

Desktop Analysis for Sensitive Biological Resources Bridge I-15-AO

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Executive Summary

This report provides a summary of the potential impacts to natural resources for the replacement of Bridge I-15-AO (the Project) located near Florissant, Colorado. This report includes findings that a Design-Build Contractor may need to consider when bidding on the construction of the above referenced Project.

Key Findings

- The Project is located along Twin Creek; the Project bridge spans a Twin Creek tributary.
- Surface Waters
 - The Project has the potential to impact a total of 0.12 acres of US Army Corps of Engineers (USACE) jurisdictional wetlands (Figure 5)
 - The Project has the potential to impact 0.18 acres (640 linear feet [ft]) of USACE jurisdictional surface waters (Figure 5)
- Sensitive Species
 - The Project has no potential to impact Endangered Species Act-listed species.
 - The Project has the potential to impact three species listed by Colorado Parks and Wildlife (CPW) as endangered or threatened.
 - There is potential for Migratory Bird Treaty Act (MBTA) species and bats to occur
 - The Project falls under the jurisdiction of Senate Bill (SB) 40 due to its proximity to Twin Creek.
- Floodplains
 - The Project is not located within, nor will it impact, a Federal Emergency Management Agency (FEMA) Zone A Floodplain (100-year floodplain) (Attachment C).

- Hazardous Waste
 - Materials from the former Colorado Midland Terminal Railroad and transformers observed adjacent to the PRA have the potential to have contaminated the surrounding soils with metals, petroleum products, and PCBs (Attachment E).
- Archaeological, Historic and Paleontological Resources
 - These resources are being assessed by CDOT under separate cover

Risks, Permits and Mitigation

- Surface Waters
 - Avoidance of impacts to wetlands are recommended wherever possible.
 - If any impacts to a USACE regulated wetland or surface water are anticipated for the Project
 - A Permit may be required under Section 404 of the Clean Water Act (Nationwide Permit [NWP] or Individual Permit [IP], depending on the level of impacts)
 - Mitigation measures for those impacts may be required, mitigation could include:
 - Construction best management practices such as stormwater silt fencing, construction procedures, etc.
 - Wetland mitigation. Since no mitigation banks are located in this watershed, in-kind mitigation would need to be negotiated with the USACE
- Sensitive Species
 - Clearance of MBTA species may be required prior to construction. Coordination with CPW may be required if seasonal avoidance is not possible
 - Clearance of bat species may be required prior to construction
 - SB 40 wildlife certification from CPW will be required
 - No with the USFWS is anticipated
- Stormwater
 - Impacts over 1 acre require a General Permit for Stormwater Discharges Associated with Construction Activity (depending on the level of impacts) which need to be approved by Colorado Department of Public Health and Environment
 - Project design will need to meet Teller County standards for minimizing stormwater impacts
- Hazardous Waste
 - Additional sampling is recommended to address the identified recognized environmental conditions.
 - Prior to any underground digging or soil disturbance, a utility locate should be called to prevent damage to any existing utilities in the project area.

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- Attachment A – Information for Conservation and Planning Report (IPaC)
- Attachment B – Preliminary Bat Assessment Guidelines for Bridges/Structures
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1. Introduction

Stanley Consultants, Inc. (Stanley) was retained by the Colorado Department of Transportation (CDOT) to assess the environmental resources present within the vicinity of Bridge I-15-AO (Figure 1), which is scheduled to be replaced (the Project). The assessment of environmental resources presented in this desktop analysis is intended to inform the bridge planning and design process, and to be used for permitting purposes once a bridge design has been selected. This document presents a summary of the findings of the resources assessed within the potential footprint of disturbance (Project Review Area [PRA]; Figure 1).

2. Background

2.1 Project Description

The CDOT Region 2 Bridge Bundle Design Build Project consists of the replacement of a total of nineteen (19) structures, including two (2) Additionally Requested Elements (AREs) structures, bundled together as a single design-build project. These structures are rural bridges on essential highway corridors (U.S. Highway [US] 350, US 24, Colorado State Highway [CO] 239 and CO 9) in southeastern and central Colorado. These key corridors provide rural mobility, intra- and interstate commerce, movement of agricultural products and supplies, and access to tourist destinations.

Fourteen (14) structures in this design build project are jointly funded by the USDOT FHWA Competitive Highway Bridge Program grant and the Colorado Bridge Enterprise (Project No. 23558). The remaining five (5) structures (including the two ARE structures) are funded solely by the Colorado Bridge Enterprise (Project No. 23559). Bridge I-15-AO is funded under Project No. 23558.

The bridges included in the ‘Region 2 Bridge Bundle’ were selected based on similarities in the bridge conditions, risk factors, site characteristics, and probable replacement type, with the goal of achieving economy of scale. Seventeen of the bridges being replaced are at least 80 years old. Five of the bridges are Load Restricted, limiting trucking routes through major sections of the US 24 and US 350 corridors. The bundle is comprised of nine timber bridges, four concrete box culverts, one corrugated metal pipe (CMP), four concrete I-beam bridges, and one I-beam bridge with corrugated metal deck.

Bridge I-15-AO is located on US 24 at milepost 271.900, approximately 2 miles east of Florissant, Colorado. The bridge is a double cell box culvert (two 10-ft by 8-ft cells, 45-ft long) with four concrete wingwalls (22.5 feet long) at each corner. The culvert is crossed by a tributary of Twin Creek that discharges to the main channel of Twin Creek west of the PRA, immediately downstream of the culvert.

The proposed Project plan includes replacing existing structure with a two-cell concrete box culvert. No bypass is currently planned for this location; therefore, the area of disturbance will be restricted to the limits of the right-of-way (ROW). Once the bridge is complete and ready for use, any disturbed areas will be restored to original contours and reseeded.

All Project-related water use for activities such as dust control will be required to be brought in via water tanks. All concrete production will be required to be made at a batch plant with clean, treated water. No water will be extracted directly from the nearest water source, Twin Creek, as a part of Project activities.

2.2 Project Purpose and Need

The concrete box culvert at I-15-AO was built in 1937 along US 24, a key corridor connecting residents and tourists from Colorado Springs and southern Colorado to the recreational activities in the Rocky Mountains. The concrete structure has severe deterioration that requires frequent inspection and repair for issues such as numerous failed shotcrete repairs throughout the structure and the use of timber planks to stabilize fill above the headwall. When the bridge was constructed, river stones were used in the concrete mix, which does not meet current construction standards. This form of aggregate does not have the bonding ability of crushed stones and the use of this material has accelerated the formation of the numerous concrete defects.

This bridge is well past its replacement life and is not up to current construction and safety standards and must be replaced to prevent potential failure.

3. Project Review Area

Since the final bridge design has not yet been selected, the limits of the 12.4-acre PRA (Figure 2) were defined to include all potential designs informed by discussions with the Project engineers and include considerations such as the location of the CDOT ROW, access permissions from adjacent land owners, the need for traffic control during construction, and design requirements to bring existing structures into alignment with current CDOT standards. Based on those discussions, the boundaries of the PRA for this bridge extend width-wise (east/west) to the edge of the CDOT ROW as well as the Work Area around the bridge, which extends an additional 25 ft past the CDOT ROW to the west of the bridge. The PRA also extends length-wise for 2,000 ft east and west from the bridge along the road (US 24) within the CDOT ROW. The PRA is located entirely on privately-owned lands in Teller County, Colorado, east of Florissant, Colorado within portions of Section 6 of Township 13 South, Range 70 West (6th Principal Base and Meridian).

3.1 Land Use

Land use in the vicinity of the PRA predominantly consists of the US 24 transportation corridor, rural residential homes and roads, and ranching activities. The area surrounding the Project consists entirely of privately-owned lands. No structures or residences are located in the vicinity of the PRA.

3.2 Water

The dominant surface water features in the PRA is the branch of Twin Creek that crosses through the I-15-AO structure and the main channel of Twin Creek that the Twin Creek branch discharges into. Once it exits the PRA, Twin Creek flows northwest until its confluence with the South Fork of the South Platte River below the Lake George Reservoir. From this point the South Platte flows southeast, then turn northeast towards Denver, then east where it joins the North Platte River, then continues east to the Missouri River and out to the Gulf of Mexico.

In the wetland areas of the PRA near the main channel of Twin Creek, saturation was present at the soil surface and the water table was within 8 inches of the surface. In the wetland area near the Twin Creek tributary, saturation was present 12 inches below the surface and the water table was not present. The surrounding upland soils were very dry. The primary hydrology input is Twin Creek and its tributary, with other inputs that include groundwater and surface runoff from the adjacent hillsides and the highway.

3.3 Physical Features

The Project is located within the valley containing the main channel of Twin Creek, surrounded by steep mountain slopes, rocky hillsides, and the river terraces and slopes. The elevation at the site is approximately 8,490 ft above mean sea level (AMSL). Short segments of the main channel of Twin Creek were realigned during the construction of the original bridge in 1937 and the adjacent road. The PRA has historically held more water due to the presence of a beaver dam downstream of the I-15-AO bridge; however, a storm event several years ago removed the beaver dam, reducing the overall volume of water held in both the main channel of Twin Creek and the Twin Creek tributary running under the bridge.

Soils within the PRA are dominated by Guffey-Rofork association, Rofork very gravelly sandy loam, and Platdon loam (Soil Survey Staff 2020).

Within the PRA, the bridge, roadway, and roadway shoulder are the dominant constructed features, while the natural features consist of the river and its associated wetland habitats, as well as large rock outcrops and steep hillsides.

3.4 Vegetation Community

The vegetation surrounding the PRA is primarily forested scrub-shrub. The plant communities within the PRA consists of riparian scrub-shrub, emergent wetland vegetation and disturbed roadway edges dominated by rushes sedges, and willows.

3.5 Wildlife Corridors

The statewide assessment of wildlife linkages (Southern Rockies Ecosystem Project 2005) mapped no wildlife linkage corridors within the vicinity of the PRA (Figure 3). The closest wildlife linkage corridor (one for Preble's meadow jumping mouse and one for elk, bear, and mountain lions) are more than 22 miles from the PRA on the other side of the Rampart Range from the PRA. One deer and one elk roadkill have been recorded within the PRA (Figure 3) and six more deer roadkill have been recorded within 1 mile of the PRA (OTIS 2020).

4. Resource Analysis Methods

4.1 Desktop Analysis

A desktop analysis was conducted to identify potential resources of concern and collect information representative of the PRA from available publications and online resources. The desktop analysis also assessed Project location and associated land management to determine applicable environmental regulations to be considered for the Project.

The desktop analysis was conducted by gathering data from a variety of sources including: the Colorado Natural History Program (CNHP) species database; the National Wetland Inventory (NWI) wetlands mapping; Colorado Wetland Inventory; Federal Emergency Management Agency (FEMA) floodplain mapping; U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) and other publicly available documents on species reviews and rulings; USFWS critical habitat mapper; U.S. Department of Agriculture's National Resources Conservation Service soil mapping; U.S. Geological Survey StreamStats; Environmental Protection Agency's waters mapping; and aerial photography.

4.2 Species Screening Analysis

Special status species analyzed in this report include: 1) species listed by the USFWS under the Endangered Species Act (ESA) that have been identified by the USFWS Colorado Ecological Service Field Office through the IPaC online query (Attachment A); 2) species listed by Colorado Park & Wildlife (CPW) as State Endangered or State Threatened; 3) species listed under the Bald and Golden Eagle Protection Act (BGEPA); and 4) species protected under the Migratory Bird Treaty Act (MBTA).

Screening analysis methods for determining species lists and habitat information includes resources mentioned above (e.g., IPaC), as well as species records from CNHP, CPW databases and publications related to any state-listed threatened or endangered species. Other resources on species-specific information includes a variety of sources such as USFWS literature and fact sheets, U.S. Forest Service literature and fact sheets, and published white literature. The CNHP species presence database was queried for records of ESA- and state-listed threatened and endangered species within 2 miles of the bridge location.

Based on the special status species lists generated from the above sources, a screening analysis was performed to evaluate the potential for special status species or designated or proposed critical habitat to occur within the PRA. Criteria used to determine the potential of occurrence of each species included in this screening analysis are defined as follows:

Present: The species has been observed to occur in the PRA based on known records, the PRA is within the known range of the species, *and* habitat characteristics required by the species are known to be present.

Possible: The species has not been observed in the PRA based on known records, but the known, current distribution of the species includes the PRA *and* the required habitat characteristics of the species appear to be present in the PRA.

Unlikely: The known, current distribution of the species does not include the PRA, but the distribution of the species is close enough such that the PRA may be within the dispersal or foraging distance of the species. The habitat characteristics required by the species may be present in the PRA.

None: The PRA is outside of the known distribution of the species, *and/or* the habitat characteristics required by the species are not present.

The screening analysis also assessed the potential for impacts to sensitive species. Impacts to ESA-listed species were assessed per the criteria outlined in the Endangered Species Consultation Handbook (USFWS 1998, Section 3.5, pg 3-12):

- **No effect:** No impacts, positive or negative, to listed or proposed resources. Generally, this means no listed resources will be exposed to action and its environmental consequences.
- **May affect, but not likely to adversely affect:** All effects are beneficial, insignificant, or discountable. Insignificant effects relate to the size of the impact and include those effects that are undetectable, not measurable, or cannot be evaluated. Discountable effects are those extremely unlikely to occur.
- **May affect, and is likely to adversely affect:** Listed resources are likely to be exposed to the action or its environmental consequences and will respond in a negative manner to the exposure.

An Action Area, defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR § 402.02(d)) is typically required for a review of ESA-listed species. An Action Area was not created for this analysis, as the specific action and associated direct or indirect impacts have not yet been determined for the Project at this time. The PRA includes a 200-ft buffered limit of disturbance for the work area in order to ensure potential impacts are considered to the extent possible (Figure 2). However, a larger Action Area may be needed to review ESA-listed species depending on the final design.

4.3 Field Survey

On August 29, 2020, Stanley biologists conducted a pedestrian survey of the 12.4-acre PRA. The pedestrian survey included delineations of any potential wetlands or other waters of the U.S. (WOTUS), and characterizations of the surrounding vegetation and wildlife habitat that could be potentially impacted by construction activities. General site observations were also recorded, such as the topography, the land use and condition within and adjacent to the PRA, and any wildlife observations.

Our project team conducted WOTUS and wetland delineations in accordance with U.S. Army Corps of Engineers (USACE) delineation guidance (USACE 2005, USACE and U.S. Environmental Protection Agency [EPA] 2008) and regional supplemental manuals (USACE 2010). Although the definition of WOTUS has been in flux in recent years, Colorado remains under the jurisdictional interpretation of Section 404 of the Clean Water Act (CWA) established in *Rapanos v. United States* (Rapanos). The potential for WOTUS to occur within the PRA was therefore evaluated per the Rapanos guidance and associated documents. Additional details are provided in the Aquatic Resources Delineation Report. GPS locations of any resources were recorded using ESRI’s Collector and Survey123 apps on an iPad connected to a sub-meter GPS antenna.

5. Resource Analysis Results

5.1 Special Status Species

This first screening was to determine species that have potential habitat or records with or near to the PRA. Results from the IPaC query (Attachment A) and the CPW state-listed threatened and endangered species identified a total of **33** species for assessment (Table 1, Special Status Species Analysis Screening). Of the **33** special status species assessed, all were determined to have no potential to occur within the PRA. There is no designated or proposed critical habitat within the PRA.

The USFWS office that services the PRA (the Colorado Ecological Services Field Office) has determined that impacts to the **least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid** only need to be considered for water-related activities/use in the North Platte, South Platte, and Laramie Basins in Nebraska. A list of applicable water-related activities is published by the South Platte Water Related Activities Program (SPWRAP). All Project-related depletions will be dealt with under CDOT's programmatic agreement with the USFWS.

Table 1. Special Status Species Screening Analysis

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
Amphibians			
<p>Boreal toad (<i>Bufo boreas boreas</i>)</p> <p>CO – E</p>	<p>Range: Alaska south to California and New Mexico. In Colorado, found in San Juan and Williams Mountains, Sawatch and Mosquito Ranges, and Upper Rift Valley. Local watersheds include Trout Creek-Arkansas River, Cottonwood Creek, Clear Creek-Arkansas River, Lake Creek, South Fork South Platte River, headwaters Arkansas River, Middle Fork South Platte River, headwaters Tarryall Creek, and headwaters North Fork South Platte River (Olson 2019).</p> <p>Habitat: Species occurs in mountain lakes, ponds, wet meadows, the margins of streams, and wetlands in subalpine forests. In Colorado, found at elevations between 7,500 to 12,500 ft. (Olson 2019). Breeding habitat includes spruce-fir forests and alpine meadows, as well as lakes, marshes, ponds, and bogs with sunny exposures and quiet, shallow water.</p>	<p>Potential to Occur: None.</p> <p>Although the PRA contains a wet meadow area near water, it is located within a mid-elevation forest/shrubland and the PRA is located outside the species’ known range, with the nearest records located west of the PRA in Park County.</p>	<p>No Effect.</p> <p>Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation. None needed.</p>
Birds			
<p>Burrowing owl (<i>Athene cunicularia</i>)</p> <p>CO – T</p>	<p>Range: From Alberta and Saskatchewan south to California, Texas and Mexico, and Florida. In Colorado, primarily found in eastern third of the state; breeds in South Park, Arkansas River Tablelands, Plains Canyons, and Sandhill Ogallala Plateau (Olson 2019). Species is rare to uncommon in Colorado mountain parks and on the western slope.</p> <p>Habitat: Found in open, arid lands with scattered shrubs and animal burrows. In Colorado, species is more common in eastern, dry grasslands or short-grass prairie, or western desert lands.</p>	<p>Potential to Occur: None.</p> <p>Although habitat near the PRA contains elements of arid shrub or grasslands, the dominant habitat in the area is forest/scrub-shrub. The PRA is outside of the species’ common distribution and does not contain suitable habitat.</p>	<p>No Effect.</p> <p>Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation. None needed.</p>
<p>Least tern (<i>Sterna antillarum</i>)</p> <p>ESA – E CO – E</p>	<p>Range: Species occurs from Maine to Florida and west to Texas, and along the California coast. In Colorado, the species has been recorded in the Adobe Creek, Neenoshe, and Horse Creek Reservoirs and breeding in the southeastern portion of the state, generally in the La Junta-Lamar area (CPW 2020, Olson 2019). The species does not breed in the PRA’s watershed or any adjacent watersheds (Olson 2019).</p> <p>Habitat: The least tern nest on barren to sparsely vegetated sandbars along rivers, sand and gravel pits, lakes, and reservoir shorelines</p>	<p>Potential to Occur: None.</p> <p>The PRA is outside of the species’ range and does not contain suitable habitat of large beaches or sandbars.</p>	<p>No Direct Effect.</p> <p>No potential for species to occur within the PRA.</p> <p>See discussion on water-related activities on the South Platte River at top of Section 5.1.</p> <p>Mitigation: Dependent upon impacts to South Platte Basin.</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
<p>Lesser prairie-chicken (<i>Tympanuchus pallidicinctus</i>)</p> <p>CO – T</p>	<p>Range: In extreme southeastern Colorado.</p> <p>Habitat: Large, sandy grasslands with abundant grasses, sandsage, and yucca.</p>	<p>Potential to Occur: None. The PRA is outside of the species known range and does not contain suitable habitat of sandy grasslands with sandsage or yucca.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>
<p>Mexican spotted owl (<i>Strix occidentalis lucida</i>)</p> <p>ESA – T CO – T</p>	<p>Range: Species occurs in Utah and Colorado south to the Guadalupe Mountains in Texas, and in other mountains scattered in southern Arizona, New Mexico and Mexico (Olson 2019). In Colorado, species occurs within Chaffee, Custer, Clear Creek, Douglas, El Paso, Fremont, Huerfano, Jefferson, Las Animas, Park, Pueblo, and Saguache counties (Olson 2019).</p> <p>Habitat: Species occurs in steep rocky canyon, branching tributary canyons, and old growth, mature forests comprised of pinyon-juniper woodlands, mixed-conifer and ponderosa pine forests, and/or riparian zones between 5,820 to 9,100 ft (Meyer 2007, USFWS 2012).</p>	<p>Potential to Occur: None. Although Mexican spotted owl critical habitat is located approximately 12 miles from the PRA, the PRA does not contain the steep rocky canyons or forest density required to support this species.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>
<p>Piping plover (<i>Charadrius melodus circumcinctus</i>)</p> <p>ESA – T CO – T</p>	<p>Range: Found in southeastern Alberta and southern Manitoba south to Nebraska, with additional populations in northeastern and eastern Colorado, and northern Texas. In Colorado, species occurs in eastern part of state along Arkansas and South Platte River drainages. Species does not breed in the PRA watershed or any adjacent watersheds (CPW 2020, Olson 2019).</p> <p>Habitat: Piping plover use wide, flat, open sandy beaches with very little grass or vegetation (CPW 2020).</p>	<p>Potential to Occur: None. The PRA is outside of the species' range and does not contain suitable habitat of large, suitable sandy beaches or sandbars.</p>	<p>No Direct Effect. No potential for species to occur within the PRA.</p> <p>See discussion on water-related activities on the South Platte River at top of Section 5.1.</p> <p>Mitigation: Dependent upon impacts to South Platte Basin.</p>
<p>Plains sharp-tailed grouse (<i>Tympanuchus phasianellus jamesii</i>)</p> <p>CO – E</p>	<p>Range: In extreme northeastern Colorado, mostly in Weld County.</p> <p>Habitat: Medium to tall grasslands, almost exclusively in Conservation Reserve Program grasslands.</p>	<p>Potential to Occur: None. The PRA is located outside of the species' known range and does not contain suitable habitat of tall grasslands.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) ESA – E CO – E	<p>Range: In southcentral and southwestern Colorado, usually below 8,500 ft.</p> <p>Habitat: Dense riparian habitats with saturated soils, standing water or nearby streams.</p>	<p>Potential to Occur: None. The PRA does not contain suitably dense riparian habitat to support this species and the PRA is located at the edge of the species' known elevational range.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>
Whooping crane (<i>Grus americana</i>) ESA – E CO – E	<p>Range: Species found in disjunct populations from Alberta to Florida. In Colorado, species occurs rarely as migrants during the spring and fall in eastern Colorado. Species is not known to occur in the PRA watershed or any adjacent watersheds (CPW 2020, Olson 2019).</p> <p>Habitat: Species occurs in mudflats around reservoirs and agricultural areas and in shallow wetlands with wide-range visibility and are free from human disturbance (CPW 2020, Olson 2019).</p>	<p>Potential to Occur: None. The PRA is located outside of the species' known range.</p>	<p>No Direct Effect. No potential for species to occur within the PRA.</p> <p>See discussion on water-related activities on the South Platte River at top of Section 5.1.</p> <p>Mitigation: Dependent upon impacts to South Platte Basin.</p>
Fish			
Arkansas darter (<i>Etheostoma cragini</i>) CO – T	<p>Range: 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.</p> <p>Habitat: Found in shallow, clear, sandy streams with spring-fed pools and abundant rooted aquatic vegetation. Can occur in large, deep pools during late summer low-water periods when streams may become intermittent.</p>	<p>Potential to Occur: None. Although the PRA contains potentially suitable habitat for the species, the PRA is located outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
Bonytail (<i>Gila elegans</i>) ESA – E CO – E	<p>Range: Extirpated from historic range (USFWS 2002). Historically occurred in the Colorado River system, including the Gila, Salt, Yampa, Green, Colorado and Gunnison rivers (CPW 2020, AGFD 2020). No reproducing populations are known in the wild.</p> <p>Habitat: Historically found in warm-water reaches of larger rivers (USFWS 2002). Recorded using the main stream portions of mid-sized to large rivers, usually over mud and rocks. (AGFD 2020). Observed spawning over rocky shoals and shorelines (USFWS 2002).</p>	<p>Potential to Occur: None. The PRA does not occur within the species' historic range and the species has been extirpated from its historic range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
<p>Brassy minnow (<i>Hybognathus hankinsoni</i>)</p> <p>CO – T</p>	<p>Range: In Colorado, found in the Lower South Platte River Basin and in Colorado River backwaters (CPW 2016b).</p> <p>Habitat: Occurs in a variety of environmental conditions, including stream channels (particularly pools), backwaters, and beaver ponds with continuous connectivity to other waters (CPW 2016b). Suitable habitat includes cool, clear water, fluctuating plains streams, and streams with abundant aquatic vegetation and submergent vegetation, (CPW 2016b, Wooding 1985). The species prefers clear, slow streams but have been collected in larger rivers with higher turbidity, and occasionally in lakes (MFWP 2020).</p>	<p>Potential to Occur: None. Although the PRA contains potentially suitable habitat for the species, the PRA occurs within the Middle Fork of the South, outside of the species' known range (CPW 2016b).</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
<p>Colorado pikeminnow (<i>Ptychocheilus lucius</i>)</p> <p>ESA – E CO – T</p>	<p>Range: Current range restricted to the Green, Yampa, White, Gunnison, and Colorado Rivers (AGFD 2002a, CPW 2020).</p> <p>Habitat: Occurs in swift flowing muddy rivers with quiet, warm backwater.</p>	<p>Potential to Occur: None. The PRA occurs outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
<p>Common shiner (<i>Luxilus cornutus</i>)</p> <p>CO – T</p>	<p>Range: Current known range in Colorado includes northern Colorado along the South Platte River from Denver and Ovid (Woodling 1985; Fuller 2004).</p> <p>Habitat: Occurs in moderate gradient streams with cool, clear water, gravel bottoms and shaded by brush or trees (Woodling 1985)</p>	<p>Potential to Occur: None. The PRA occurs outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
<p>Greenback cutthroat trout (<i>Oncorhynchus clarki stomias</i>)</p> <p>ESA – T CO – T</p>	<p>Range: Historic range includes all mountain and foothill habitats of the South Platte and Arkansas river drainage systems. Currently only found in Bear Creek on Pikes Peak in the Arkansas River drainage (USFWS 2014). Reintroductions have started in a high elevation lake west of Fort Collins.</p> <p>Habitat: Occurs in cold, clear, gravely headwater streams and mountain lakes which provide an abundant food supply of insects (CPW 2020).</p>	<p>Potential to Occur: None. Although the PRA contains potentially suitable habitat, the PRA is outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
<p>Humpback chub (<i>Gila cypha</i>)</p> <p>ESA – E CO – T</p>	<p>Range: In Colorado, species is currently found in deep, canyon-bound portions of the Colorado River in Black Rocks and in the Yampa River at Dinosaur National Monument (AGFD 2001, CPW 2020).</p> <p>Habitat: Occurs in deep, fast-moving, turbid waters often associated with large boulders and steep cliffs (CPW 2020).</p>	<p>Potential to Occur: None. The PRA occurs outside of the species’ known range and does not contain suitable habitat of deep, fast-moving, turbid waters.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
<p>Lake chub (<i>Couesius plumbeus</i>)</p> <p>CO - E</p>	<p>Range: In Colorado, the species has been recorded in the Platte River drainage west of Boulder and in South St. Vrain Creek (Stasiak 2006a), but is largely extirpated from Colorado (Wooding 1985).</p> <p>Habitat: Most commonly found in cool, shallow waters, but can occur in a wide variety of environments (Becker 1983, Stasiak 2006a). Also found in clear water and gravel bottoms of glacial scour lakes, and occasionally in turbid streams (Stasiak 2006a). They more commonly inhabit lakes in the southern portion of their range (Becker 1983).</p>	<p>Potential to Occur: None. The PRA occurs outside of the species’ current known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
<p>Northern redbelly dace (<i>Phoxinus eos</i>)</p> <p>CO - E</p>	<p>Range: In Colorado, extant populations occur in tributaries to the upper Platte River drainage system (Garber Creek, Jackson Creek, Plum Creek) (Stasiak 2006b).</p> <p>Habitat: Occurs in sluggish, spring-fed streams with a lot of vegetation and woody debris (Stasiak 2006b; Wooding 1985). Species requires a constant supply of cool, spring water with sufficient oxygen. Habitat typically includes cover in the form of undercut banks, heavy vegetation, or brushy debris (Stasiak 2006b).</p>	<p>Potential to Occur: None. Although portions of Twin Creek within the PRA have high density vegetation cover, the PRA occurs outside of the species’ known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
<p>Pallid Sturgeon (<i>Scaphirhynchus albus</i>)</p> <p>ESA - E</p>	<p>Range: Species is restricted to the Mississippi-Missouri river system from Montana to Louisiana. The species is not found in Colorado and is not known to occur in the Project’s watershed (Olson 2019, USFWS 2007).</p> <p>Habitat: Species occurs at the bottom of large, turbid, silty rivers (Olson 2019, USFWS 2007)</p>	<p>Potential to Occur: None. The PRA is located outside of the species known range.</p>	<p>No Direct Effect. No potential for species to occur within the PRA.</p> <p>See discussion on water-related activities on the South Platte River at top of Section 5.1.</p> <p>Mitigation: Dependent upon impacts to South Platte Basin.</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
Plains minnow <i>(Hybognathus placitus)</i> CO – E	<p>Range: In Colorado, the species has been recorded on the South Platte River (in Washington and Yuma Counties) and Arkansas River in (Kiowa County) (Wooding 1985).</p> <p>Habitat: Inhabits channels of shallow, fluctuating streams with shifting sand substrates (Rees et al 2005). Found in both clear and turbid streams (Rees et al 2005).</p>	<p>Potential to Occur: None. The PRA occurs outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
Razorback sucker <i>(Xyrauchen texanus)</i> ESA – E CO – E	<p>Range: In Colorado, species' current distribution is limited to the Yampa, Colorado and Gunnison rivers.</p> <p>Habitat: Found in a variety of habitats from deep, clear to turbid waters of large rivers and some reservoirs over mud, sand or gravel (AGFD 2002b, CPW 2020).</p>	<p>Potential to Occur: None. The PRA occurs outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
Rio Grande sucker <i>(Catostomus plebeius)</i> CO – E	<p>Range: In Colorado, the species is found only in Hot Creek and McIntyre Springs in Conejos County (Rees and Miller 2005, Wooding 1985).</p> <p>Habitat: An obligate riverine species found in areas near rapidly flowing water in pools, riffles, and glides (Rees and Miller 2005). The species is associated with low gradient habitats with cobble and small boulder substrate (Swift-White et al 1999).</p>	<p>Potential to Occur: None. The PRA occurs outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>
Southern redbelly dace <i>(Phoxinus erythrogaster)</i> CO – E	<p>Range: In Colorado, the species is found in the headwaters of the Arkansas River near Pueblo and Canon City (Stasiak 2007, Wooding 1985).</p> <p>Habitat: Occurs in sluggish headwaters and upland creeks (usually spring-fed) with vegetation and woody debris (Stasiak 2007). Suitable habitat include clear creeks with abundant riparian vegetation and algal growths covering a stream substrate of deep silt deposits (Wooding 1985).</p>	<p>Potential to Occur: None. The PRA occurs outside of the species' known range.</p>	<p>No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.</p> <p>Mitigation: None needed</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
Suckermouth minnow (<i>Phenacobius mirabilis</i>) CO – E	Range: In Colorado, the species is limited to the eastern plains, in portions of the mainstem and lower mainstem South Platte (Logan, Sedgewick, Washington, Weld, and Yuma Counties) and some tributaries of the Arkansas Rivers (Prowers County) (Wooding 1985). Habitat: Occurs in riffle areas of warm prairie streams of all sizes with low to moderate currents and year-round flow (Wooding 1985).	Potential to Occur: None. The PRA occurs outside of the species' known range and does not contain suitable habitat of warm prairie streams.	No Effect. The species has no potential to occur within the PRA and no potential to be impacted by Project activities. Mitigation: None needed
Mammals			
Black-footed ferret (<i>Mustela nigripes</i>) ESA – E CO – E	Range: Historically known only in eastern Colorado, experimental populations have been reintroduced in eastern Colorado since 2001. Habitat: Grasslands and shrublands that support prairie dog populations.	Potential to Occur: None. The PRA is located outside of the species' known range.	No Effect. Species does not have any potential to occur and would not be impacted by the Project. Mitigation: None needed.
Canada Lynx (<i>Lynx canadensis</i>) ESA – T CO – E	Range: Historically known from the mountainous regions, but likely disappeared from Colorado by the mid-1970s. Reintroduced in 1999 to the San Juan Mountains in southwestern Colorado. Habitat: Dense, subalpine forest and mountain streams where ever abundant snowshoe hare populations are found.	Potential to Occur: None. Although the PRA is near suitable habitat of dense forest cover, the nearest mapped lynx corridors are a minimum of 40 miles west of the PRA.	No Effect. Species does not have any potential to occur and would not be impacted by the Project. Mitigation: None needed.
Gray wolf (<i>Canis lupus</i>) CO – E *Species delisted from ESA 11/3/2020	Range: Historically know in wildlands of Colorado but have been extirpated for some time (CPW 2020, Olson 2019). Habitat: Variety of wild habitats where herds of large game and abundant small game animals exist.	Potential to Occur: None. Currently extirpated from Colorado.	No Effect. Species does not have any potential to occur and would not be impacted by the Project. Mitigation: None needed.
Grizzly bear (<i>Ursus arctos</i>) ESA – T CO – E	Range: Current range extends from Alaska south to Washington and Wyoming. Historically know in wildlands of Colorado but no recent records occur in the state. Habitat: Species occurs in a variety of wild habitats in foothills and mountain, including tundra and subalpine forest.	Potential to Occur: None. Currently believed to be extirpated from Colorado.	No Effect. Species does not have any potential to occur and would not be impacted by the Project. Mitigation: None needed.

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
Kit fox <i>(Vulpes macrotis)</i> CO – E	<p>Range: Species occurs from Oregon and Idaho south to California and Texas (Olson 2019). Western Colorado represents the northeastern extent of kit fox range (CPW 2005).</p> <p>Habitat: Species occurs in semi-desert shrublands of saltbush, shadscale, and greasewood.</p>	<p>Potential to Occur: None. The PRA is outside of the species’ known range and does not contain suitable habitat (semi-desert shrublands).</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>
Preble’s meadow jumping mouse <i>(Zapus hudsonius preblei)</i> ESA – T CO – T	<p>Range: Within stream and river systems along the Front Range in Colorado, generally below 7,600 ft.</p> <p>Habitat: Well-developed riparian or wetland shrub vegetation with undisturbed adjacent diverse grasslands.</p>	<p>Potential to Occur: None. The PRA is outside of the species’ known range and is above the species’ elevation range.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>
River otter <i>(Lontra canadensis)</i> CO – T	<p>Range: Populations restored in the 1970s within stream systems in western Colorado, with some scattered populations along several drainages, including the Upper South Platte River (Olson 2019).</p> <p>Habitat: Healthy forested riparian habitats, with some overhanging banks along long reaches, and/or beaver ponds within 4th order or greater stream systems.</p>	<p>Potential to Occur: None. Twin Creek is a relatively small headwater stream and there are no confirmed records of this species’ on Twin Creek (CPW 2018). Nearest known reintroduction sites to the north in the Dillon Reservoir and its associated watershed area.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>
Wolverine <i>(Gulo gulo)</i> CO – E	<p>Range: Historically known from the mountainous regions of North America, but likely disappeared from Colorado by 1919. A few transient reports since 2009, but unlikely to be any permanent populations in Colorado.</p> <p>Habitat: High alpine forests and tundra where snow persists in places throughout most or all of the year.</p>	<p>Potential to Occur: None. The PRA does not contain suitable habitat (high alpine forests) for the species.</p>	<p>No Effect. Species does not have any potential to occur and would not be impacted by the Project.</p> <p>Mitigation: None needed.</p>

Species and Status ¹	Habitat and Range	Potential to Occur	Potential Effects
Plants			
Western prairie fringed orchid (<i>Platanthera praeclara</i>) ESA – T	<p>Range: Species occurs from Manitoba south to Wyoming, Oklahoma, and Missouri; not known to occur in Colorado (Olson 2019).</p> <p>Habitat: Species occurs in mesic areas of the tallgrass prairie and wet meadows (Olson 2019).</p>	<p>Potential to Occur: None. The PRA is located outside of the species known range.</p>	<p>No Direct Effect. No potential for species to occur within the PRA.</p> <p>See discussion on water-related activities on the South Platte River at top of Section 5.1.</p> <p>Mitigation: Dependent upon impacts to South Platte Basin.</p>

Source: Colorado Parks and Wildlife (2020) unless otherwise noted.

¹Status:

ESA – E = Federally endangered under the Endangered Species Act

ESA – T = Federally threatened under the Endangered Species Act

CO – E = State of Colorado endangered according to CPW

CO – T = State of Colorado threatened according to CPW

5.2 MBTA Species

Based on the inactive bird nests observed under the I-15-AO culvert, Migratory Bird Treaty Act (MBTA) species have a potential to be nesting under the Project culvert and within 300 ft of the Project, as the area surrounding the Project contains forest, scrub-shrub, and wet meadow communities. The standard specifications in CDOT Section 240 Protection of Migratory Birds During Structure Work must be followed to ensure that take of migratory birds does not occur. No disturbance activities may be conducted during the MBTA nesting season (April 1 to August 31)¹ unless the following steps are taken (per CDOT Section 240.02):

- (1) The Contractor shall remove existing nests prior to April 1. If the Contract is not awarded prior to April 1 and CDOT has removed existing nests, then the monitoring of nest building shall become the Contractor’s responsibility upon the Notice to Proceed.
- (2) During the time that the birds are trying to build or occupy their nests, between April 1 and August 31, the Contractor shall monitor the structures at least once every three days for any nesting activity.
- (3) If birds have started to build any nests, the nests shall be removed before they are completed. Water shall not be used to remove the nests if nests are located within 50 ft of any surface waters.
- (4) Installation of netting may be used to prevent nest building. The netting shall be monitored and repaired or replaced as needed. Netting shall consist of a mesh with openings that are ¾ inch by ¾ inch or less.

5.3 BGEPA Species

The screening analysis determined that both species protected under the Bald and Golden Eagle Protection Act (BGEPA) have some potential to occur within the PRA. The basis of determination of each species’ potential to occur within the PRA is provided in Table 2.

Table 2. Potential for Occurrence of BGEPA* Species within the PRA

Species	Known Habitat Preferences	Distribution and Occurrence Records	Potential to Occur in the PRA
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Inhabits coastal areas, estuaries, and inland waters with unimpeded horizontal and vertical aspects for catching prey. Found in habitats with open canopy and easy-to-access mature, large trees for perching and nesting (CPW 2016a). The species typically prefers trees within 1 mile of open water with fish (CPW 2016a).	Restricted to North America, mainly in Canada and the U.S. In Colorado, bald eagles are found throughout much of the state during both the summer and winter. They can often be seen near large reservoirs and along major rivers (South Platte, Arkansas, Rio Grande, Yampa, Colorado) (CPW 2020). The species has not been recorded breeding in Teller County, but has been recorded breeding in the adjacent Park and Fremont Counties (CPW 2016a).	Possible. The PRA is within the species’ geographic range and contains appropriate foraging habitat for the species (a perennial stream with fish populations), as well as large, mature trees within the vicinity of the PRA to support nesting habitat.

¹ Although the Project is located at a high elevation that may result in a shorter nesting season, a change in the official MBTA nesting season would require approval of specific dates from a CDOT biologist (pers comm J. Peterson, Oct 14, 2020).

Species	Known Habitat Preferences	Distribution and Occurrence Records	Potential to Occur in the PRA
Golden Eagle (<i>Aquila chrysaetos</i>)	Occupies a wide variety of plant communities, including tundra, alpine meadows, coniferous forests, high- and mid-elevation pine forest, piñon-juniper woodlands, sagebrush and other shrub habitats, grassland, and agricultural habitats (CPW 2020, Tesky 1994). Species is known to construct its nest in areas with little to no human activity, in tall trees, cliffs, canyons, or rock ledges, near open areas where they forage for prey (Corman and Wise-Gervais 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994), generally in open habitats where prey is available (Kochert et al 2002).	In North America, the species is found from Canada south to central Mexico (Tesky 1994). Within Colorado, golden eagles can be found year-round (CPW 2020).	Possible. The PRA is within the species' geographic range and contains suitable habitat. Numerous sightings have occurred within several miles of the PRA (eBird 2020), and habitat around the PRA contains tall trees and cliffs, although the presence of human activity along the road and at Florissant may limit nesting in the PRA.

*Bald and Golden Eagle Protection Act

5.4 Wildlife

The potential for big game and other wildlife to occur within the PRA was assessed. There are no wildlife corridors mapped within the vicinity of the PRA. The closest wildlife linkage corridors (one for the ESA-listed Preble's meadow jumping mouse [*Zapus hudsonius preblei*] and one for elk, bear, and mountain lions) are more than 22 miles from the PRA on the other side of the Rampart Range from the PRA. Roadkill counts recorded by CDOT from 2005-2018 show one deer and one elk roadkill have been recorded within the PRA (Figure 3) and six more deer roadkill have been recorded within 1 mile of the PRA (OTIS 2020).

All box culverts and bridges have some potential to be roosting sites for many common bat species as well as for bat species of concern such as Townsend's big-eared bat (*Corynorhinus townsendii*) or the fringed myotis (*Myotis thysanodes*). Per CDOT guidance, all structures with the potential to support roosting sites for bats must be inspected for bat presence prior to removal (Attachment B).

Twin Creek and its tributaries are generally narrow and shallow around the PRA, limiting recreational fishing opportunities. Fish species commonly recorded along Twin Creek include brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), and brook trout (*Salvelinus fontinalis*). No designated Aquatic Native Species Conservation Waters are located within the same watershed as the PRA.

Since the Project is a bridge replacement project that will not influence the amount of road use along US 24 after construction has been completed, the Project is not anticipated to affect terrestrial animal use of the PRA or movements in the vicinity of the PRA upon completion of the Project. The current structure consists of closed bottom culvert that was observed to convey a narrow, shallow channel of water during the site visit in late August.

5.5 Floodplain

The FEMA Flood Map Service Center is a public source for flood hazard information produced in support of the National Flood Insurance Program. This mapping tool provides information on whether a project is being proposed within a floodplain, which has permitting implications if the project is within a 100-yr floodplain.

The FEMA Flood Insurance Rate Map (FIRM) has mapped the entirety of the PRA as occurring within an Area of Minimal Flood Hazard (Zone X; see Attachment C). The bridge and road rebuild will be designed to meet CDOT construction standards. Because the Project is not within the 100-year floodplain and the Project is not expected to alter any Special Flood Hazard Areas, the Project will not require floodplain permitting. The hydraulics of the watershed are currently being assessed and further details regarding flood design capacity will be provided in the Bridge Bundle Preliminary Hydraulics Report.

5.6 Potential Waters of the U.S.

Section 404 of the CWA regulates the discharge of dredged or fill material into WOTUS and is administered by the USACE and EPA. The Potential Impact Area (PIA; see Aquatic Resources Delineation Report, Figure 2) was surveyed for any potential wetlands or non-wetland WOTUS on August 29, 2020. All potential features were fully investigated and delineated if found to either 1) satisfy all three parameters as defined by the USACE to be a wetland, or 2) present an OHWM² indicating a potentially jurisdictional WOTUS. Consultation with the USACE will be needed to confirm the delineation and jurisdictional extent of WOTUS, which is typically completed within 1-3 months of permit submittal. Details and a mapping of the full delineation can be found in the Aquatic Resources Delineation Report.

Impacts to these resources would need to be approved or permitted by the USACE. Depending on the level of impacts, the Project would likely require permitting under the Nationwide Permit (NWP) program. The NWP program is available for projects with relatively minor impacts (the exact nature of the impacts and acreage thresholds depend on the applicable NWP), while Individual Permits (IPs) are required for projects with larger impacts and can involve a lengthy permitting process.

Areas with potential WOTUS or wetland features located within the PRA but outside of the anticipated Project footprint (per communications with the Project engineers) were outlined as Avoidance Areas (Figure 5). In the event the proposed Project footprint is extended into the Avoidance Areas, these areas will require a formal delineation by a qualified specialist prior to any Project activities.

5.6.1 Wetlands

During the survey, a total of 0.12 acres were delineated across three wetlands within the more restrictive PIA. These wetlands abut the river and/or a drainage channel discharging into the river and therefore are considered potentially jurisdictional wetlands. Specific details such as descriptions and data sheets are provided in the Aquatic Resources Delineation Report.

² As defined in RGL-05-05.

5.6.2 Non-wetland Waters

During the survey, the boundaries of the bed and bank of the main channel of Twin Creek were delineated (totaling 0.13 acres and 465 linear ft within the PRA). A tributary to Twin Creek (totaling 0.05 acres and 175 ft) that discharges into the main channel of Twin Creek immediately downstream of the bridge was also delineated within the PRA. Specific details on the non-wetland waters are provided in the Aquatic Resources Delineation Report.

5.6.3 Avoidance Areas

A total of three Avoidance Areas are located within the PRA (Figure 5). AA 1, located on the northern side of the PRA is the drainage associated with Bridge I-15-T, another bridge within the Bridge Bundle Design Build project. AA2 is a portion of the main channel of Twin Creek located within the PRA but outside of the PIA. AA 3 consists of potential wetlands on the western bank of the main Twin Creek channel. A formal delineation would be required if the final design will impact any of the Avoidance Areas, with the exception of AA1, which has been delineated in the I-15-T Aquatic Resources Delineation Report. Photographs of the Avoidance Areas are provided in Attachment D – Photolog.

5.7 Stormwater

Stormwater Discharges for Construction Activities

The Colorado Department of Public Health and Environment (CDPHE) manages stormwater discharges through the Colorado Discharge Permit System, under Section 402 of the Clean Water Act and the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended). Runoff from construction activities that goes into or adjacent to any surface water in the state are regulated based on the area of land disturbance.

Disturbances (including construction activity, borrow or fill sites within ¼ mile of a construction site, and dedicated asphalt or concrete batch plants and masonry mixing stations) that are less than 1 acre do not require any coverage. Disturbances exceeding 1 acre require authorization under CDPHE, either through a General Permit or an Individual Permit. Activities qualifying for a general permit include the following criteria:

- Construction sites that will disturb one acre or more; or
- Construction sites that are part of a common plan of development or sale; or
- Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:
 - Contributes to a violation of a water quality standard; or
 - is a significant contributor of pollutants to state waters.

Applicants must apply for a General Permit that includes a Stormwater Management Plan (SWMP) in accordance with Part 1.C of the CDPS General Permit, at least 10 days prior to commencing Project activities. If activities are not covered under the scope of the General Permit, an Individual Permit will be required through the CDPHE.

5.8 Hazardous Waste

Potential sources of hazardous waste discovered within the vicinity of the PRA include the existence of a rail line from the former Colorado Midland Terminal Railroad that was incorporated

into US 24 when the highway was constructed, as well as the presence of transformers adjacent to the ROW (Attachment E). The former railroad and transformers may potentially have contaminated the surrounding soils with hazardous materials such as metals, petroleum products, and PCBs.

5.9 Cultural Resources

The review of archaeological, historic, and paleontological resources is being conducted by CDOT and will be prepared under separated cover.

6. Discussion/Recommendations

6.1 Potential Impacts

The degree of potential impacts will be dictated by the exact approach of the design-builder. However, the range of potential impact could include: temporary disruption of the channel area, including channel bed and banks, surrounding the bridge location; some temporary loss of vegetation and habitat area in the surrounding wetlands during constructions; and some minor permanent loss of vegetation and wetlands habitat immediately surrounding placement of new bridge abutments/wing walls and possibly other bridge or culvert elements. There will also be some potential risk of sedimentation or other indirect run-off into the downstream channel and the surrounding wetlands and riparian areas during the construction phase. During construction, local wildlife may be temporarily disturbed by noise and movement of the equipment.

Depending on the final design and construction plans with their corresponding impacts, various permits would likely be needed and could include a Section 404 permit from the USACE, consultation with the CPW, Section 401 certification, and various stormwater (SWPPP) and construction permits.

The Project also falls under the jurisdiction of Senate Bill 40 (33-5-101-107, CRS 1973 as amended) due to its proximity to Twin Creek, and therefore wildlife certification from CPW will be required.

6.2 Avoidance and Mitigation Measures

As a part of the design process, since this work is in an environmentally sensitive area, proof of avoidance or minimization efforts will need to be shown to the regulatory agencies as a part of the permit process. As a result, mitigation measures will need to be developed and implemented by the design-build team and approved by the applicable agencies. These mitigation measures may include items such as construction best management practices (stormwater silt fencing, construction procedures, etc.), compensatory wetland mitigation (if impacts exceed minimum thresholds), wildlife mitigation (such as adjustment of construction schedule to avoid breeding seasons), floodplain mitigation, and cultural/historic mitigation.

6.2.1 MBTA

In order to avoid violating the Migratory Bird Treaty Act of 1918, all vegetation and/or nest removal timing and procedures must be conducted outside of the breeding season (April 1-August 31) unless the required steps outlined in CDOT Section 240 Protection of Migratory Birds During Structure Work are met. If any trees or shrubs are to be removed or work on/under bridges is to be completed between April 1 and August 31, a survey must be completed for active nests. If an active nest(s) is found no work may be done within 50 ft of the nest(s) until the nest(s) becomes inactive. To avoid the survey requirement, it is recommended that vegetation removal occurs after August 31 and before April 1.

6.2.2 Invasive Species

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

- New Zealand Mud Snails
- Zebra Mussels
- Quagga Mussels
- Whirling Disease
- All other aquatic invasive species

Equipment that shall be treated includes all parts of machinery and vehicles of all types and sizes that came into contact with the live water. Gear that must be treated includes boots, waders, tools, and all other materials and attire used previously in the live water. The Contractor shall use one of the following two treatments:

- Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.)
- Spray/soak equipment with a solution of commercial grade quaternary ammonium disinfectant compound containing at least 8.0% active ingredient diluted in solution to achieve at least 0.8% concentration (roughly 12 ounces of product per gallon of water). Specifically, a 1:15 solution of Quat 4 or Super HDQ Neutral institutional cleaner and water, could be used for effective treatment.
- Treated equipment should be kept moist for a least 10 minutes, managing rinsate as a solid waste in accordance with local, county, state, or federal regulations, OR
- Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.)
- Spray/soak equipment with water hotter than 140 degrees Fahrenheit for at least 10 minutes.
- Clean hand tools, boots, and any other equipment that will be used in the water with one of the above options as well.
- Do not move water from one water body to another.
- Be sure equipment is dry before use.

6.2.3 Wildlife

The Project will be expected to maintain wildlife linkage connectivity and fishery passage throughout the construction phase and afterwards. The Project is not expected to affect wildlife movements in the long term, as the Project will not notably alter the existing road design and anticipated traffic patterns.

There is some potential for bat species to roost within the culvert or the vicinity of the culvert. Per CDOT guidance, removal of the structure requires prior inspection by an approved biologist to determine bat presence (Attachment B). If evidence of previous bat roosting is observed but no current roosting individuals are present, then installation of roosting preventative measures, such as the use of approved netting, is advised prior to bridge work. If active bat roosting is observed during inspection, then coordination with CDOT Wildlife Biologist is required prior to any further bridge work.

Once a final design is selected and anticipated impacts are known, the ESA-listed species should be reassessed for their potential to occur within an Action Area, meaning “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR § 402.02(d)). In the event the project has the potential to impact a listed species, consultation with the USFWS and/or CPW may be required. As part of the consultation process, species-specific surveys may be required to determine presence/absence.

6.2.4 Stormwater

To minimize flooding and environmental damage from uncontrolled, or inadequately controlled, runoff, Teller County Standards state that the final design must not allow the direct discharge of stormwater into any waterbody and must minimize directly-connected impervious areas. Potential management plans proposed by Teller County include:

- Directing runoff from at least 50 percent of all developed impervious surfaces to drain over grass buffer strips before reaching stormwater conveyance systems
- Installing infiltration devices;
- Developing constructed wetlands;
- Installing sand filters;
- Over-sizing swales, ditches, and culvert crossings; and
- Substituting low velocity grass lined swales for curb and gutter systems

6.2.5 Hazardous Waste

The investigation has identified recognized environmental conditions that could impact the PRA, and additional sampling is recommended to address the identified conditions. Prior to any underground digging or soil disturbance, a utility locate should be called to prevent damage to any existing utilities in the project area.

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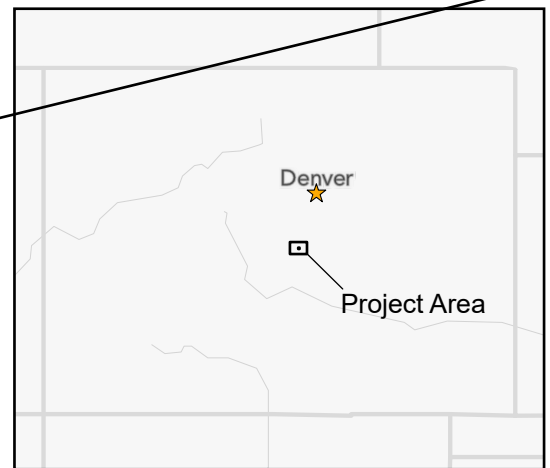
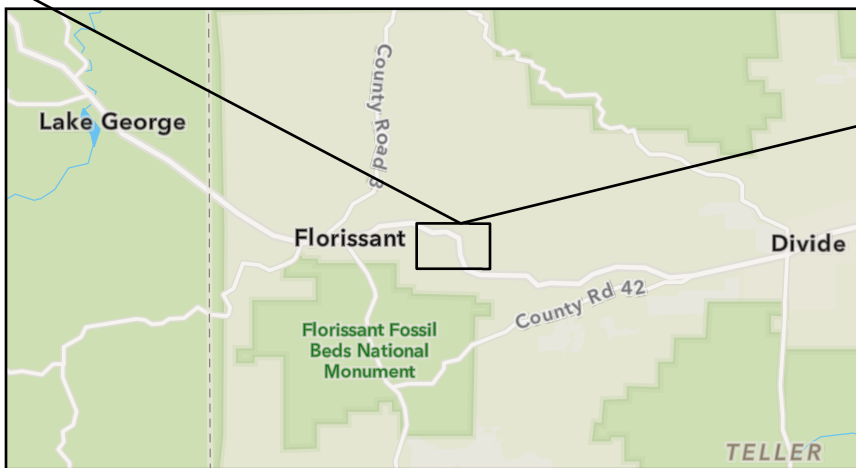
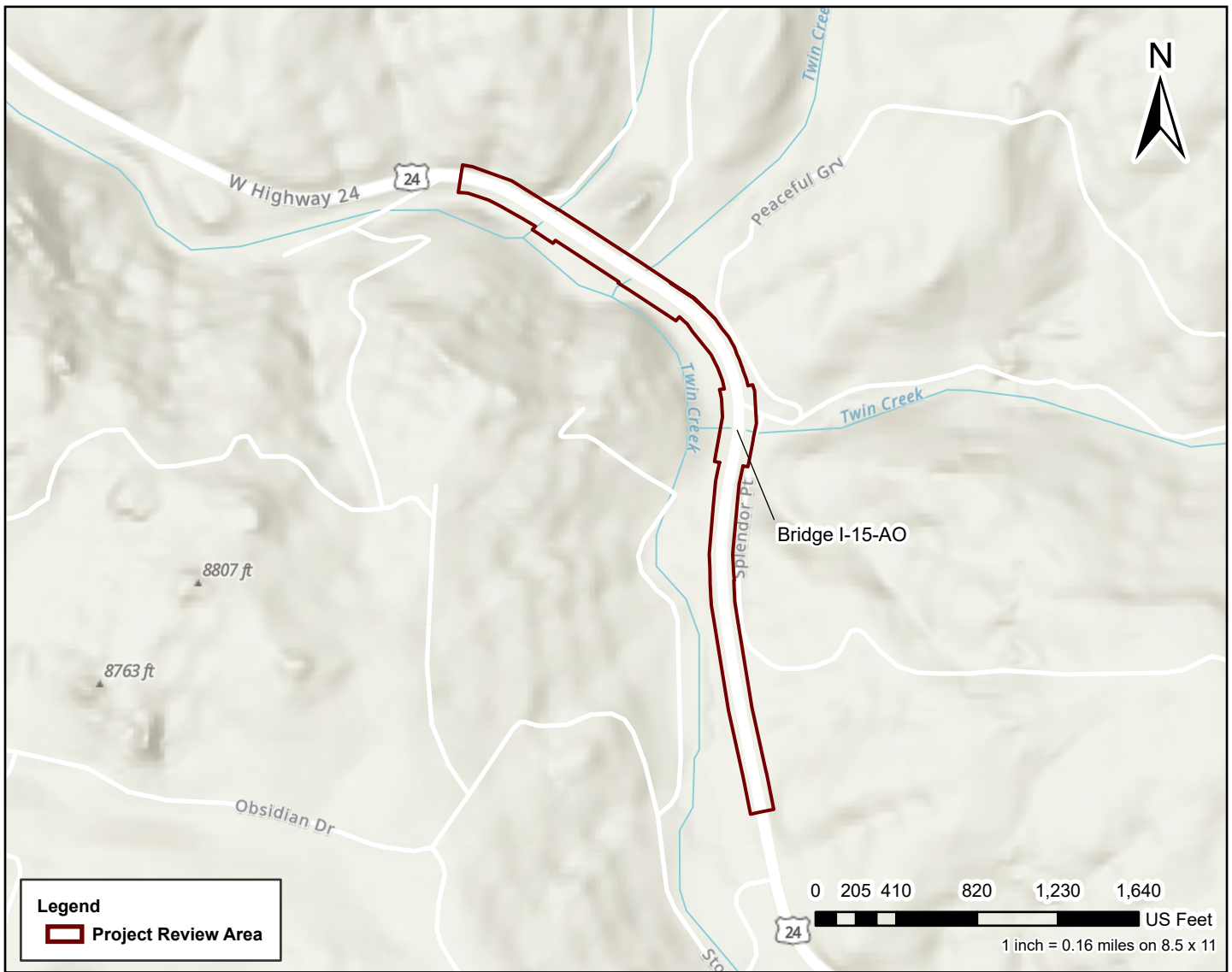
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Figures



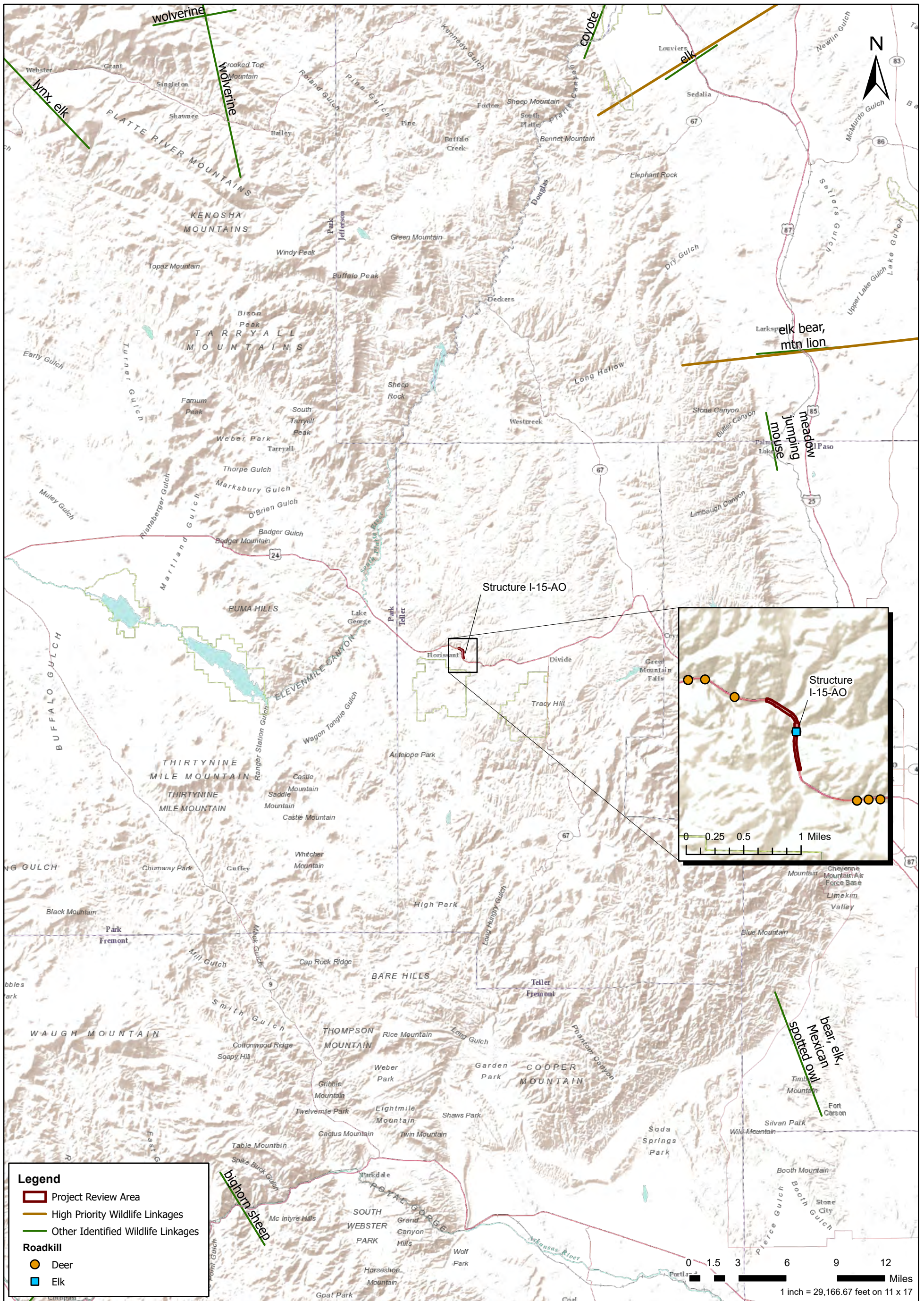
COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge I-15-AO
Desktop Analysis for Sensitive Environmental Resources

Figure 1
Vicinity Map



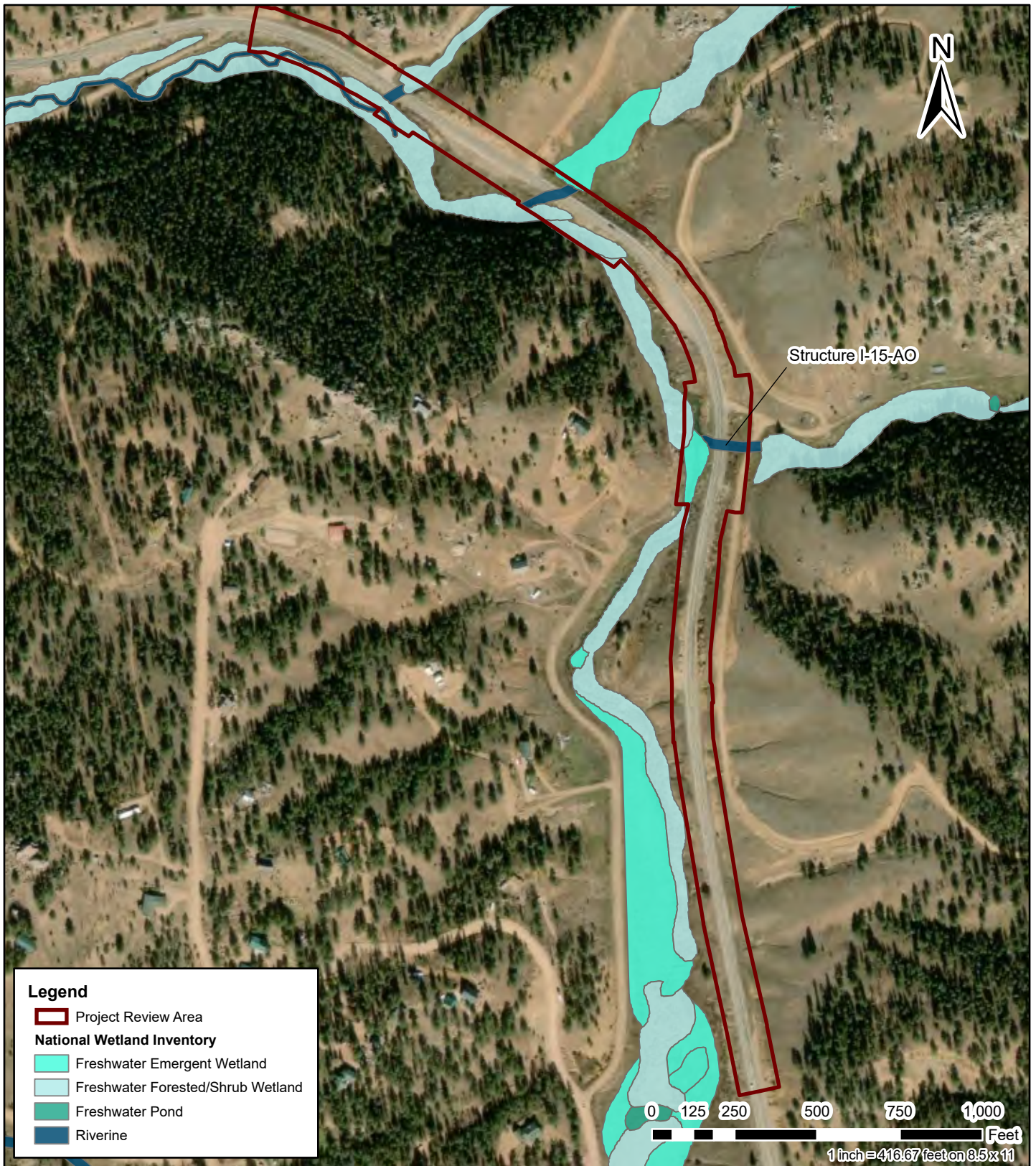
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 Region 2 Bridge Rebuild Project - Bridge I-15-AO
 Desktop Analysis for Sensitive Environmental Resources

Figure 2
 Project Review Area



COLORADO DEPARTMENT OF TRANSPORTATION
 Region 2 Bridge Rebuild Project - Bridge I-15-AO
 Desktop Analysis for Sensitive Environmental Resources

Figure 3
 Wildlife Linkages and Roadkill Records



COLORADO DEPARTMENT OF TRANSPORTATION
 Region 2 Bridge Rebuild Project - Bridge I-15-AO
 Desktop Analysis for Sensitive Environmental Resources

Figure 4
 Aquatic Resources



COLORADO DEPARTMENT OF TRANSPORTATION
 Region 2 Bridge Rebuild Project - Bridge I-15-AO
 Desktop Analysis of Sensitive Biological Resources

Figure 5
 Potential Waters of the U.S.

Attachment A

USFWS Information for Planning and
Consultation (IPaC) Query

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location


Teller County, Colorado



Local office

Colorado Ecological Services Field Office

☎ (303) 236-4773

 (303) 236-4005

MAILING ADDRESS

Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486

PHYSICAL ADDRESS

134 Union Boulevard, Suite 670
Lakewood, CO 80228-1807

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

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

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Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department

of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
<p>Least Tern <i>Sterna antillarum</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8505</p>	Endangered
<p>Mexican Spotted Owl <i>Strix occidentalis lucida</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8196</p>	Threatened
<p>Whooping Crane <i>Grus americana</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/758</p>	Endangered

Fishes

NAME	STATUS
<p>Pallid Sturgeon <i>Scaphirhynchus albus</i></p> <p>This species only needs to be considered if the following condition applies:</p> <ul style="list-style-type: none"> • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. <p>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7162</p>	Endangered

Flowering Plants

NAME	STATUS
Western Prairie Fringed Orchid <i>Platanthera praeclara</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none">• Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1669	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds>

</pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Dec 1 to Aug 31

Brewer's Sparrow *Spizella breweri*

Breeds May 15 to Aug 10

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9291>

Brown-capped Rosy-finch *Leucosticte australis*

Breeds Jun 15 to Sep 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Golden Eagle *Aquila chrysaetos*

Breeds Jan 1 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/1680>

Olive-sided Flycatcher *Contopus cooperi*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3914>

Pinyon Jay *Gymnorhinus cyanocephalus*

Breeds Feb 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9420>

Rufous Hummingbird *selasphorus rufus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence

score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

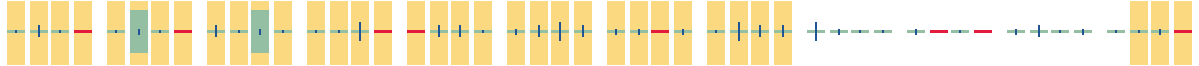
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

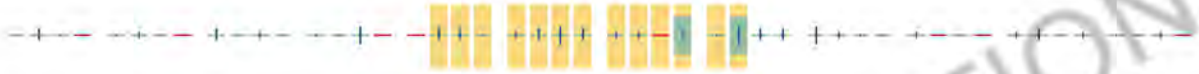
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



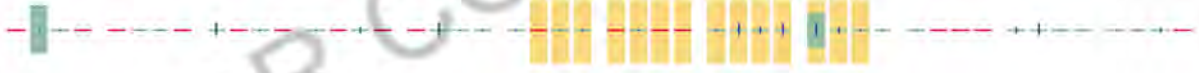
Bald Eagle
Non-BCC
Vulnerable (This
is not a Bird of
Conservation
Concern (BCC)
in this area, but
warrants
attention
because of the
Eagle Act or for
potential
susceptibilities
in offshore
areas from
certain types of
development or
activities.)



Brewer's
Sparrow
BCC - BCR (This
is a Bird of
Conservation
Concern (BCC)
only in
particular Bird
Conservation
Regions (BCRs)
in the
continental
USA)



Brown-
capped Rosy-
finch
BCC Rangewide
(CON) (This is a
Bird of
Conservation
Concern (BCC)
throughout its
range in the
continental USA
and Alaska.)



Golden Eagle
BCC - BCR (This
is a Bird of
Conservation
Concern (BCC)
only in
particular Bird
Conservation
Regions (BCRs)
in the
continental
USA)



NOT FOR CONSULTATION



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species

that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and

groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1A](#)

[PEM1C](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSS1C](#)

[PSS1A](#)

RIVERINE

[R4SBA](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography.

A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

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

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

Data exclusions

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

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Attachment B

Bridge Assessment Guidance

APPENDIX B: Bridge Assessment Guidance

FHWA/State DOT/FRA

Preliminary Bat Assessment Guidelines for Bridges/Structures

DOT Environmental Division

Adapted from the Indiana Department of Transportation 2010 Bridge Inspection Manual and the Bernardin, Lochmueller and Associates 2007 document.

The guidelines in this document describe favorable characteristics of bridges/structures that may provide habitat for many bat species and preliminary indicators intended to determine if any bat species are using bridges/structures.

Individuals conducting reviews for bats must use the Bridge Assessment Form and must include a copy of the completed form in their project file. Individuals assessing bridges/structures should employ appropriate safety measures in conducting these reviews and avoid touching any bats. Recommended equipment include a flashlight (preferably a headlamp), hard hat, binoculars or spotting scope, digital camera, check list and a fine- to medium-point permanent marker or pen. It is advisable that individuals also consider having a dust mask, cellular phone, and boots if access beneath structures is desired. Easily removed, protective coveralls may be advisable if access requires crawling.

Bridge/Structure assessments conducted pursuant to the range-wide programmatic consultation are valid for one year from the date of the assessment. If a mist net or acoustic survey is used in place of the Bridge/Structure assessment protocols those surveys are typically valid for two years, but agencies should verify with the appropriate U.S. Fish and Wildlife Service (Service) Field Office. There is no requirement for a follow-up evaluation seven days prior to beginning construction provided the assessment or survey follows the required protocols.

Favorable Characteristics

Cracks in Concrete

Cracks in the concrete are used by bats as a foothold in roosting (Photo 1). In addition, some bats may be hidden from sight in wider cracks in the concrete and behind deteriorating concrete sections in the ceiling or walls. Look for cracking along support beams and inner walls especially below a fillet (a concrete filling between ceiling and vertical beam). During inspection, sounds may be heard coming from behind such cracks and/or expansion joints.

Expansion Joints (Bridges)

Expansion joints can provide protected cover for bats (Photos 2 and 3), but do not always provide habitat, depending upon whether they are obstructed by road debris or other blockages to use. If possible during the assessment, individuals should look into expansion joints or in other cracks with a flashlight. If joints are used by bats, often there will be guano under the joints (Photos 4-6), but not always, since the joint may be located over water.

Cave-like Environment

While assessing bridges or structures, look for dark environments that mimic cave-like conditions such as under the deck in the case of a bridge (Photos 12 and 13) or an attic in the case of a structure. This may involve crawling under low areas so a hard hat is recommended. Such places (e.g., a concrete bunker secreted into a hillside with an open front) provide protection from wind, rain, sleet, hail and predators. Bats do not roost near the ground where predators (cats, raccoons, etc.) can reach them. Roosting is usually at least 4 feet from the ground.

Large Rivers in Wide Floodplains (Bridges)

Many concrete bridges that span larger rivers in wide floodplains offer excellent areas for roosting, although bats are not restricted to using these sites. These areas tend to have an ample food supply and may also serve as historic flyways for bats during migration (i.e., March-May and September-November). These bridges may also offer opportunities for mating in late fall.

Preliminary Indicators of Bat Presence

The four indicators presented here document physical observations that can easily be made for individual structures. Each of these indicators should be considered on its own merits and the presence of even one of these on a bridge is enough documentation to confirm bat usage. If questions arise regarding interpretation of these indicators, individuals should contact the District Environmental Manager for clarification or assistance. (NOTE: Some of these indicators, visual and sound, will not be present during normal hibernation periods, as bats do not hibernate under bridges. Hibernation usually occurs between September and May, but contact your local USFWS Field Office for exact dates.)

Visual

Look for bats flying or roosting (hanging) during the assessment (Photo 1, 2, & 8). A flashlight or headlamp will be needed and binoculars may be necessary when viewing higher areas. If bats are present; record numbers as best as possible and their locations. Note any dead or injured bats. A sketch map would be helpful (can use bridge plan sheet as base for sketch). Thermal infrared cameras or emergence surveys can be used to document bat use.

Use of presence/absence summer surveys may also be used if the following apply:

- A presence/absence summer survey is already necessary because there will be tree removal associated with the project. The results of the presence/absence summer survey for a near-by project is not sufficient. The survey should be specific for the project in question.
- Survey points over water/edge of water (if there is a small stream) should be incorporated in the study plan.
- Survey points should be identified first based on the habitat on site then, if a point is not within 0.25 miles of a bridge, an additional level-of-effort is necessary. Either a survey point should be added within 0.25 miles, or the previous mentioned techniques (bridge inspection, emergence survey, thermal infrared cameras) should be used.
- The Service Field Office is required to review the survey SOW.
- If the bridge is within a known maternity colony home range a bridge assessment is required.

Sound

Listen for high pitched squeaking or chirping during the assessment and identify location(s) for later examination by DOT staff. This may be helpful in locating bats within deep cracks or open joints. A sketch map would be helpful.

Droppings (Guano)

Bat droppings are small (mouse-like in appearance but less regular) brown or black pellets (Photos 6 - 8). Older droppings may be gray in color. These droppings will accumulate on the ground, floor of a covered bridge or on structural components below where bats roost. Droppings may also adhere to support beams and walls below roosts.

Note bat droppings and their location. Check under likely roosting spots such as cracks, cave-like areas, and expansion joints. If guano is present, the inspector may wish to wear a dust mask. Also, it is advisable to wear rubber boots to minimize tracking of any guano into vehicle(s) and other places.

Staining

Stains may appear wet and are usually found in dark places. Look for four to six inch wide dark stains located on concrete support beams and walls immediately below the ceiling of the bridge, and beneath joints (Photos 8 - 11).

Literature Cited

Bernardin, Lochmueller, and Associates, Inc. 2007. Bridge Inspection Checklist for Bats. Unpublished. Evansville, Indiana.

Indiana Department of Transportation. 2012. INDOT Bridge Inspection Manual. Indiana. Available from: http://www.in.gov/dot/div/contracts/standards/bridge/inspector_manual/index.htm.

Keeley, Brian W. and Merlin D. Tuttle. 1999. Bats in American Bridges. Bat Conservation International, Inc., Austin, TX. Resource Publication No. 4, 41 pp.

Photos *



Photo 1: Bats hanging from cracks along Support beams



Photo 2: Visible bats within an expansion joint



Photo 3: Example of open concrete joint used by bats



Photo 4: Guano deposits visible from bridge deck, on top of pier



Photo 5: Guano deposit on pier, obscuring structural features.



Photo 6: Bat Guano on Riprap



Photo 7: Staining along longitudinal joint. Note guano deposits on the ground. Photo 8: Staining on underside of expansion joint from bat use.



Photo 9: Staining on sides of pier caps



Photo 10: Guano staining on side of pier



Photo 11: Bats Roosting & Associated Staining



Photo 12 and 13: Bridge Design Mimicking “Cave-like” Atmosphere



Photo 14: NLEBs Roosting Under a Timber Decked Bridge

* Photos courtesy of Tom Cervone, Bernardin, Lochmueller and Associates, Jeff Gore, Florida Fish and Wildlife Conservation Commission, Rick Reynolds, Virginia Department of Game and Inland Fisheries, and Kraig McPeck, U.S. Fish & Wildlife Service.

APPENDIX D: Bridge/Structure Assessment Form

Bridge Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside, from activities above that bore down to the underside, or that could impact expansion joints, from deck removal on bridges, or from structure demolish. Each bridge/structure to be worked on must have a current bridge inspection. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the US Fish and Wildlife Service, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing structures prior to allowing any work to proceed.

DOT Project #	Water Body	Date/Time of Inspection
---------------	------------	-------------------------

Route:	County:	Federal Structure ID:	Bat Indicators				Notes: (e.g., number & species of bats, if known. Include the results of thermal, emergent, or presence/absence summer survey)
Check all that apply. Presence of one or more indicators is sufficient evidence that bats may be using the structure.							
			Visual	Sound	Droppings	Staining	

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep		Crevices, rough surfaces or imperfections in concrete		Human disturbance or traffic under bridge/in culvert or at the structure	High	Low	None
All crevices >12" deep & not sealed		Spaces between walls, ceiling joists		Possible corridors for netting	None/poor	Marginal	excellent

All guardrails				Evidence of bats using bird nests, if present?	Yes	No	
All expansion joints							
Spaces between concrete end walls and the bridge deck							
Vertical surfaces on concrete I-beams							

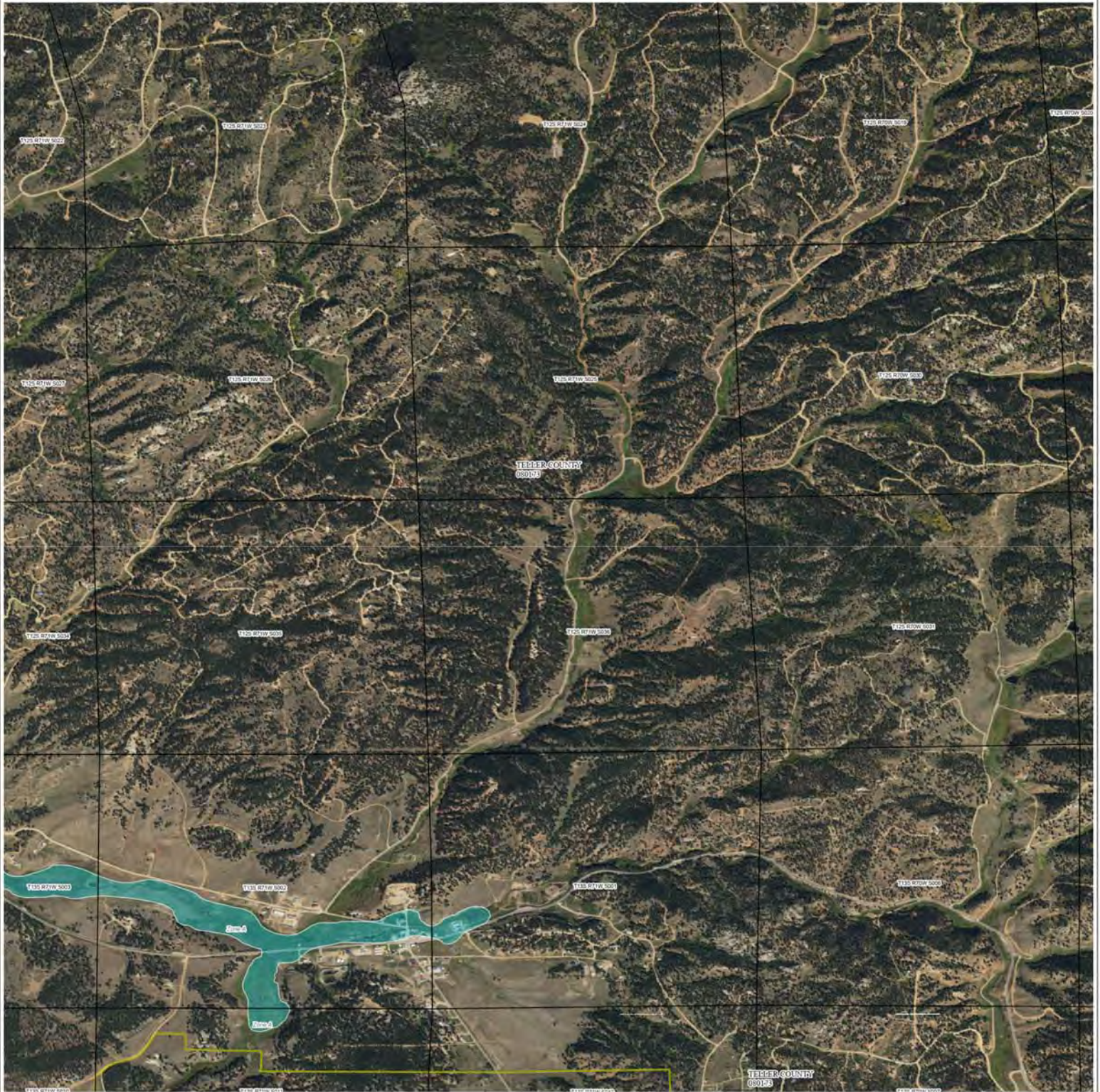
Assessment Conducted By: _____ _____	Signature(s): _____
District Environmental Use Only:	Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed a minimum of 1 year prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Informal Consultation, regardless of whether assessments have been conducted in the past. **Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that structure in subsequent years.**
2. Legible copies of this document must be provided to the District Environmental Manager within two (2) business days of completing the assessment. Failure to submit this information will result in that structure being removed from the planned work schedule.
3. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the USFWS, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
4. Estimates of numbers of bats observed should be place in the Notes column.
5. Any questions should be directed to the District Environmental Manager.

Attachment C

FEMA Flood Insurance Rate Map



USGS The National Map Orthometry, Data - refreshed October, 2020.

FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

	Without Base Flood Elevation (BFE)
	With BFE or Depth Zone AF, AD, AH, V, X
	Regulatory Floodway
	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes Zone X
	Area with Flood Risk due to Levee Zone X
	NO SCREEN Area of Minimal Flood Hazard Zone X
	Effective LOMIs
	Area of Undetermined Flood Hazard Zone X

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIS, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-362-7267) or visit the FEMA Flood Map Service Center website at <https://www.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities owning land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

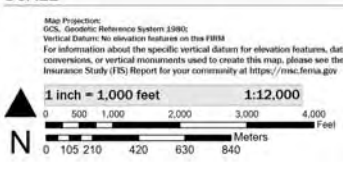
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-435-6629.

Base map information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAD83, dated April 11, 2015.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 11/09/2020 8:29 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL, and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at <https://www.fema.gov/media-library/standard/documents/153415>.

This map complies with FEMA's standards for the use of digital flood maps. If it is not valid as described below, the base map shown complies with FEMA's base map accuracy standards. This map image is void if the use or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
TELLER COUNTY, COLORADO
AND INCORPORATED AREAS
PANEL 160 of 415

Panel Contains:

COMMUNITY	NUMBER	PANEL
FLORETTANT BEDS	00010	0160
NATIONAL MONUMENT	00012	0160
TELLER COUNTY		

Attachment D

Photopages



Photo 1. Avoidance Area 1 consists of a drainage that runs under the nearby Bridge I-15-T, another bridge in the Region 2 Bridge Bundle Design Build project.



Photo 2. Avoidance Area 2 consists of a portion of the main channel of Twin Creek outside of the Potential Impact Area that overlaps with the CDOT right-of-way within the Project Review Area.



Photo 3. Avoidance Area 3 consists of potential wetlands and riparian vegetation located on the western bank of the main channel of Twin Creek. This photo is taken from the top of Bridge I-15-AO on the western side of the bridge facing north. Avoidance Area 3 is visible on the left side of the photo, on the far side of the channel.

Attachment E

Hazardous Waste Memorandum

COLORADO DEPARTMENT OF TRANSPORTATION INITIAL SITE ASSESSMENT (ISA)	Region: 2 Route ID:	Project No.: 29715 Project Code (SA#):
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Project Description

Project Name: Bridge I-15-AO		
Milepost Begin: 271	Milepost End: 272	County: Teller
Location: US Route 24		
Main Project Elements: Bridge/Culvert Replacement		

Project Features (Check if applies)

<input type="checkbox"/> Structure Acquisition	<input checked="" type="checkbox"/> Structure Modification	<input checked="" type="checkbox"/> Structure Demolition
<input type="checkbox"/> New ROW	<input type="checkbox"/> Easements	<input type="checkbox"/> Utility Relocation
<input type="checkbox"/> Excavation/Drilling	Disturbance depth (if known): ft	<input type="checkbox"/> Dewatering
Gw Anticipated: No	Depth to gw (if known): ft	Gw flow direction (if known):

Records Review & Interview(s)

The following records/sources were used in this assessment ('No' is implied if unchecked):

ASTM Standard Environmental Record Sources OPS CDPHE CDOT Internal Database Date:
 ASTM Standard Search Radii or Modified Search Radii:
 Previous Environmental Reports/CDOT Files:
 Other Files/Databases (Assessor, Fire dept., Building, Planning, etc.):

Topographic Map(s) Current – date: Historic – year(s): **1894, 1901, 1954, 1956, 1957, 1958, 1959, 1962, 1966, 1983, 1989, 1994, 2011, 2013, 2016, 2019**

Aerial Photograph(s) Current – date: Historic – year(s): **10/14/2017**

Sanborn Map(s) – year(s):
 Local Street Directories – year(s):

Historic Land use(s) within the project area (if known): **Historically, the Colorado Midland Railroad was in the same location as the current US Route 24, residential properties with large undeveloped areas.**

Interviews (Names/Title/Date/Comments): **N/A**

Site Reconnaissance & Description

Visual inspection conducted Inspection Date: **8/29/2020**
 If 'No' document the reason:

Project area and land use(s) description:
Bridge and CDOT right-of-way, 2000 feet each side of the bridge
 Industrial Light Industrial Commercial Residential Agricultural Undeveloped Other:

Adjacent land use(s) description:
The surrounding area is generally residences with large parcels of land that are primarily undeveloped
 Industrial Light Industrial Commercial Residential Agricultural Undeveloped Other:

Potential Environmental Concerns on the immediate project area or directly adjacent to it

(Select from dropdown menu – Yes, No, Expected, or Unknown)

Potential Environmental Concern	Project Area	Adjacent Area	Potential Environmental Concern	Project Area	Adjacent Area
Evidence of underground tanks (pipes, vents, fill caps, etc.)	No	No	Protected/fenced/placarded area(s)	No	No
Aboveground storage tank(s)	No	Expected	Liquid waste (pits, ponds, etc.)	No	No

Potential Environmental Concerns on the immediate project area or directly adjacent to it
 (Select from dropdown menu – Yes, No, Expected, or Unknown)

Potential Environmental Concern	Project Area	Adjacent Area	Potential Environmental Concern	Project Area	Adjacent Area
Monitoring/water well(s)	No	No	Oil sheen (soil/water)	No	No
Electrical/transformer Equipment	No	Yes	Oil/gas well(s)	No	no
Cistern(s), sump(s) drain(s)	No	No	Mine tailings/waste	No	No
Barrel(s), drum(s), container(s)	No	No	Painted/preserved material(s)	No	No
Stockpile, surface trash, debris	No	No	Odor	No	No
Exposed/buried landfill	No	No	Chemical storage	No	No
Batteries	No	No	Suspect asbestos containing material	No	Unknown
Surface staining	No	No	Suspected methamphetamine lab	No	No
Stressed vegetation	No	No	Historic Railroad	Expected	Unknown

Findings/Conclusions:

Are known hazardous or other waste sites on or adjacent to the project area, which may affect the project? **No**
 Explain: **There are no known hazardous waste sites on or adjacent to the project area.**

Recommendations:

Materials Management Plan
 Force Account
 Modified CDOT Specification(s)
 Additional Assessment/Investigation*
 Explain: **Historically, the Colorado Midland Railroad was identified as being scrapped in the early 1920s, and much of the lines grade was incorporated into the modern day US Route 24. This indicates the potential for soil contamination beneath the paved road. Soil samples are recommended. Prior to any underground disturbance, a utility locate should be conducted to determine if any utilities are in the area.**

*Additional work must be approved by CDOT.

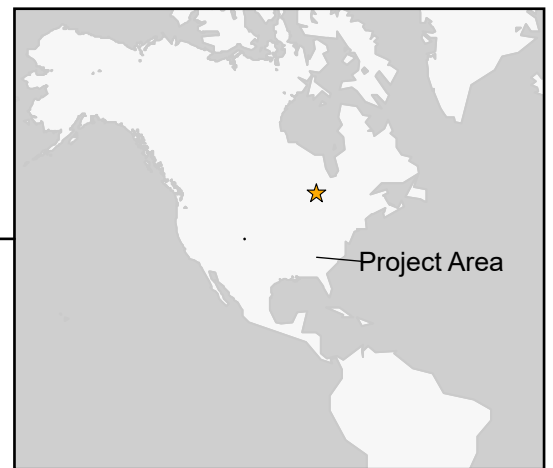
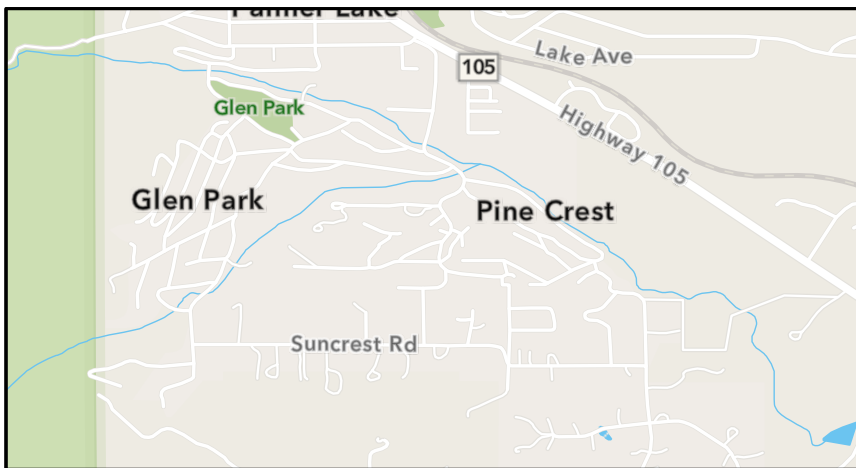
Attachments:

<input type="checkbox"/> Environmental Database Map	No environmental concerns were identified in the environmental map search
<input type="checkbox"/> Modified CDOT Specification(s)	
<input type="checkbox"/> General Plan Note(s)	Historical topographic maps, site location map
<input checked="" type="checkbox"/> Maps & Figures	
<input type="checkbox"/> Agency File Data	

Completed by (Name and Title): **Jimmy Wiesbrock - Environmental Scientist**

Signature: _____ Date: _____ Revised (if necessary): _____

CDOT Environmental Project Manager Approval: _____ Date: _____



COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge I-15-AO
Desktop Analysis for Sensitive Environmental Resources

Figure 1
Site Location Map