-CCR-1206-2 mandate the control of certain noxious weeds.

12 According to the Colorado Department of Agriculture (CDA), noxious weeds are plants that reduce  
13 agricultural productivity, lower real estate values, endanger human health and well-being, and  
14 damage scenic values (CDA, 2013). The CDA has classified noxious weed species into three lists (A,  
15 B, and C) based on management requirements, as described below:

- 16 ■ Species on the Colorado State A list are the most invasive species found in Colorado and are  
17 targeted for eradication, when present.
- 18 ■ Species on the Colorado State B list are targeted for control, rather than eradication.
- 19 ■ Management of species on the Colorado State C list is not mandated; however, the state may  
20 provide funding to support local control efforts if local governing entities choose to control  
21 these species.

22 Before conducting the field surveys, FHU staff reviewed the previously mapped noxious weeds in  
23 the *US 50 West Purcell Blvd to Wills Blvd EA Biological Resources Report* (FHU, 2014a), CDOT’s Online  
24 Transportation Information System (OTIS), and the CDOT Noxious Weed Viewer, an online  
25 noxious weed mapping tool (CDOT, 2013), for information about noxious weeds within the study  
26 area. The Noxious Weed Viewer identified that CDOT surveyed the area for noxious weeds in 2009,  
27 2010, and 2012. The project team also inspected the study area for species included on the CDA  
28 Noxious Weed List and the Pueblo County Target Species List (Pueblo County, 2013). **Table 1** and  
29 **Figure 3** through **Figure 7** present the noxious weeds identified within the study area using  
30 CDOT’s Noxious Weed Viewer and during subsequent field surveys.

31 In summary, FHU staff observed field bindweed (*Convolvulus arvensis*), downy brome (*Bromus*  
32 *tectorum*), and redstem filaree (*Erodium cicutarium*) throughout the open, native seeding areas in the  
33 study area. The other species were identified in or adjacent to Williams Creek, the unnamed Williams  
34 Creek tributary, and Wild Horse Dry Creek (**Figure 3** through **Figure 7**).

35 The common occurrence of broom snakeweed (*Gutierrezia sarothrae*) and kochia (*Bassia* spp.)  
36 indicates that the vegetation in the study area is in a less than optimal state. These two species,  
37 although not listed on the Colorado Noxious Weed Act List (CDA, 2003), are common along  
38 roadsides and areas disturbed by construction. These weeds are introduced species that are known  
39 to out-compete native flora.

1 **Table 1. Noxious Weeds in the Study Area**

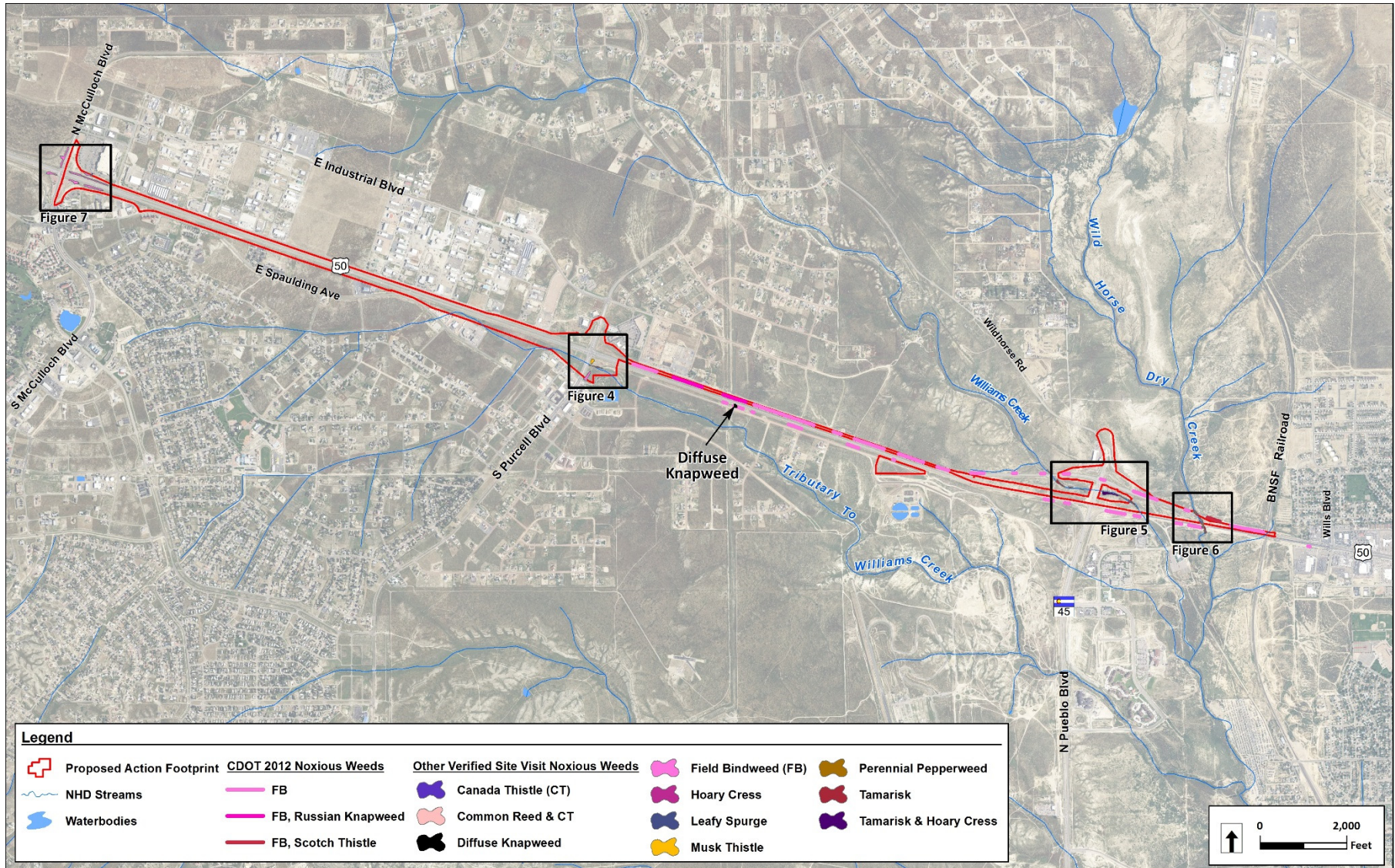
Common Name	Scientific Name	CDA: List A, B, C, or Watch List	CDOT OTIS - Noxious Weed Viewer	Pueblo County - Targeted Species	Field Surveys	Occurrence
Bull thistle	<i>Cirsium vulgare</i>	B			X	Sporadic - drainages
Canada thistle	<i>Cirsium arvense</i>	B		X	X	Dense - Williams Creek
Common reed	<i>Phragmites australis</i>	Watch List			X	Patch in tributary to Williams Creek at Purcell Blvd
Downy brome	<i>Bromus tectorum</i>	C			X	Sporadic
Field bindweed	<i>Convolvulus arvensis</i>	C	X		X	Common
Hoary cress	<i>Cardaria draba</i>	B		X	X	Patches - Wild Horse Dry Creek
Leafy spurge	<i>Euphorbia esula</i>	B		X	X	Patches - Wild Horse Dry Creek
Perennial pepperweed	<i>Lepidium latifolium</i>	B		X	X	Patches - Wild Horse Dry Creek
Redstem filaree	<i>Erodium cicutarium</i>	C			X	Common
Russian knapweed	<i>Acroptilon repens</i>	B		X		Sporadic
Russian olive	<i>Elaeagnus angustifolia</i>	B		X	X	Single tree - Williams Creek
Salt cedar/ tamarisk	<i>Tamarix chinensis</i>	B		X	X	Common in drainages
Scotch thistle	<i>Onopordoum acanthium</i>	B	X	X	X	Sporadic

Source: CDA, 2013

2



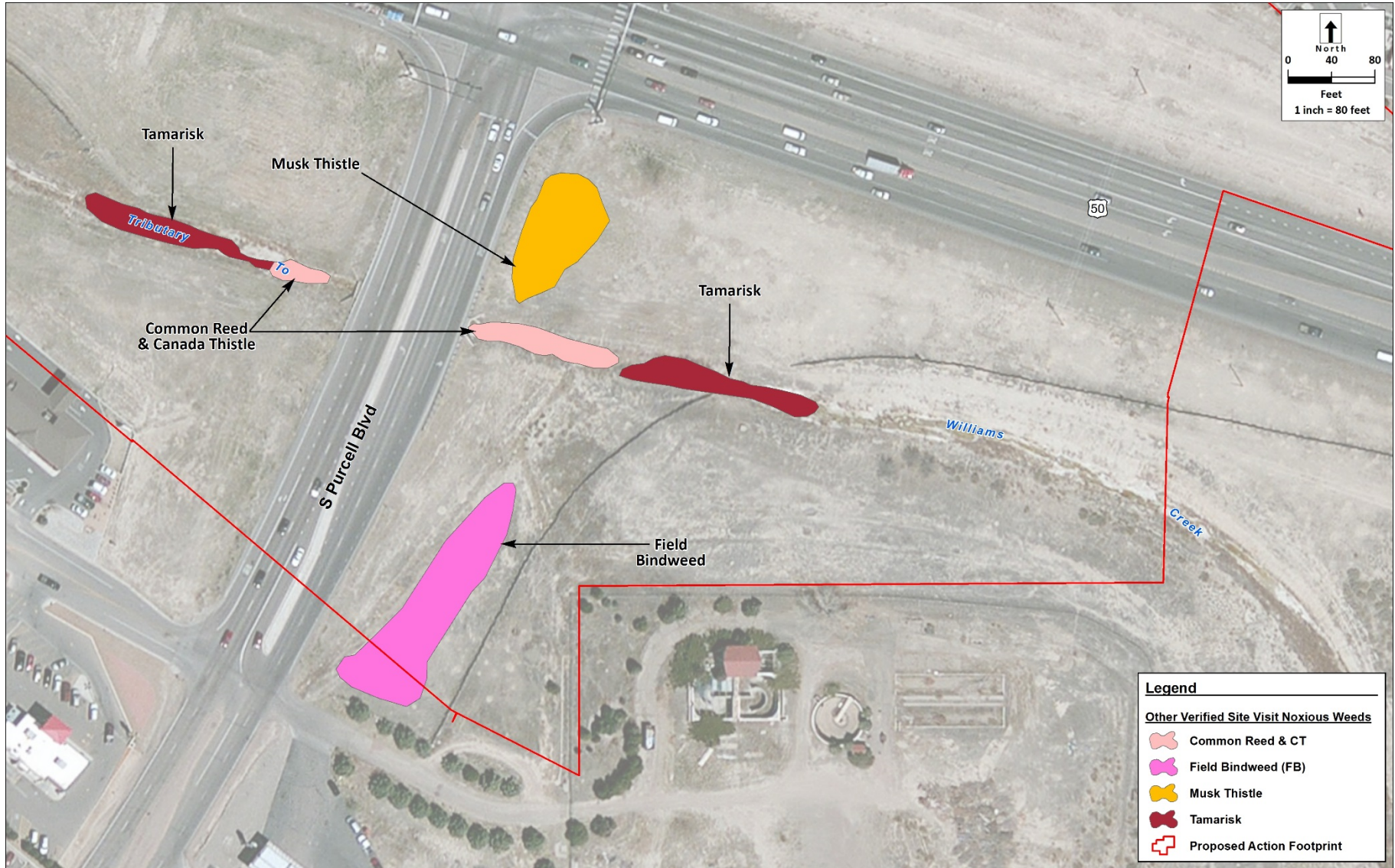
1 Figure 3. Noxious Weeds Within the Study Area



2



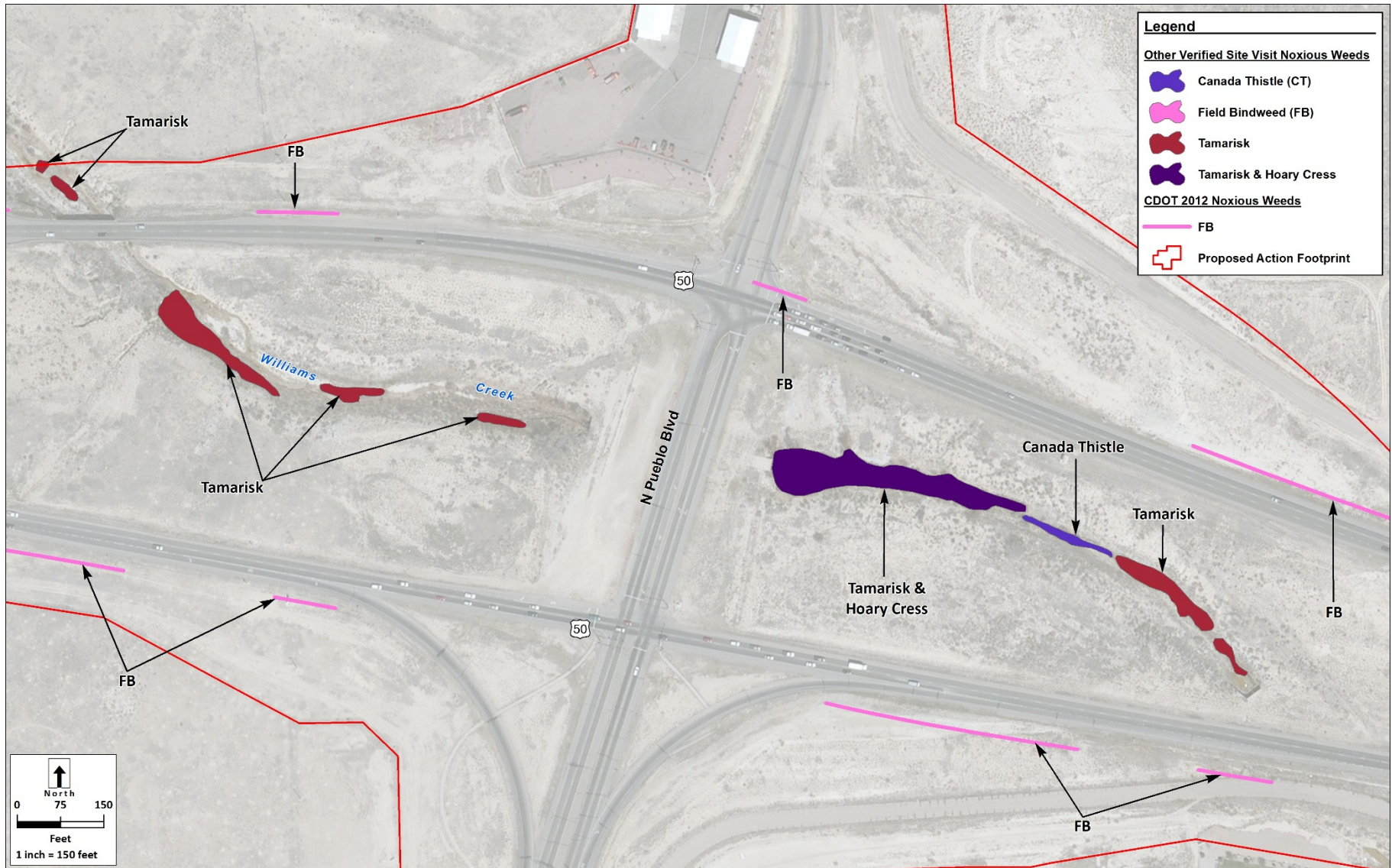
1 **Figure 4. Noxious Weeds Within the Study Area – Purcell Boulevard/US 50 Boulevard Intersection**



2

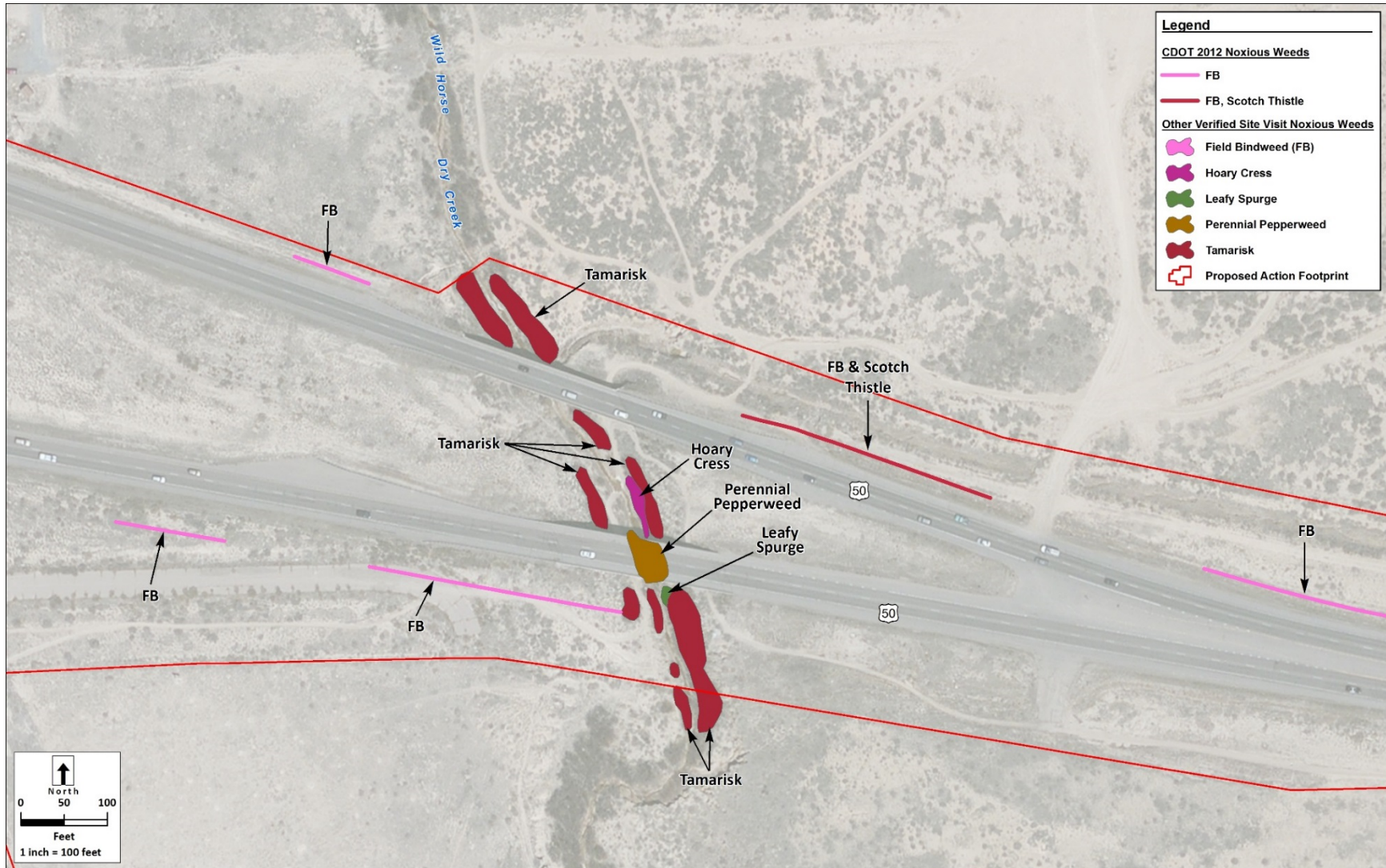


1 **Figure 5. Noxious Weeds Within the Study Area – Pueblo Boulevard/US 50 Intersection**





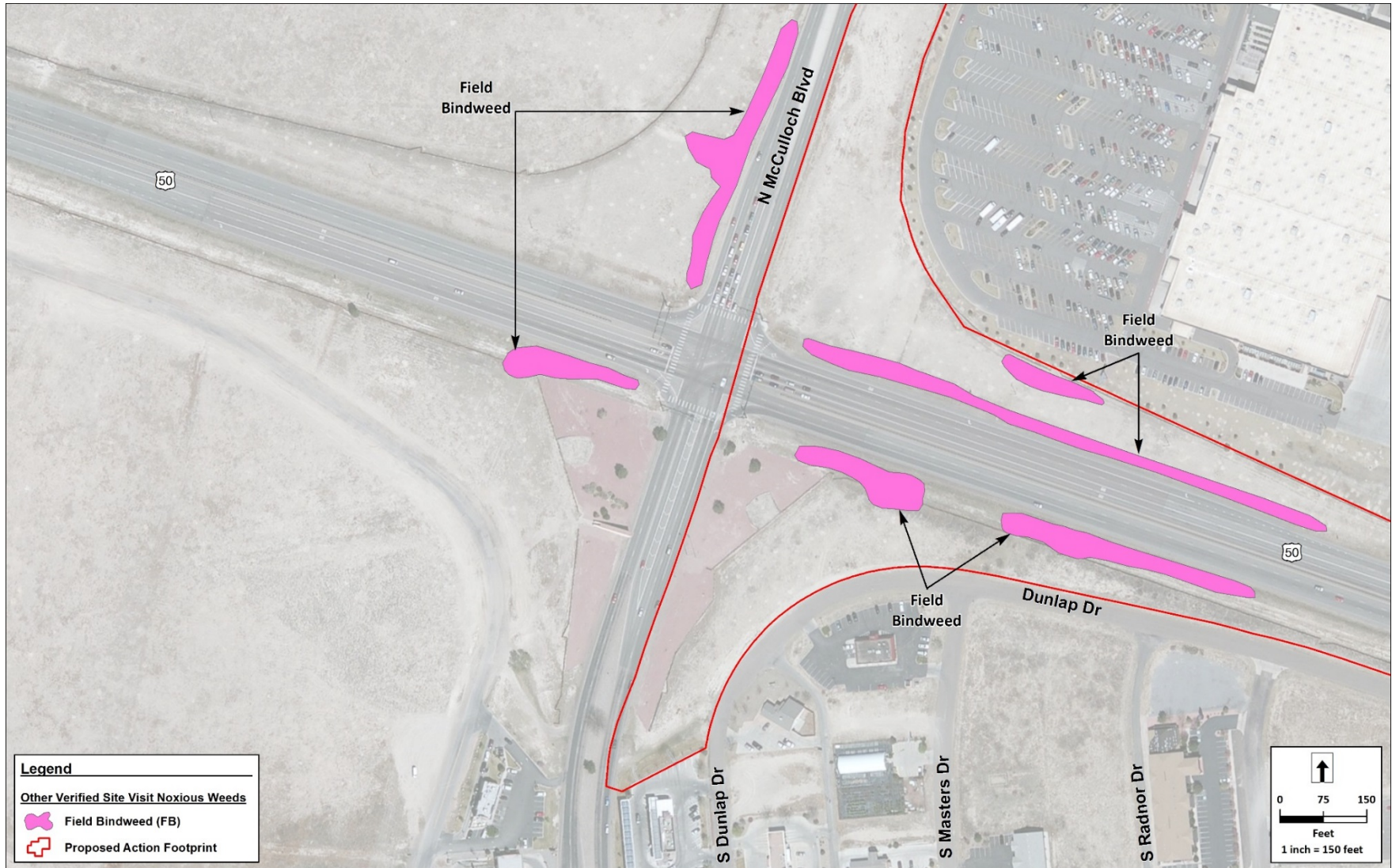
1 **Figure 6. Noxious Weeds Within the Study Area – Wild Horse Dry Creek**



2



1 **Figure 7. Noxious Weeds Within the Study Area – McCulloch Boulevard/ US 50 Intersection**



2  
3

1 **4.1.3 Fish and Wildlife**

2 This section discusses the fish and wildlife species known to occupy the study area or that may be  
 3 present in the study area based on the presence of suitable habitat. **Table 2** includes information  
 4 gathered from field surveys on general habitat and wildlife observations. **Section 4.1.6** discusses  
 5 migratory bird observations from the field surveys.

6 **Table 2. Fish and Wildlife Field Survey Observations**

Common Name	Scientific Name	Activity
Six-lined racerunners	<i>Cnemidophorus sexlineatus</i>	Observed in the uplands above Williams Creek
Desert cottontail	<i>Sylvilagus audubonii</i>	Individuals and scat observed in the Williams Creek drainage area
Coyote	<i>Canis latrans</i>	Scat and tracks observed in the Williams Creek drainage area
Plains killifish	<i>Fundulus zebrinus</i>	Observed in the Williams Creek and Wild Horse Dry Creek channels and pools in 2013
Fathead minnow	<i>Pimephales promelas</i>	Observed in the Williams Creek channel and pools in 2013
Black-tailed prairie dogs	<i>Cynomys ludovicianus</i>	See <b>Section 4.1.4, Special Status Species</b> , of this report for information on black-tailed prairie dogs

7 Overall, ROW disturbances, such as mowing and utility installation, adjacent residential and  
 8 commercial development, off-road vehicle activities near US 50/Pueblo Blvd and the surrounding  
 9 areas, and drought conditions have highly modified wildlife habitat in the study area.

10 **4.1.4 Special Status Species**

11 Special status species include federally-listed and state-listed species, federal candidate species, or  
 12 state species of special concern. The Endangered Species Act (ESA) (16 United States Code  
 13 [USC] 1531 et seq.) protects federally-listed threatened and endangered species. Under Section 7 of  
 14 the ESA, a consultation and clearance process with USFWS is required if project activities will affect  
 15 a federally-listed species or its habitat. State threatened and endangered species are protected under  
 16 the Colorado Nongame, Endangered, and Threatened Species Conservation Act (CRS 33-2-101 to  
 17 108 [Repealed and reenacted by Laws 1984, S.B.78, § 1, eff. Jan. 1, 1985]). State species of special  
 18 concern are not protected by statute; however, CDOT is committed to their conservation.

19 FHU staff accessed the USFWS Information, Planning, and Conservation System (IPaC) on May 30,  
 20 2013 (FHU, 2014a), to identify any federally-listed species that could be present in Pueblo County  
 21 and the study area. FHU staff also reviewed information from CPW to identify any state-listed  
 22 species that could be in the study area and could potentially be affected by the project (FHU, 2014a).  
 23 As previously discussed, FHU staff conducted multiple biological field surveys as part of this  
 24 project, as described in **Section 3.3**. All field survey observations were from public ROW because  
 25 there was no access to private properties surrounding the project. **Table 3** lists special status species  
 26 located in Pueblo County and potentially within the study area and identifies the assessment results.

1 Table 3. Results of Special Status Species Assessment

Name	Status	Habitat Description	Assessment Results
<b>Mammals</b>			
Black-footed ferret† ( <i>Mustela nigripes</i> )	FE, EXPN, SE	An experimental population has been introduced on the Walker Ranch, to the west of the project and north of US 50. However, the project is located within the 2007 block-clearance zone for the black-footed ferret.	No impacts are expected because the project is located within the block-clearance zone for the black-footed ferret, and the nearby reintroduced population is considered experimental.
Black-tailed prairie dog ( <i>Cynomys ludovicianus</i> )	SC*	Form large colonies or “towns” in shortgrass or mixed prairie.	Habitat is present within the study area.
Botta’s pocket gopher ( <i>Thomomys bottae</i> )	SC	Distinctive plugged mounds primarily found in well-developed soils of warm valleys in southern Colorado.	The study area is out of the range for Botta’s pocket gopher.
Canada lynx ( <i>Lynx canadensis</i> )	FT, SE	Prefer northern coniferous forests.	No suitable habitat is present; therefore, no impacts are expected.
North American wolverine ( <i>Gulo luscus</i> )	PT, SE	Restricted to high elevation habitat with cold and snowy conditions.	No suitable habitat is present; therefore, no impacts are expected.
Northern pocket gopher ( <i>Thomomys talpoides</i> )	SC	Distinctive plugged mounds; deep, sandy soils of the plains to shallow gravel in mountainous areas.	The study area is out of the range for northern pocket gopher.
Northern river otter ( <i>Lontra canadensis</i> )	ST	Probably once occurred in major streams statewide in Colorado, although apparently have never been abundant. Disappeared from Colorado by the early part of this century. In the 1970s, CPW began to restore populations to several drainages, including the Upper Colorado, the Dolores, and the upper South Platte rivers.	No suitable habitat is present; therefore, no impacts are expected.
Swift fox ( <i>Vulpes velox</i> )	SC	Inhabit grasslands, from shortgrass to midgrass prairies, over most of the Great Plains.	Potential habitat, but presence is unlikely due to the lack of large populations of prairie dogs in the study area. No indication of swift fox was observed during the June 2013, April 2015, or December 2015 site visits. No impacts are expected.
Townsend’s big-eared bat subsp. ( <i>Plecotus townsendii pallescens</i> )	SC	Occupy semidesert shrublands, piñon-juniper woodlands, and open montane forests. Found throughout Colorado, except on the eastern plains. Distribution seems to be determined by availability of roosts, such as caves, mines, tunnels, crevices, and masonry structures with suitable temperatures, making the conservation of suitable roosts essential to the management of this species.	No suitable habitat is present; therefore, no impacts are expected.

Name	Status	Habitat Description	Assessment Results
<b>Birds</b>			
American Peregrine Falcon <i>(Falco peregrinus anatum)</i>	SC	Nest on cliffs and forages over adjacent coniferous and riparian forests. Migrants occur mostly around water bodies but may also be seen in grasslands and agricultural areas.	No suitable habitat is present; therefore, no impacts are expected.
Bald Eagle <i>(Haliaeetus leucocephalus)</i>	ST*	Occur near reservoirs and rivers. May also occur locally in semideserts and grasslands, especially near prairie dog towns, in winter.	Presence is unlikely due to the absence of large water bodies and minimal prairie dog activity in the study area. No Bald Eagle activity or nests were observed during the June and July 2013 field surveys or during the 2015 surveys. No impacts are expected.
Greater Sandhill Crane <i>(Grus canadensis)</i>	SC	When breeding, found in parks with grassy hummocks and watercourses, beaver ponds, and natural ponds lined with willows or aspens. Nest in wetlands and shallow marshes. Feed in mudflats around reservoirs, moist meadows, and agricultural areas. During migration and winter, regularly feed in dry fields, returning to water at night.	No suitable habitat is present; therefore, no impacts are expected.
Interior Least Tern <i>(Sternula antillarum)</i>	SE**	Known to breed in the southeastern portion of Colorado and generally in the La Junta-Lamar area. Prefer to nest on sandy or pebbly beaches around lakes and reservoirs.	No suitable habitat is present; therefore, no impacts are expected.
Lesser Prairie-chicken <i>(Tympnanuchus pallidicinctus)</i>	ST*	Occupy sandsage and sandsage-bluestem grasslands. May also occur at times in agricultural areas, especially in winter.	No suitable habitat is present; therefore, no impacts are expected.
Long-billed Curlew <i>(Numenius americanus)</i>	SC*	Found in shortgrass grasslands and sometimes in wheatfields or fallow fields. Nest close to standing water.	No suitable habitat is present; therefore, no impacts are expected.
Mexican Spotted Owl <i>(Strix occidentalis lucida)</i>	FT, ST	Nest in steep canyons with dense stands of large ponderosa pine or piñon-juniper with Douglas-fir, and in mature to old-growth mixed-conifer forests with high canopy closure and open understory.	No suitable habitat is present; therefore, no impacts are expected.
Mountain Plover <i>(Charadrius montanus)</i>	SC*	Rare spring and fall migrant on eastern plains (primarily fall). Found in foothills and mountains, migrant to western valleys, eastern plains, and mountain parks. Breeding areas exist at the Pawnee National Grasslands. Inhabit prairie grasslands, arid plains, and fields.	Presence unlikely due to lack of suitable habitat. No impacts are expected.



Name	Status	Habitat Description	Assessment Results
Piping Plover ( <i>Charadrius melodus</i> )	ST**	Occupy eastern part of Colorado in the Arkansas and South Platte River drainages as spring migrants. Arrive around the first of April and pass through by the end of May. Prefer to nest on sandy lakeshore beaches, sandbars within riverbeds, or even sandy wetland pastures.	No suitable habitat is present; therefore, no impacts are expected.
Western Burrowing Owl ( <i>Athene cunicularia hypugaea</i> )	ST*	In Colorado, migratory species found almost anywhere there are prairie dog burrows from late March or early April through October. May occupy abandoned prairie dog colonies.	No survey for Burrowing Owls was conducted; however, suitable habitat is present in the prairie dog colonies located in and adjacent to the study area.
Western Snowy Plover ( <i>Charadrius alexandrinus nivosus</i> )	SC	Within the Central Shortgrass Prairie in Colorado, breed on shores of reservoirs near the Arkansas River between La Junta and Lamar. Arrive in mid-April. Most leave Colorado by the end of September.	No suitable habitat is present; therefore, no impacts are expected.
<b>Fish/Reptiles/Amphibians</b>			
Arkansas darter ( <i>Etheostoma cragini</i> )	FC**	Found in the Upper Arkansas, Fountain Creek, Horse Creek, Upper Arkansas at John Martin, Big Sandy Creek, Rush Creek, Black Squirrel Creek, and Chico Creek drainages. Distribution has not changed significantly based on historic data comparisons, particularly since 1979. Colorado populations persist in large, deep pools during late summer low-water periods when streams may become intermittent. Prefers shallow, clear, sandy streams with spring-fed pools and abundant rooted aquatic vegetation.	No suitable habitat is present; therefore, no impacts are expected. No Arkansas darters present based on CDOT samples collected in June 2013.
Greenback cutthroat trout ( <i>Oncorhynchus clarki stomias</i> )	FT	Require mountain stream habitat; restricted to headwaters within the Arkansas River system.	No suitable habitat is present; therefore, no impacts are expected.
Massasauga ( <i>Sistrurus catenatus</i> )	SC*	Found in southeastern Colorado at elevations below about 5,500 feet and in dry plains grassland and sandhill areas. Attracted to sandy soils supporting abundant rodent and lizard populations; hibernate singly in rodent burrows, often in firm, loamy soils adjacent to sandy areas used for feeding.	Suitable habitat is present; however, no individuals were observed during the 2013 or 2015 field surveys.

Name	Status	Habitat Description	Assessment Results
Northern leopard frog ( <i>Rana pipiens</i> )	SC**	<p>Nearly statewide in mountains and lowlands, but scarce or absent in most of southeastern Colorado and the Republican River drainage in northeastern Colorado. Locally common, but now rare or extirpated in many areas, particularly in the mountains. Wet meadows and the banks and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches. May roam far from water during wet, mild weather.</p> <p>Breed in shallow, quiet areas of permanent water bodies, in beaver ponds, and in seasonally flooded areas adjacent to or contiguous with permanent pools or streams. The breeding season begins in March in lowland areas. The northern leopard frog is sympatric with the plains leopard frog in Pueblo County.</p>	Potential for suitable habitat; however, no individuals were observed during the 2013 or 2015 field surveys.
Plains leopard frog ( <i>Rana blairi</i> )	SC	Found in Great Plains portion of the Arkansas River drainage in southeastern Colorado. May occur in the vicinity of streams, natural and artificial ponds, reservoirs, creek pools, irrigation ditches, and other bodies of water in plains grassland, sandhills, stream valleys, and canyon bottoms.	Suitable habitat is present; however, no individuals were observed during the 2013 or 2015 field surveys.
Texas horned lizard ( <i>Phrynosoma cornutum</i> )	SC*	Occupy southeastern Colorado, almost entirely south of the Arkansas River. Fairly common in plains grassland, particularly where there are large patches of bare ground, but generally absent from areas that are barren due to extensive plowing.	No suitable habitat is present; therefore, no impacts are expected.
Triploid Colorado checkered whiptail ( <i>Aspidoscelis neotesselata</i> )	SC	Endemic to southeastern Colorado below 7,000 feet. Inhabit hillsides, arroyos, and canyons associated with the Arkansas River Valley. Roadsides, shrubby areas, and juniper-grass associations. Eggs hatch in late August to early October.	Suitable habitat present; June and July 2013 site visits identified six individuals that were photographed along the terraces above Williams Creek.

FE = federally endangered, FT = federally threatened, FC = federal candidate, EXPN = experimental population

SE = state endangered, ST = state threatened, SC = state species of special concern

†Experimental populations of listed species do not possess the same level of protections of non-experimental populations of threatened and endangered species.

\* Identified as Primary/Target Species under the Shortgrass Prairie Initiative

\*\* Identified as On-site Mitigation (Best Management Practices [BMPs]) Species under the Shortgrass Prairie Initiative

Sources: USFWS, 2013 – Black-Footed Ferret Block Clearance

NDIS, 2013

CPW & CDOT, 2013



### 1 *Black-tailed Prairie Dog*

2 The black-tailed prairie dog is a state species of special concern. FHU staff observed several prairie  
3 dog colonies within the study area (**Figure 8**). During the initial field survey (June 3, 2013), FHU  
4 staff observed two individuals in the southeast corner of the US 50/Purcell Blvd intersection.  
5 During subsequent field visits in 2013 and 2015, FHU staff observed sporadic prairie dog activity  
6 north of US 50 and outside the project footprint:

- 7     ■ Two individuals were observed in a colony located north of US 50 between Purcell Blvd and  
8     Pueblo Blvd during one of the field surveys.
- 9     ■ Two individuals were also observed on the north side of US 50 during other site visits.
- 10    ■ Multiple individuals were observed on the north side of US 50, near the large waterline  
11    crossing during the 2015 field surveys.

### 12 *Western Burrowing Owl*

13 The Western Burrowing Owl is considered a state threatened species. Western Burrowing Owls  
14 inhabit grasslands in or near prairie dog towns and are a summer resident in eastern Colorado.  
15 Breeding birds are known to nest in abandoned prairie dog holes and usually use two prairie dog  
16 holes during the breeding season (NDIS, 2013). FHU staff observed no Western Burrowing Owls  
17 during the field surveys; however, suitable habitat is present in the study area.

### 18 *Triploid Colorado Checkered Whiptail*

19 During the June and July 2013 field surveys, FHU staff observed several triploid Colorado  
20 checkered whiptails, with most observations made in the Williams Creek drainage area. FHU staff  
21 also observed a triploid Colorado checkered whiptail along the north side of US 50, within the  
22 ROW, between Purcell Blvd and Pueblo Blvd in an area outside the project footprint. **Photo 20** in  
23 **Appendix A** provides photographic evidence of the presence of the triploid Colorado checkered  
24 whiptail. **Photo 21** in **Appendix A** provides photographic evidence of the six-lined racerunner,  
25 another lizard, which also occurred frequently in the project area. The CDOT Region 2 biologist  
26 confirmed the presence of the triploid Colorado checkered whiptail and took pictures of the triploid  
27 Colorado checkered whiptail.

### 28 *Massasauga Rattlesnake*

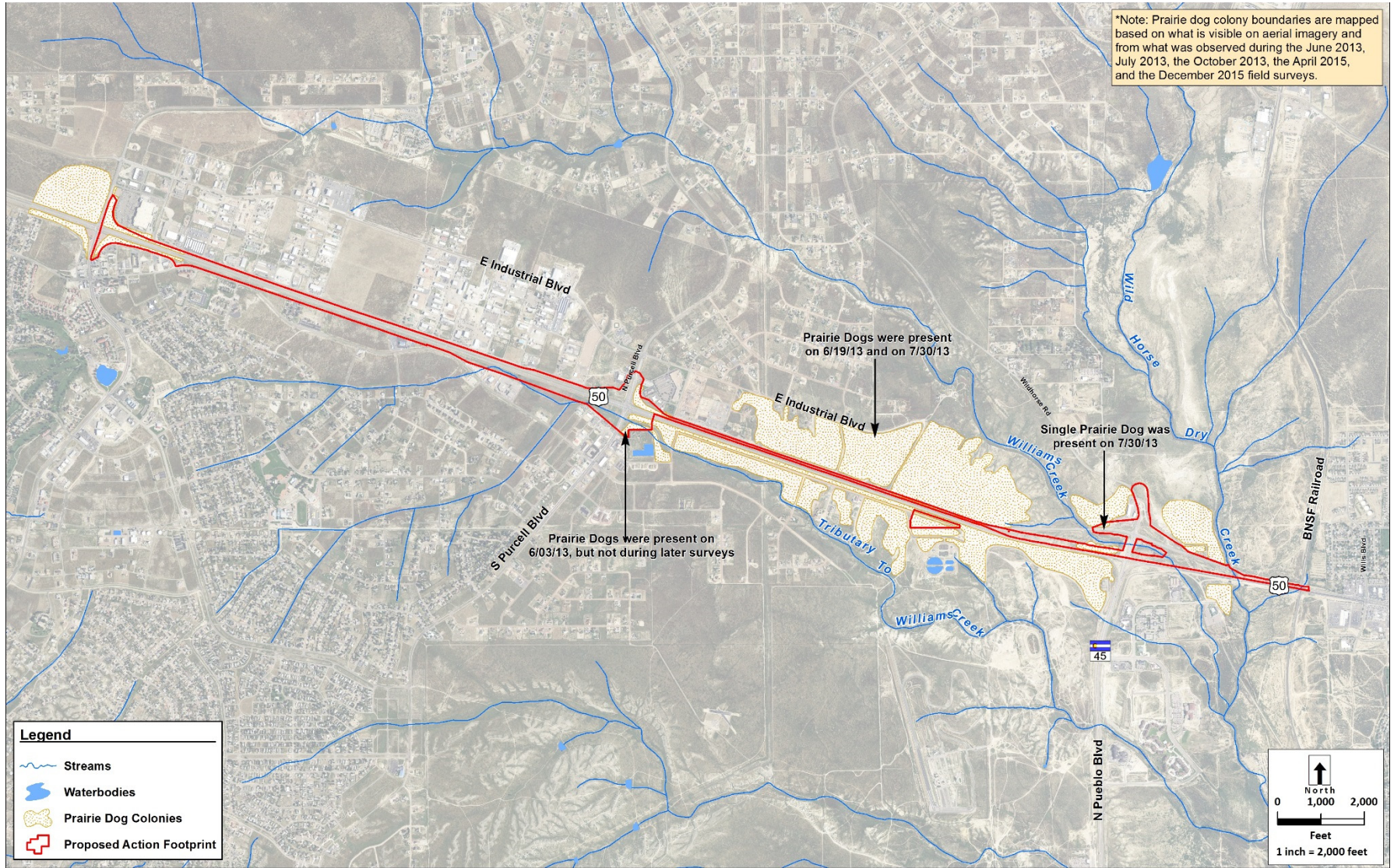
29 The massasauga (*Sistrurus catenatus*) is a state species of special concern. No individuals were  
30 observed during the 2013 field surveys; however, suitable habitat is present.

### 31 *Plains Leopard Frog and Northern Leopard Frog*

32 Suitable habitat for the plains leopard frog (*Rana blairi*) is present along Wild Horse Dry Creek and  
33 Williams Creek. Also, potential suitable habitat is present for the northern leopard frog (*Rana*  
34 *pipiens*), a state species of special concern, along Wild Horse Dry Creek and Williams Creek. FHU  
35 staff observed no individuals (plains leopard frog or northern leopard frog) during the 2013 and  
36 2015 field surveys.



1 **Figure 8. Prairie Dog Colonies Within the Study Area – Purcell Boulevard to Wills Boulevard**



2



1 **4.1.5 Rare Plants**

2 FHU staff conducted a rare plant survey to identify the presence of five globally imperiled rare  
 3 plants identified in the SGPI Programmatic BA/BO:

- 4 ■ Arkansas River feverfew (*Bolophyta tetraeuris*) – Primary/Target Species
- 5 ■ Arkansas Valley evening primrose (*Oenothera harringtonii*) – On-Site Mitigation (BMPs)  
 6 Species
- 7 ■ Golden blazing star (*Mentzelia chrysantha*) – On-Site Mitigation (BMPs) Species
- 8 ■ Pueblo goldenweed (*Oonopsis puebloensis*) – Primary/Target Species
- 9 ■ Round-leaf four-O'clock (*Oxybaphus rotundifolia*) – Primary/Target Species

10 FHU staff also conducted surveys for dwarf milkweed (*Asclepias uncialis*) to identify the presence of  
 11 this species because the Colorado Natural Heritage Program lists this plant as globally impaired.

12 These plants are all associated with the Arkansas Valley and have been found in Pueblo County.  
 13 **Table 4** presents the status and habitat in which these rare plants can be found. None of these rare  
 14 plants were found during the surveys in 2013, 2014, or 2015.

15 **Table 4. Results of Rare Plant Assessment**

Name	Status	Habitat Description
Arkansas River feverfew ( <i>Bolophyta tetraeuris</i> )	Rare Plant G3 S3	Tops of cliffs and bluffs of various rock types; in open piñon-juniper stands at elevations ranging from 4,800 to 5,600 feet.
Arkansas Valley evening primrose ( <i>Oenothera harringtonii</i> )	Rare Plant G2 G3 S2 S3	Found on compacted silty clays to looser rocky and sandy soils in open grasslands at elevations ranging from 4,700 to 6,100 feet.
Golden blazing star ( <i>Mentzelia chrysantha</i> )	Rare Plant G2 S2	Found on barren slopes of limestone, shale, or clay at elevations from 5,120 to 5,700 feet.
Pueblo goldenweed ( <i>Oonopsis puebloensis</i> )	Rare Plant G2 S2	Barren shale outcrops of the Smoky Hill Member of the Niobrara Formation in sparse shrublands or piñon-juniper woodlands at elevations ranging from 4,800 to 5,500 feet.
Round-leaf four-O'clock ( <i>Oxybaphus rotundifolia</i> )	Rare Plant G2 S2	Restricted to barren shale outcrops of the Smoky Hill Member of the Niobrara Formation in sparse shrublands or woodlands at elevations ranging from 4,800 to 5,600 feet.
Dwarf milkweed ( <i>Asclepias uncialis</i> )	Rare Plant G3 G4 S2	Found in shortgrass prairie, often on sandstone-derived soils and gravelly or rocky slopes at elevations ranging from 4,000 to 6,500 feet.

G2: Globally imperiled species. At high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors (NatureServe, 2013).

G3: Globally vulnerable species. At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors (NatureServe, 2013).

G4: Apparently secure globally. At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors (NatureServe, 2013).

S2: Subnational/or State imperiled (NatureServe, 2013)

S3: Subnational/or State vulnerable (NatureServe, 2013)

1 As part of the rare plant survey, FHU staff collected samples of two plants that appeared similar to  
 2 the Pueblo goldenweed and golden blazing star and took them to the Denver Botanic Garden  
 3 Herbarium and the Colorado Natural Heritage Program for assistance in identifying the plants. A  
 4 botanist from the Denver Botanic Gardens (Pam Regensberg) assisted with the identification of the  
 5 plants collected from the study area. It was determined that one of the plants from the study area  
 6 was the leafy false goldenweed (*Oonopsis foliosa*) and the other plant was the ten petal blazing  
 7 star/evening blazing star (*Mentzelia decapetala*), neither of which are considered rare plants. Based on  
 8 the field survey, no rare plants were identified within the study area.

9 In July 2013, botanists from the Denver Botanic Gardens also conducted a rare plant survey in the  
 10 area of US 50/Pueblo Blvd. According to Pam Regensberg (pers. comm.) with the Denver Botanic  
 11 Gardens, no rare plants were identified during the independent survey conducted within the  
 12 US 50/Pueblo Blvd area of the Proposed Action footprint for the *US 50 West Wills Blvd to McCulloch*  
 13 *Blvd EA*.

14 **4.1.6 Migratory Birds and Raptors**

15 The Migratory Bird Treaty Act (MBTA) (16 USC §§ 703-712) protects migratory birds, including  
 16 raptors, as well as the eggs and active nests of migratory birds. The MBTA prohibits activities that  
 17 may harm or harass migratory birds during the nesting and breeding season, including the removal  
 18 of active nests, which could result in the loss of eggs or young.

19 FHU staff inspected the study area for evidence of migratory bird activity, including nesting activity,  
 20 during the field surveys conducted in June/July 2013 and April 2015. The areas surveyed for  
 21 migratory bird nests and activity include the area under the bridge structure that spans Wild Horse  
 22 Dry Creek, the culvert at Williams Creek, and the culvert at the Williams Creek tributary near  
 23 US 50/Purcell Blvd. All field survey observations were from public ROW because there was no  
 24 access to private properties surrounding the project. **Table 5** lists the species nests and activity  
 25 identified during the field surveys. **Figure 9** shows the locations of the observed migratory bird  
 26 nests.

27 **Table 5. Migratory Bird Field Survey Observations**

Migratory Bird Common Name	Migratory Bird Species Name	Migratory Bird Nest Activity
Black-billed Magpie	<i>Pica hudsonia</i>	Active nest; confirmed presence of adult breeding pair at nest site.
Black-billed Magpie	<i>Pica hudsonia</i>	Inactive nest, breeding pair had secondary site they were using in 2013.
Gambel's Quail	<i>Callipepla gambelii</i>	Observed a few adults flying from a rubber rabbitbrush thicket at the corner of Dunlap Drive/Radnor Drive.
Western Kingbird	<i>Tyrannus verticalis</i>	Active nest; confirmed presence of adult breeding pair at nest site.
Cliff Swallows (Multiple Nests)	<i>Petrochelidon pyrrhonota</i>	Active nests; confirmed presence of multiple Cliff Swallows flying around feeding on insects.
Red-winged Blackbirds (Multiple Nests)	<i>Agelaius phoeniceus</i>	Active nesting area; breeding pairs actively calling and flying around the cattail portion of the Williams Creek wetlands.

28



Figure 9. Migratory Bird Nests Within the Study Area





1 **4.1.7 Wetland Resources**

2 In 1977, the United States Congress passed the Clean Water Act (CWA) to protect the quality of  
 3 WUS, including adjacent wetlands. Section 404 of the CWA defines waters of the US as all  
 4 traditional navigable waters and their tributaries, all interstate waters and their tributaries, all  
 5 wetlands adjacent to these waters, and all impoundments of these waters. The United States Army  
 6 Corps of Engineers (USACE) Regulatory Program administers and the United States Environmental  
 7 Protection Agency enforces Section 404 of the CWA.

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

13 FHU staff conducted a wetland delineation on June 3, 2013, and on April 1, 2015, following the  
 14 most current guidelines included in *Regional Supplement to the Corps of Engineers Wetland Delineation*  
 15 *Manual: Great Plains Region* (Version 2.0) (USACE, 2010). **Table 6** summarizes the wetlands  
 16 identified in the study area. More detailed information, such as the wetland characteristics  
 17 (hydrology, soils, and vegetation), is included in the *US 50 West Purcell Blvd to Wills Blvd EA Wetland*  
 18 *Delineation Technical Report* (FHU, 2014b) and in *Appendix A07, Wetland Delineation Technical Report* of  
 19 this EA. **Appendix A** includes site photographs.

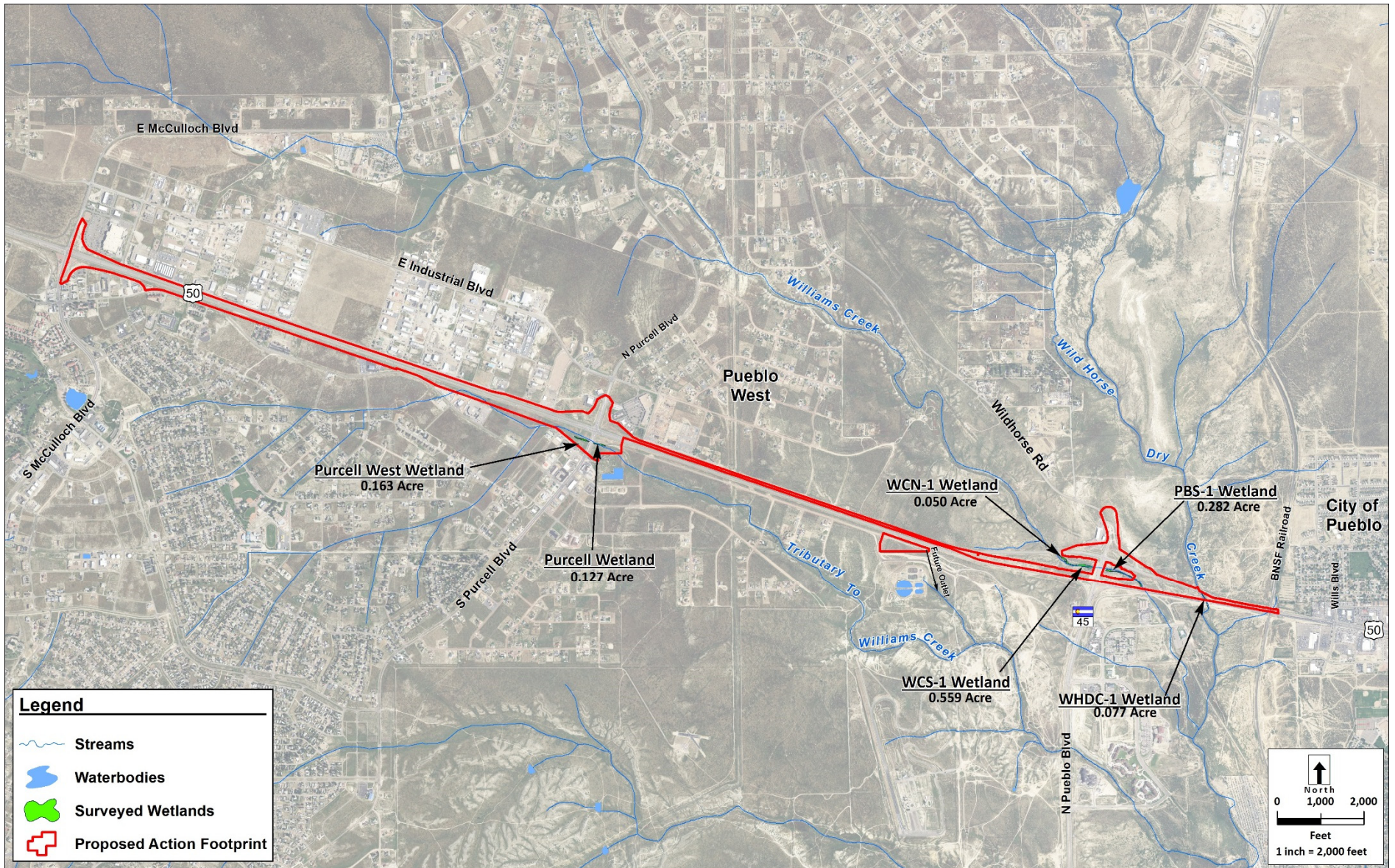
20 The study area contains six wetlands associated with Wild Horse Dry Creek, Williams Creek, and an  
 21 unnamed tributary to Williams Creek (Purcell Wetland, Purcell Wetland West, Williams Creek  
 22 North-1 [WCN-1], Williams Creek South-1 [WCS-1], Pueblo Boulevard South-1 [PBS-1], and Wild  
 23 Horse Dry Creek-1 [WHDC-1]) (**Table 6** and **Figure 10**). All sites exhibited all three wetland  
 24 indicators: wetland vegetation, wetland hydrology, and hydric soils. At each location, the vegetation  
 25 is dense within a narrow riparian zone along each channel. Dominant vegetation in the wetland  
 26 included tamarisk, narrowleaf cattail, Canada thistle, creeping bentgrass, and common spikerush.  
 27 The study area also contains scattered Siberian elm and plains cottonwood (*Populus deltoides*). The  
 28 total wetland area delineated within the study area is 1.258 acres. **Section 5** includes expected  
 29 impacts based on the project footprint.

30 **Table 6. Summary of Wetlands in the Study Area**

Wetland ID	Existing Area (acres)
Purcell Wetland	0.127
Williams Creek North-1 (WCN-1)	0.050
Williams Creek South-1 (WCS-1)	0.559
Pueblo Boulevard South-1 (PBS-1)	0.282
Wild Horse Dry Creek-1 (WHDC-1)	0.077 (4 separate areas)
Purcell Wetland West	0.163
<b>TOTAL</b>	<b>1.258</b>



Figure 10. Wetlands in the Study Area





#### 4.1.8 Senate Bill (SB) 40 and Non-SB 40 Resources

FHU staff surveyed SB 40 resources and Non-SB 40 resources within the study area to identify all potential trees and shrubs that require mitigation. A project falls under SB 40 (33-5-101-107, CRS 1973 as amended) guidelines if the project has an impact on a jurisdictional stream bed, stream bank, or riparian area along a jurisdictional stream. Williams Creek and Wild Horse Dry Creek are considered SB 40 jurisdictional streams based on the following criteria identified in the *Guidelines for Senate Bill 40 Wildlife Certification* (CPW & CDOT, 2013):

- Perennial streams identified on U.S. Geologic Survey minute topographical quadrangle maps
- Streams providing live water beneficial to fish and wildlife (plains killifish, desert cottontail, and other wildlife previously mentioned)
- Streams containing riparian vegetation or wetlands

**Section 5** includes a discussion of expected impacts based on the project footprint. For more information on Wild Horse Dry Creek SB 40 resources, refer to the *US 50 West Senate Bill 40 Formal Wildlife Certification Report* (FHU, 2014c), which only discusses the areas where SB 40 impacts will occur due to project construction. SB 40 impacts that would occur as part of the *US 50 West Willis Blvd to McCulloch Blvd EA* project will be identified before construction activities take place.

## 5. Impacts

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This section describes the impacts of the Proposed Action and the No Action Alternative on the biological resources identified in the study area, including vegetation, noxious weeds, wildlife, special status species (including migratory birds), wetlands, and SB 40 resources. Permanent impacts from the Proposed Action were determined based on the project design footprint and included the areas of ground disturbance from the following project elements:

- Addition of a third eastbound lane and intersection improvements at Purcell Blvd/US 50 and McCulloch Blvd/US 50
- Bridge widening, including pier work, at Wild Horse Dry Creek
- CBC extension, including wing walls, at Williams Creek
- Placement of riprap for erosion control
- Drainage outfall structures

Temporary impacts were determined based on the areas of ground disturbance that will be re-seeded and revegetated following construction.

### 5.1 Vegetation and Noxious Weeds

#### 5.1.1 Proposed Action

Construction of the Proposed Action would result in a loss of vegetation in terms of cover and species composition. Specifically, the Proposed Action would result in the permanent removal of shortgrass prairie (including grasses and shrubs) due to construction activities that would add impervious surfaces to the landscape. The increase in impervious surfaces would cause an increase in



1 stormwater runoff and the exposure of the surrounding vegetation to higher levels of pollutants.  
 2 Also, soil disturbance from construction equipment also creates favorable conditions for the  
 3 introduction and further spread of noxious weeds.

4 **Table 7. Vegetation Impacts**

Proposed Action Impacts	No Action Alternative Impacts
<b>US 50 between McCulloch Blvd and Wills Blvd</b>	
Impact quantities will be identified once additional design detail is available.	39.6 Acres Permanent Impact 78.4 Acres Temporary Impact

\* Temporary impacts generally occur from the short-term disturbance necessary for activities like construction access and grading. These areas will be revegetated once construction is completed.

5 **5.1.2 No Action Alternative**

6 No permanent or temporary vegetation impacts would occur from the No Action Alternative.

7 **5.2 Fish and Wildlife**

8 **5.2.1 Proposed Action**

9 As identified in **Section 5.1.1**, construction of the Proposed Action would result in a loss of  
 10 shortgrass prairie, which would directly result in a permanent loss of habitat for terrestrial species,  
 11 and potential cover for aquatic species.

12 Effects to wildlife due to the Proposed Action would include permanent habitat loss,  
 13 degradation/disruption of habitat (for example, noise effects), and fragmentation of habitat due to  
 14 the construction of the additional lane. Specifically, long-term impacts to wildlife due to the  
 15 construction and operation of roadways can include altered movement patterns and direct mortality  
 16 due to animal-vehicle collisions during crossings of the roadway when daily and/or seasonal  
 17 movements across the landscape occur. The study area is not located in a known migration area for  
 18 larger species such as deer or elk; therefore, impacts would primarily be to small and medium-sized  
 19 animals such as desert cottontail, black-tailed prairie dogs, coyotes, low-flying birds, and reptiles. In  
 20 the long term, increased obstacles, such as the widened roadway, would make it more difficult for  
 21 some wildlife to meet their biological needs, such as accessing food, breeding, etc. Wildlife mortality  
 22 from construction-related ground clearing and earth-movement activities could also affect small  
 23 terrestrial species and/or burrowing animals.

24 Permanent impacts would occur to aquatic resources at the William Creek CBC extension. Some  
 25 fish, such as plains killifish, use the current CBC to move upstream and downstream during peak  
 26 seasonal flow events. With the extension of the CBC upstream, fish movement during peak flows  
 27 will be less likely to occur.

28 Construction of the Proposed Action would also cause the temporary loss of shortgrass prairie,  
 29 which would cause temporary habitat loss, restrictions on wildlife movement, and the short-term  
 30 temporary displacement of certain wildlife species due to the increased noise and human presence

1 associated with construction activities (for example, construction noise and night lighting). Other  
2 temporary effects could be caused by the introduction and spread of noxious or invasive weed  
3 species, which further degrades wildlife habitat.

4 The Proposed Action, once constructed, would improve the riparian and aquatic habitats adjacent to  
5 the Wild Horse Dry Creek stream channel by removing noxious weeds, revegetating the riparian  
6 corridor with native vegetation, and closing off social trails through the CDOT ROW.

7 Impacts would occur primarily in the areas with minimal development where wildlife would be more  
8 likely to occur, such as in the areas near Williams Creek and Wild Horse Dry Creek.

### 9 **5.2.2 No Action Alternative**

10 Under the No Action Alternative, some effects to wildlife would be expected. Impacts to wildlife  
11 would include additional loss, degradation, and fragmentation of habitat due to development in the  
12 surrounding landscape. Also, increased traffic in the study area may lead to increased noise  
13 disturbance to wildlife and the potential for increased mortality from animal-vehicle collisions. Other  
14 impacts from the No Action Alternative would include continual degradation of the Wild Horse Dry  
15 Creek stream channel and surrounding riparian habitat due to the presence of noxious weeds and  
16 compaction from the use of social trails within the ROW. No temporary impacts are associated with  
17 the No Action Alternative.

## 18 **5.3 Special Status Species**

### 19 **5.3.1 Proposed Action**

20 As identified in **Section 5.1.1**, construction of the Proposed Action would result in a loss of  
21 shortgrass prairie, which would directly result in a permanent loss of habitat for terrestrial species  
22 and potential cover for aquatic species. Species affected include the black-tailed prairie dog (state  
23 species of special concern), Western Burrowing Owl (state threatened), and the massasauga  
24 rattlesnake (state species of special concern).

25 Construction of the Proposed Action would permanently impact prairie dog colonies in the areas of  
26 Purcell Blvd/US 50 and McCulloch Blvd/US 50 due to the construction of additional through lanes  
27 and auxiliary lanes (turn lanes, acceleration lanes, and deceleration lanes). Specifically, impacts would  
28 occur to the prairie dog colony in the north quadrants of the Pueblo Blvd/US 50 intersection. Due  
29 to the potential presence of Western Burrowing Owls associated with the prairie dog colonies within  
30 the study area, there is also the potential that project construction would have an effect on Western  
31 Burrowing Owls.

32 Additionally, due to the presence of the triploid Colorado checkered whiptail (state species of special  
33 concern) and suitable habitat for the plains leopard frog (state species of special concern) within the  
34 study area, there is a potential for permanent impacts to these species due to loss of habitat and  
35 direct mortality from construction activities.

36 Other permanent and temporary impacts to special status species would be similar to the impacts to  
37 fish and wildlife species discussed in **Section 5.2.1**.

1 Rare plants were not identified within the study area; therefore, there would be no permanent or  
2 temporary impacts due to the construction of the Proposed Action.

### 3 ***5.3.2 No Action Alternative***

4 There would be no impacts to special status species, including rare plants due to the No Action  
5 Alternative.

## 6 **5.4 Migratory Birds**

### 7 ***5.4.1 Proposed Action***

8 FHU staff observed multiple Cliff Swallow nests during the 2013 and 2015 field surveys on the  
9 eastbound US 50 bridge over Wild Horse Dry Creek and within the CBCs at Pueblo Blvd over  
10 Williams Creek and at Purcell Blvd for the unnamed tributary to Williams Creek. Construction  
11 activities associated with the bridge widening at Wild Horse Dry Creek and extensions to the CBC at  
12 Purcell Blvd would have permanent impacts on the nests at Wild Horse Dry Creek and the unnamed  
13 tributary to Williams Creek. Short-term temporary impacts due to the increased noise and human  
14 presence associated with construction activities associated with the entire project (for example, nest  
15 removal to conform to the MBTA, construction noise, and night lighting) would also affect  
16 migratory birds within the study area.

### 17 ***5.4.2 No Action Alternative***

18 There would be no permanent or temporary impacts to migratory birds due to the No Action  
19 Alternative.

## 20 **5.5 Wetlands**

### 21 ***5.5.1 Proposed Action***

22 Wetland impacts were estimated within a conservative Proposed Action Footprint as design is not  
23 available at the time of this report (December 2015) to identify permanent and temporary impacts.  
24 The total potential wetland impact in these three drainages due to construction of the westbound  
25 US 50 project is 0.394 acre. Once design is available, a more accurate quantity of permanent and  
26 temporary wetland impacts will be provided.

### 27 ***5.5.2 No Action Alternative***

28 There would be no permanent or temporary wetland impacts due to the No Action Alternative.

## 29 **5.6 Senate Bill 40 Resources**

### 30 ***5.6.1 Proposed Action***

31 Tamarisk, which is present in the Wild Horse Dry Creek, Williams Creek, and the unnamed tributary  
32 to Williams Creek drainage areas and within the CDOT ROW, is classified as an SB 40 shrub  
33 resource based on the *SB 40 Guidelines* established in a 2013 programmatic agreement between CPW



1 and CDOT (CPW & CDOT, 2013). Based on consultations with CDOT Region 2 environmental  
2 staff, these noxious weeds/SB 40 shrubs would be removed either by hand or by mechanical  
3 devices, such as chain saws, and sprayed with an aquatic-safe herbicide as part of the noxious weed  
4 treatment at the three drainages listed above, within the project limits-of-disturbance, permanently  
5 impacting SB 40 shrubs. A Formal SB 40 Wildlife Certification will be required before beginning  
6 construction. Any additional SB 40 tree or shrub resource mitigation will be pursued at that time.  
7 The scope of this EA does not include SB 40 Wildlife Certifications.

### 8 ***5.6.2 No Action Alternative***

9 There would be no impacts to SB 40 resources due to the No Action Alternative.

## 10 **6. Mitigation**

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11 Mitigation strategies are required for the Proposed Action and are identified for each resource, as  
12 discussed below. As previously noted, although the entire project area falls under the SGPI  
13 Programmatic BA/BO, the SGPI is not applicable to this project because transportation  
14 improvements would extend outside the CDOT ROW.

### 15 **6.1 Vegetation and Noxious Weeds**

#### 16 ***6.1.1 Off-Site Shortgrass Prairie Conservation and On-Site Best*** 17 ***Management Practices***

18 Impacts to shortgrass prairie habitat are expected as part of the construction of the Proposed  
19 Action. Temporary vegetation impacts will be revegetated following construction of the project.

#### 20 ***6.1.2 Tree Replacement***

21 One upland tree (honey locust) would be impacted at the Purcell Blvd/US 50 intersection and three  
22 upland trees (one honey locust and two pinyon pines) would be impacted at the McCulloch/US 50  
23 intersection. These trees will be replaced on a 1:1 basis and coordinated with PWMD. If any  
24 additional tree or shrub species is impacted during construction, it will be replaced at a 1:1 ratio and  
25 will be coordinated with CDOT and PWMD. Tree replacement should be considered successful as  
26 per Specification 214 (Planting) of the CDOT Standard Specifications for Road and Bridge  
27 Construction (CDOT, 2011a).

#### 28 ***6.1.3 Vegetation Enhancement/Restoration***

29 Vegetation enhancement/restoration along Wild Horse Dry Creek, Williams Creek, and the  
30 unnamed tributary to Williams Creek would also be implemented as part of this project, as discussed  
31 in the SB 40 Resources **Section 6.5**.

#### 32 ***6.1.4 Noxious Weed Management***

33 Specific BMPs will be required during and after construction to reduce the potential for introduction  
34 and spread of noxious weed species. CDOT will incorporate the management of the noxious weed

1 populations into the project plan set in a project Special Specification 217 (Herbicide Treatment) of  
2 the CDOT Standard Specifications for Road and Bridge Construction (CDOT, 2011b) to be  
3 included with the construction plans. Areas cleared of tamarisk will be replanted with sandbar willow  
4 brush cuttings and managed in accordance with Specification 214 (Planting) of the CDOT Standard  
5 Specifications for Road and Bridge Construction (CDOT, 2011a) included with the construction  
6 plans.

7 Noxious weed management objectives will generally be met by implementing the following actions  
8 in the project area:

- 9       ▪ The area of ground disturbance will be kept to the minimum necessary.
- 10       ▪ All equipment will be thoroughly cleaned before entering and exiting the project area.  
11       Cleaning and disposal of weed infested soil shall be included in the cost of Item 626  
12       Mobilization. The contractor shall submit to the engineer a statement certifying that all  
13       equipment has been cleaned before initial site arrival.
- 14       ▪ Areas with dense noxious weed populations will not be used for topsoil salvage.
- 15       ▪ Only herbicides approved for use in water will be used in or within 25 feet of wetlands or  
16       other water features.
- 17       ▪ Broadcast herbicide spraying will be approved only through written consent of the engineer  
18       and shall be applied when weather conditions (including wind) are suitable for such work.
- 19       ▪ Engineer will be notified 24 hours before herbicide is applied.
- 20       ▪ The project will be surveyed for noxious weeds throughout construction to identify and treat  
21       weeds.
- 22       ▪ If treatments for future weed infestations are required, coordination with the CDOT  
23       Region 2 Environmental staff should occur.

## 24 **6.2 Fish and Wildlife**

25 BMPs to prevent and minimize temporary impacts to vegetation would be developed and  
26 implemented before construction and will be included in a Stormwater Management Plan (SWMP).  
27 The SWMP will also identify erosion control features to minimize erosion impacts as part of project  
28 construction.

## 29 **6.3 Special Status Species**

30 Mitigation measures for special status species are outlined below.

### 31 **6.3.1 Black-Tailed Prairie Dogs and Western Burrowing Owl**

32 CDOT will avoid and minimize impacts on known black-tailed prairie dog colonies within the  
33 project footprint. CDOT's *Impacted Black-Tailed Prairie Dog Policy* (2009) will also be followed for all  
34 activities that affect black-tailed prairie dogs within the project footprint.

35 Because prairie dogs can expand their colonies into previously unoccupied areas over time, an  
36 additional site investigation should be conducted before beginning construction activities to verify  
37 the current status of prairie dog colonies in the project vicinity.

1 Due to the potential presence of Western Burrowing Owls associated with the prairie dog colonies  
2 within the study area, project construction may potentially affect Western Burrowing Owls.  
3 Mitigation for the presumed presence of Western Burrowing Owls will include:

- 4     ■ Although Burrowing Owls may occur throughout a prairie dog colony, they are most often  
5     found near the colony’s margins (Craig, 2001). Causing abandonment of a nest is a violation  
6     of the MBTA and is not covered by this strategy. As such, CDOT will limit work on projects  
7     that impact prairie dog colonies within the ROW to the non-nesting season, from August 15  
8     to April 1 (Craig, 2001).
- 9     ■ Burrowing Owls may be present at a burrow up to one month before egg-laying and several  
10    months after young have fledged. Thus, in areas where Burrowing Owls are known by the  
11    CDOT staff biologist to occur, earthwork should be avoided where possible between  
12    March 1 through March 31 and between August 15 through October 31 (Craig, 2001).
- 13    ■ If CDOT engages in spraying for insects on any of its ROWs, this should be reevaluated and  
14    eliminated in areas within 225 feet of known nesting locations (Dechant et al., 2001b).
- 15    ■ If a project that would impact prairie dog colonies within the ROW cannot be scheduled for  
16    construction during any other time except during the Burrowing Owl nesting season (from  
17    March 15 to October 31), the CDOT staff biologist will survey the project area for the  
18    presence of Burrowing Owls. If Burrowing Owls are found at the site, CDOT will  
19    coordinate with USFWS under the MBTA to ensure compliance.

### 20 **6.3.2 Massasauga Rattlesnake**

21 Mitigation for the presumed presence of the massasauga rattlesnake will include the measures  
22 identified below.

23 In areas with high population densities of the target species, underpasses and drift fences will be  
24 installed where practicable, as part of reconstruction projects. Because Hammerson (1999) counsels  
25 caution in placing such devices, the CDOT staff biologist and the USFWS will be consulted before  
26 construction activities begin in known massasauga rattlesnake habitat to determine that crossings are  
27 properly placed and if road signs should be included.

28 The revegetated riparian corridor underneath the Wild Horse Dry Creek bridge, adjacent to the  
29 Williams Creek CBC, and adjacent to the unnamed tributary to Williams Creek CBC, will improve  
30 potential massasauga rattlesnake habitat. This species will require no other mitigation.

### 31 **6.3.3 Plains Leopard Frog and Northern Leopard Frog**

32 BMPs for the plains leopard frog and northern leopard frog will be implemented and include:

- 33     ■ If construction activities are to occur between March 1 and July 31 at sites that contain  
34     habitat for the plains leopard frog and northern leopard frog, the CDOT staff biologist and  
35     the CPW will be consulted before construction to determine actions necessary to avoid and  
36     minimize impacts.
- 37     ■ Pesticide application near permanent bodies of water will be restricted during the period of  
38     frog metamorphosis (June to August).



1 Also, vegetation enhancement/restoration along Wild Horse Dry Creek, Williams Creek, and the  
2 unnamed tributary to Williams Creek will also be implemented as part of this project, as discussed in  
3 the SB 40 Resources Section mitigation section below, which will enhance habitat for the plains  
4 leopard frog and northern leopard frog following construction.

5 BMPs developed and identified within the SWMP will sufficiently mitigate potential impacts to the  
6 plains leopard frog and northern leopard frog.

7 **6.3.4 Triploid Colorado Checkered Whiptail**

8 BMPs developed and identified within the SWMP will sufficiently mitigate potential impacts to the  
9 triploid Colorado checkered whiptail.

10 **6.3.5 Migratory Birds**

11 To avoid and minimize activities that will have an impact on migratory birds and their nests, CDOT  
12 will include in project construction plans a Standard Special Specification 240 (Protection of  
13 Migratory Birds) for Road and Bridge Construction controls during project construction to limit  
14 activity around nests from April 1 to August 31 (CDOT, 2011c). If necessary, a biologist will  
15 conduct a migratory bird survey if construction occurs within the typical nesting season of migratory  
16 birds (April 1 to August 31).

17 **6.4 Wetlands**

18 The total permanent impacts were calculated at 0.025 acre among the three separate drainages.  
19 Based on these quantities, the project will require three separate Section 404 Nationwide Permits at  
20 Williams Creek, the unnamed tributary to Williams Creek, and Wild Horse Dry Creek before  
21 construction begins.

22 Also, based on CDOT requirements, if the project permanently impacts greater than 500 square feet  
23 of wetlands, a Wetland Finding Report will be required. In addition, if greater than 0.1 acre of  
24 wetlands is permanently impacted, a Functional Assessment of Colorado Wetlands (FACWet) will  
25 be required.

26 **6.5 Senate Bill 40 Resources**

27 All BMPs outlined in the *SB 40 Guidelines* (CPW & CDOT, 2013) will be incorporated into this  
28 project and included in the SWMP. BMPs include reseeded all disturbed areas with a mix of native  
29 grasses and forbs. Mitigation will also require that equipment be certified “clean” before arriving at  
30 and upon leaving the construction site to avoid the spread of invasive species. All areas cleared of  
31 tamarisk will be replanted with a combination of sandbar willow (1:1 mitigation ratio), other shrubs,  
32 and a grass seed-mix. A Formal SB 40 Wildlife Certification (including a mitigation plan) will be  
33 required before construction begins.

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# **Appendix A**

## **Site Photographs**



**Photo 1 — Wetlands WCN-1 in the background and WCS-1 in the foreground.**  
View looking north from in the bottom of the drainage/arroyo.



**Photo 2 — Looking northwest out over Wetland WCN-1**  
showing the vegetation present in the channel.



**Photo 3 — Wetland WCS-1, looking northwest toward the westbound bridge.**



**Photo 4 — Looking southeast from the concrete box culvert on Williams Creek under Pueblo Blvd toward Dry Creek, Wetland PBS-1.**





**Photo 5 — Looking west from Pueblo Blvd from in the median.**  
Drought has had a severe impact on upland vegetation.



**Photo 6 — Looking southeast from the median at Pueblo Blvd, showing the typical upland and depressional (arroyo) geomorphology of the area.**



**Photo 7 — Looking east along Williams Creek.**  
This riparian zone has the highest quality vegetation in the study area.



**Photo 8 — Picture showing areas of typical Niobrara shale substrate.**





**Photo 9 — Looking south from under the eastbound bridge.**  
This channel is very narrow and filled with noxious weeds.



**Photo 10 — Looking north from under the eastbound bridge.**  
Pedestrian off-road vehicle use  
in the area has eroded and damaged wetlands.





**Photo 11 — Looking north next to the concrete box culvert under Purcell Blvd,  
for the tributary to Williams Creek.**  
This drainage is highly channelized and filled with noxious weeds.



**Photo 12 — The Purcell Wetland had vegetation growing within the channel.**



**Photo 13 — Looking east over the Purcell Wetland, filled with common reed and tamarisk.**



**Photo 14 — Cliff Swallow nests on the Wild Horse Dry Creek bridge.**





**Photo 15 — Migratory bird nest found in the Williams Creek drainage near Pueblo Blvd**



**Photo 16 — Black-billed Magpie nest in the Williams Creek drainage near Pueblo Blvd**





Photo 17 — False leafy goldenweed found throughout the study area.



Photo 18 — Ten-petal blazing star near Pueblo Blvd





**Photo 19 — Prickly poppy found throughout the Williams Creek drainage.**



**Photo 20 — Triploid Colorado checkered whiptail found in the Williams Creek drainage near Pueblo Blvd**



**Photo 21 — A six-lined racerunner found in the study area.**



**Photo 22 — Looking northwest at the intersection of US 50 and McCulloch Blvd from Dunlap Drive.**





**Photo 23 — Looking west toward McCulloch Blvd from Dunlap Drive.**  
Gambel's Quail at the southwest corner of Dunlap Drive and Radnor Drive.



**Photo 24 — Looking north from US 50 toward the Walmart Supercenter development.**  
Active prairie dog colony at the northeast corner of US 50 and McCulloch Blvd



Photo 25 — Looking north from the southwest corner of US 50 and McCulloch Blvd  
Pueblo West intersection landscaping



Photo 26 — Southwest corner of US 50 and McCulloch Blvd  
Pueblo West intersection landscaping project donor plaque





**Photo 27 — Southeast of Purcell Blvd looking west, north of the water treatment facility.**  
Looking at upland vegetation in an area where a potential regional pond facility will be constructed.



**Photo 28 — Southeast of US 50 and Purcell Blvd**  
Looking east at a potential location for the regional pond. Area is already heavily disturbed.





**Photo 29 — South of US 50 and north of the water treatment facility.**  
Looking south at the water treatment facility, a new Pueblo oiled-roadway, and a construction access roadway in the regional pond area.



**Photo 30 — South of US 50 and east of Purcell Blvd**  
Picture of a migratory bird nest found in a single cholla cactus in an undisturbed portion of the regional pond survey area.



**Photo 31— South of US 50 and east of Purcell Blvd**

A new oiled, gravel road was built north of the water treatment facility in 2014/2015 and provides another connection from Pueblo Blvd and Purcell Blvd. This area has been heavily disturbed and would be a good location for a future regional pond.



**Photo 32 — South of US 50 and east of Purcell Blvd**

This new culvert and swale were constructed for the new oiled-road. Possibly can be used for future regional pond.





**Photo 33 — South of US 50 and east of Purcell Blvd**

The current swale is designed to disperse water before entering the unnamed tributary to Williams Creek. Potentially use this swale or improve upon it for a future regional pond.