Desktop for Sensitive Biological Resources

Bridge G-12-C

Colorado Department of Transportation
Denver, Colorado

January 2021
Final

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Executive Summary

This report provides a summary of the potential impacts to natural resources for the replacement of Bridge G-12-C (the Project) located near Alma, 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 the Middle Fork of the South Platte River, which the Project bridge spans.

- Surface Waters
    - The Project has the potential to impact 0.12 acres of US Army Corps of Engineers (USACE) jurisdictional wetlands (Figure 5 of this Report)
    - The Project has the potential to impact 0.16 acres (or 414 linear feet [ft]) of USACE jurisdictional tributaries (Figure 5 of this Report)
    - The wetlands within the Project Review Area could be associated with a highly protected fen wetland complex located upstream, within 0.25 miles (Figure 4 of this Report)

- Sensitive Species
    - The Project has the potential to impact one species listed under the federal Endangered Species Act
        - Canada lynx (*Lynx canadensis*) – Federally Threatened
    - The Project has the potential to impact three species listed by Colorado Parks and Wildlife (CPW) as endangered or threatened
        - Boreal toad (*Bufo boreas boreas*) – State Endangered
        - Canada lynx (*Lynx canadensis*) – State Endangered
        - River otter (*Lontra canadensis*) – State Threatened
    - There is potential for Migratory Bird Treaty Act (MBTA) species and bats to occur

- Floodplains
    - The Project is located within a Federal Emergency Management Agency (FEMA) Zone A Floodplain (100-year floodplain).
    - Floodplain impacts are currently being assessed and details regarding floodplain permitting requirements will be provided in the Bridge Bundle Hydraulics Report.

- Hazardous Waste
    - Materials from the nearby stockpiled soils, storage facility, and historical gravel mining have the potential to have contaminated the surrounding soils.

- Archaeological, Historic and Paleontological Resources
    - These resources will be assessed by CDOT and provided under separate cover

<u>Risks, Permits and Mitigation</u>

- Surface Waters
    - Avoidance of impacts to wetlands are recommended wherever possible.
    - If any impacts to a USACE regulated wetland or surface water are anticipated:
        - A Permit may be required under Section 404 of the Clean Water Act (Nationwide Permit [NWP] or Individual Permit, depending on the level of impacts)
        - Mitigation measures for those impacts may be required and 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
        - Due to the Project's proximity to highly protected potential fen wetlands, not all NWPs will be available for the Project and a pre-construction notification will be required for impacts permitting under the NWP program.

- 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
    - Coordination with CPW and SB 40 Wildlife Certification from CPW will be required
    - Consultation 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

- Hazardous Waste
    - Additional sampling is recommended to address potential 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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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 G-12-C, 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. Project

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 G-12-C 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 G-12-C is located on CO 9 at milepost 71.44, approximately 0.8 miles north of Alma, Colorado. The bridge is a large, double culvert (two (2) cells 10 feet [ft] by 10 ft, 36-ft long) structure that crosses over the Middle Fork of the South Platte River. The existing culvert has a concrete bottom and concrete wingwalls at all four corners. The length of the existing box culvert is 23 ft.

During construction of the new structure, the existing culvert will likely be split to allow work to proceed on one side of the structure while accommodating traffic on the other side. This will avoid the need for construction of a temporary shoofly that would adversely impact to the river. The area of disturbance will be restricted to the limits of the right-of-way (ROW). Once bridge construction is completed and ready for use, any disturbed areas will be restored to the original contours and reseeded.

One alternative for replacement of the existing bridge includes a bottomless double arch culvert with a width of 24 ft and a maximum height of 10 ft. Under this alternative, there would be two cells for a total width of approximately 52 ft. This alternative does require a small footing in the middle river that would be buried several ft. The final bottom of the creek would be restored to existing conditions.

The second alternative would be a precast concrete girder bridges with a single span of 60 ft and a vertical clearance of approximately 10 ft. This alternative does not require a center support, just two concrete abutments outside of the riverbanks.

The roadway approaches for both alternatives will require widening the roadway with wider shoulders. To minimize impacts the approach roadway will have retaining walls to minimize the fill slope impacts.

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 an offsite batch plant with clean, treated water. No water will be extracted directly from the nearest water source, the Middle Fork of the South Platte River, as a part of Project activities.

2.2 Project Purpose/Need

The double culvert (Structure G-12-C) was built in 1938 on CO 9, which is a key corridor connecting residents and tourists from Colorado Springs and southern Colorado to the recreational activities in the Rocky Mountains. The structure is in poor condition, requiring frequent inspection and repair, including patching of concrete and replacement of wing walls. Construction standards 80 years ago allowed the use of local river stones in the concrete mix, which does not meet current construction standards. This bridge is well past its replacement life, 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 10.4-acre Project Review Area (PRA; see 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 PRA for this bridge extends about 80 ft upstream from the existing culvert (centerline) and downstream to a few ft beyond the edge of the CDOT ROW. The PRA also extends for 2,000 ft north and south from the bridge along the road (CO 9) within the CDOT ROW.

The PRA is located entirely on private and State-owned lands in Park County, Colorado, north of Alma, Colorado within Township 9S, Range 78W, Section 1, in the NWSW quadrant (Figure 1).

3.1 Land Use

Land use in the vicinity of the PRA predominantly consists of residential, commercial, and transportation activities. The area surrounding the Project appears to be privately-owned lands on the outskirts of the town of Alma. On the west side of CO 9 there are residential properties on large lots (5-10 acres). Commercial properties are located on the east side of the highway, including a storage unit rental business, a sand and gravel mining business, and one residential property.

3.2 Water

The waterway under the roadway bridge is the Middle Fork of the South Platte River with its associated riparian and wetland areas. This reach of the Middle Fork immediately upstream of the bridge was channelized decades ago when the roadway bridge was built. A section of main channel, extending approximately 850 ft upstream, was redirected to flow through the structure, and part of the original channel, where the bridge now stands, was filled in to build the road and bridge. Portions of the old channel now form a pond system adjacent to the road on the northwest side of the bridge. Downstream of the bridge, the river mostly returns to a natural channel.

A drainage ditch extends parallel to the road on the southwest side of the PRA. The drainage ditch exits the PRA near the southwest bank of the river, where it meets up with another drainage channel running parallel to the ditch; the two channels discharge into the river west of the PRA.

3.3 Physical features

The terrain surrounding the PRA (elevation: 10,400 ft) is a high elevation valley in the Rocky Mountains, with the Middle Fork of the Platte River located in the low point of the valley. The peaks to the north, east, and west of the Project are all 12,000 to over 14,000 ft in elevation, but to the south, the land slopes away and down to the valley that lies between 9,000 and 10,000 ft. Within the PRA, the bridge, roadway, and roadway shoulder are the dominant constructed features, while the natural features consist predominantly of the river and its associated riparian and wetland habitats, as well as some surrounding upland slopes to a lesser degree.

3.4 Vegetation community

The vegetation surrounding the PRA is primarily sub-alpine mixed conifer woodlands that has been disturbed from residential and commercial development. Within the floodplain of the Middle Fork of the Platte River, the dominant vegetation consists of a mix of riparian willow communities and emergent wetland marshes containing sedges, rushes, and other wetland and aquatic plants.

3.5 Wildlife Corridors

The statewide assessment of wildlife linkages (Southern Rockies Ecosystem Project 2005) mapped three wildlife corridors within 5 miles of the PRA (Figure 3). A lynx linkage corridor is mapped approximately 1.5 miles north of the PRA; a wolverine linkage corridor is mapped within approximately 2.5 miles southwest of the PRA; and an elk linkage corridor is mapped approximately 5 miles east of the PRA. The nearest High Priority Linkage Complex, as defined by the Southern Rockies Ecosystem Project (2005) is located approximately 20 miles north of the PRA (Figure 3).

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 the 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 extends 200 ft upstream (west) and downstream (east) the drainage from the bridge, which is well outside of the planned work area (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 28 and September 21, 2020, Stanley biologists conducted a pedestrian survey of the 10.4-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

Results from the IPaC query (Attachment A) and the CPW state-listed threatened and endangered species identified a total of **35** species for assessment (Table 1, Special Status Species Analysis Screening). Of the **35** species assessed, two species, the **Boreal toad** (*Bufo boreas boreas*) and **Canada lynx** (*Lynx canadensis*) were determined to have a Possible potential to occur. One species, the **river otter** (*Lontra canadensis*), was determined to have an Unlikely potential to occur, and the remaining 32 were determined to have no potential to occur. There is no designated or proposed critical habitat within the PRA. This first screening was to determine species within or near the PRA that have potential habitat or records of occurrence.

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 and mitigation for any depletions in the basin will be managed under CDOT's programmatic agreement with the USFWS.

Table 1. Special Status Species Analysis Screening

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
		Amphibians	
Boreal toad (*Bufo boreas boreas*) CO – E	**Range:** Rocky Mountains area, usually between 8,500 to 11,500 ft of elevation. **Habitat:** Mountain lakes, ponds, meadows, wetlands in subalpine forests.	**Potential to Occur: Possible.** Project is in subalpine forested area near water, but water within work area is flowing and is not suitable for breeding. See Attachment B; Photolog, Photos 3 to 5.	**May Effect.** No breeding habitat within the PRA, but close to potential foraging habitat. **Mitigation:** May require consultation with CPW if impacts occur to habitat.
		Birds	
Burrowing owl (*Athene cunicularia*) CO – T	**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). **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.	**Potential to Occur: None.** No suitable open grasslands or arid lands.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.
Least tern (*Sterna antillarum*) ESA – E CO – E	**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). **Habitat:** The least tern nest on barren to sparsely vegetated sandbars along rivers, sand and gravel pits, lakes, and reservoir shorelines	**Potential to Occur: None.** Outside of range, no large beaches or sandbars.	**No Direct Effect.** No potential for species to occur within the PRA. **See discussion on water-related activities on the South Platte River at the top of Section 5.1.** **Mitigation:** Dependent upon impacts to South Platte Basin.
Lesser prairie-chicken (*Tympanuchus pallidicinctus*) CO – T	**Range:** In extreme southeastern Colorado. **Habitat:** Large, sandy grasslands with abundant grasses, sandsage, and yucca.	**Potential to Occur: None.** Outside of range, no large, suitable grasslands.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Mexican spotted owl (*Strix occidentalis lucida*) ESA – T CO – T	**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). **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).	**Potential to Occur: None.** Elevation above maximum, and no steep, rocky canyons.	**No Effect.** No habitat for species presence. **Mitigation:** None needed.
Piping plover (*Charadrius melodus circumcinctus*) ESA – T CO – T	**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). **Habitat:** Piping plover use wide, flat, open sandy beaches with very little grass or vegetation (CPW 2020).	**Potential to Occur: None.** Outside of range, no large, suitable sandy beaches or sandbars.	**No Direct Effect.** No potential for species to occur within the PRA. **See discussion on water-related activities on the South Platte River at the top of Section 5.1.** **Mitigation:** Dependent upon impacts to South Platte Basin.
Plains sharp-tailed grouse (*Tympanuchus phasianellus jamesii*) CO – E	**Range:** In extreme northeastern Colorado, mostly in Weld County. **Habitat:** Medium to tall grasslands, almost exclusively in Conservation Reserve Program grasslands.	**Potential to Occur: None.** Outside of range, no large, suitable grasslands.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Southwestern willow flycatcher (*Empidonax traillii extimus*) ESA – E CO - E	**Range:** In southcentral and southwestern Colorado, usually below 8,500 ft. **Habitat:** Dense riparian habitats with saturated soils, standing water or nearby streams.	**Potential to Occur: None.** Far above typical maximum elevation, and not known to be in this part of Colorado.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.
Whooping crane (*Grus americana*) ESA – E CO – E	**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). **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).	**Potential to Occur: None.** No mudflats or saltmarshes, and no records in Colorado for the last 10 years.	**No Direct Effect.** No potential for species to occur within the PRA. **See discussion on water-related activities on the South Platte River at the top of Section 5.1.** **Mitigation:** Dependent upon impacts to South Platte Basin.
Fish			
Arkansas darter (*Etheostoma cragini*) CO – T	**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. **Habitat:** Found in shallow, clear, sandy streams with spring-fed pools an abundant rooted aquatic vegetation. Can occur in large, deep pools during late summer low-water periods when streams may become intermittent.	**Potential to Occur: None.** The PRA is located on the South Platte River, outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Bonytail (*Gila elegans*) ESA – E CO – E	**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. **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).	**Potential to Occur: None.** The PRA does not occur within the species' historic range and the species has been extirpated from its historic range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Brassy minnow (*Hybognathus hankinsoni*) CO – T	**Range:** In Colorado, found in the Lower South Platte River Basin and in Colorado River backwaters (CPW 2016b). **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 steams, 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).	**Potential to Occur: None.** Although the PRA contains suitable habitat of clear water with aquatic vegetation and continuous connectivity, the PRA occurs within the Middle Fork of the South, outside of the species' known range (CPW 2016b).	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Colorado pikeminnow (*Ptychocheilus lucius*) ESA – E CO – T	**Range:** Current range restricted to the Green, Yampa, White, Gunnison, and Colorado Rivers (AGFD 2002a, CPW 2020). **Habitat:** Occurs in swift flowing muddy rivers with quiet, warm backwater.	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Common shiner (*Luxilus cornutus*) CO – T	**Range:** Current known range in Colorado includes northern Colorado along the South Platte River from Denver and Ovid (Woodling 1985; Fuller 2004). **Habitat:** Occurs in moderate gradient streams with cool, clear water, gravel bottoms and shaded by brush or trees (Woodling 1985)	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Greenback cutthroat trout (*Oncorhynchus clarki stomias*) ESA – T CO – T	**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. **Habitat:** Occurs in cold, clear, gravely headwater streams and mountain lakes which provide an abundant food supply of insects (CPW 2020).	**Potential to Occur: None.** Although the PRA contains the suitable habitat of cold, clear, gravely headwater streams, the PRA is outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Humpback chub (*Gila cypha*) ESA – E CO – T	**Range:** In Colorado, species in 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). **Habitat:** Occurs in deep, fast-moving, turbid waters often associated with large boulders and steep cliffs (CPW 2020).	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Lake chub (*Couesius plumbeus*) CO - E	**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). **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).	**Potential to Occur: None.** The PRA occurs outside of the species' current known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Northern redbelly dace (*Phoxinus eos*) CO - E	**Range:** In Colorado, extant populations occur in tributaries to the upper Platte River drainage system (Garber Creek, Jackson Creek, Plum Creek) (Stasiak 2006b). **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).	**Potential to Occur: None.** The PRA occurs outside of the species' known range and does not contain the high density of vegetation or cover suitable for this species.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Pallid Sturgeon (*Scaphirhynchus albus*) ESA - E	**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 any PSICC watersheds (Olson 2019, USFWS 2007). **Habitat**: Species occurs at the bottom of large, turbid, silty rivers (Olson 2019, USFWS 2007)	**Potential to Occur: None.** The PRA is located outside of the species known range	**No Direct Effect.** No potential for species to occur within the PRA. **See discussion on water-related activities on the South Platte River at the top of Section 5.1.** **Mitigation:** Dependent upon impacts to South Platte Basin.
Plains minnow (*Hybognathus placitus*) CO – E	**Range:** In Colorado, the species has been recorded on the South Platte River (Washington and Yuma Counties) and Arkansas River (Kiowa County) (Wooding 1985). **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).	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Razorback sucker (*Xyrauchen texanus*) ESA – E CO – E	**Range:** In Colorado, species' current distribution is limited to the Yampa, Colorado and Gunnison rivers. **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).	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Rio Grande sucker (*Catostomus plebeius*) CO – E	**Range:** In Colorado, the species is found only in Hot Creek and McIntyre Springs in Conejos County (Rees and Miller 2005, Wooding 1985). **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).	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Southern redbelly dace (*Phoxinus erythrogaster*) CO – E	**Range:** In Colorado, the species is found in the headwaters of the Arkansas River near Pueblo and Canon City (Stasiak 2007, Wooding 1985). **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).	**Potential to Occur: None.** The PRA occurs outside of the species' known range.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities.
Suckermouth minnow (*Phenacobius mirabilis*) 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.
Insects			
Uncompahgre fritillary butterfly (*Boloria acrocnema*) ESA – E	**Range:** Known range is limited to 11 verified sites in the San Juan Mountains (USFWS 2009). **Habitat**: Species is associated with large patches of snow willow (*Salix nivalis*) between 12,100 to 13,500 ft. Found on northeast-facing slopes, on the coolest and wettest microhabitats.	**Potential to Occur: None.** The PRA is located outside of the species' known range and does not provide suitable habitat.	**No Effect**. The species has no potential to occur within the PRA and no potential to be impacted by Project activities. **Mitigation.** None needed.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
		Mammals	
Black-footed ferret (*Mustela nigripes*) ESA – E CO – E	**Range:** Historically occurs in the eastern half of Colorado. In Colorado, experimental populations have been reintroduced in Larimer, Denver, Pueblo, Prowers, and Baca Counties (CPW 2019). **Habitat:** Grasslands and shrublands that support prairie dog populations.	**Potential to Occur: None.** Although the PRA is within the species' potential range, no suitable grasslands or shrublands occur within the PRA.	**No Effect.** The species has no potential to occur within the PRA and no potential to be impacted by Project activities. **Mitigation.** None needed.
Canada Lynx (*Lynx canadensis*) 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: Possible.** Subalpine forests are located within or immediately adjacent to portions of the PRA and an identified wildlife linkage for the lynx occurs approximately 1.5 miles north of the PRA. However, the majority of the PRA consists of a roadway unsuitable for the species and that would not typically support prey species.	**May Affect, Not Likely to Adversely Affect.** Although the species has some potential to cross through the PRA, the PRA has very limited and marginal foraging and breeding habitat. Noise or lights may cause the species to temporarily avoid the immediate area during construction activities, but given the large home ranges of the species and the marginal quality of the habitat within the PRA, this would not measurably impact the species' foraging or breeding opportunities. **Mitigation. See Section 6.2**.
Gray wolf (*Canis lupus*) CO – E *Species delisted from ESA 11/3/2020	**Range:** Historically know in wildlands of Colorado but have been extirpated for some time. **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.** No species presence. **Mitigation.** None needed.
Grizzly bear (*Ursus arctos*) ESA – T CO – E	**Range:** Current range extends from Alaska south to Washington and Wyoming. Historically know in wildlands of Colorado but not 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.** No species presence. **Mitigation.** None needed.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Kit fox (*Vulpes macrotis*) CO – E	**Range: 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). **Habitat:** Semi-desert shrublands of saltbush, shadscale, and greasewood.	**Potential to Occur: None.** No suitable shrublands, and PRA is not located within the species' known range.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.
Preble's meadow jumping mouse (*Zapus hudsonius preblei*) ESA – T CO – T	**Range:** Within stream and river systems along the Front Range in Colorado, generally below 7,600 ft. **Habitat:** Well-developed riparian or wetland shrub vegetation with undisturbed adjacent diverse grasslands.	**Potential to Occur: None.** Elevation is too high, and stream/wetland areas surrounded by subalpine forests.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.
River otter (*Lontra canadensis*) CO – T	**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). **Habitat:** Healthy forested riparian habitats, with some overhanging banks along long reaches, and/or beaver ponds within 4th order or greater stream systems.	**Potential to Occur: Unlikely.** Not known to occur in this section of the Middle Fork of the South Platte (2nd order stream, see Attachment B; Photolog, Photos 3 to 5). Nearest known reintroduction sites to the north in the Dillon Reservoir and its associated watershed area.	**May Affect.** Species presence unlikely, though some habitat potential exists. **Mitigation.** May require consultation with CPW if impacts occur to potential habitat.
Wolverine (*Gulo gulo*) CO – E	**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. **Habitat:** High alpine forests and tundra where snow persists in places throughout most or all of the year.	**Potential to Occur: None.** Area surrounded by subalpine forests and developed areas. Dispersing or transient individuals possible as the greater surrounding mountain peaks are above tree line but very unlikely near the PRA.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.

Species and Status[1]	Habitat and Range	Potential to Occur	Potential Effects
Plants			
Penland alpine fen mustard (*Eutrema penlandii*) ESA – T	**Range:** Species is endemic to a small area in central Colorado. Only found in the Mosquito Range from Hoosier Ridge to Weston Pass in Lake, Park and Summit counties. Populations have been found in the Middle Fork South Platte River, South Fork South Platte River, and headwaters Arkansas River watersheds (Olson 2019). **Habitat:** Occurs in alpine wetlands, typically in alpine fens on the lee side of mountain crests where deep wind-deposited snow accumulates (Oslon 2019).	**Potential to Occur: None.** Although the PRA occurs within the species' range, the PRA does not contain suitable habitat of alpine fens or wetlands.	**No Effect.** No habitat for species presence. **Mitigation.** None needed.
Western prairie fringed orchid (*Platanthera praeclara*) ESA – T	**Range**: Species occurs from Manitoba south to Wyoming, Oklahoma, and Missouri; not known to occur in Colorado (Olson 2019). **Habitat**: Species occurs in mesic areas of the tallgrass prairie and wet meadows (Olson 2019).	**Potential to Occur: None.** The PRA is located outside of the species known range.	**No Direct Effect.** No potential for species to occur within the PRA. **See discussion on water-related activities on the South Platte River at the top of Section 5.1.** **Mitigation:** Dependent upon impacts to South Platte Basin.

Source: Colorado Parks and Wildlife (2020) unless otherwise noted.
[1]Status:
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

Migratory Bird Treaty Act (MBTA) species have a potential to be nesting within 300 ft of the Project, as the area surrounding the Project contains abundant native tree and shrub 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 Analysis Area 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 (*Haliaeetus leucocephalus*)	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 2016). 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 been recorded breeding in many counties in Colorado, including in Park County where the PRA is located (CPW 2016a).	**Possible**. The PRA is within the species' geographic range and contains appropriate foraging habitat for the species (a perennial stream and adjacent pond with fish located within a mile of large trees). Species has been documented within several miles of the PRA (eBird 2020).

[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).

Golden Eagle (*Aquila chrysaetos*)	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 2016a).	**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), although the presence of human activity along the road and at Alma 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. Three wildlife corridors are mapped within 5 miles of the PRA – a lynx linkage corridor approximately 1.5 miles north of the PRA; a wolverine linkage corridor approximately 2.5 miles southwest of the PRA; and an elk linkage corridor approximately 5 miles east of the PRA (Figure 3). Roadkill counts recorded by CDOT from 2005-2018 show two deer within the PRA and several more deer and elk within approximately 1.5 miles of the PRA (Figure 3).

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 C).

The Middle Fork of the South Platte River is a popular river for fly fishing in Colorado, although recreational fishing records suggest fishing activities are relatively low along the stretch of river near the PRA (Fishbrain 2020). Portions of the South Platte River are designated as Gold Medal waters, with the nearest stretch located more than 12 miles downstream of the PRA. Fish species commonly recorded along the Middle Fork of the South Platte River include brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), cutthroat trout (*O. clarkii*), brook trout (*Salvelinus fontinalis*), and cutbow trout (*O. clarkii* × *mykiss*). No designated Aquatic Native Species Conservation Waters are located within the same watershed as the PRA. No Cutthroat Trout Designated Crucial Habitat occurs within the PRA's watershed.

Since the Project is a bridge replacement project that will not influence the amount of road use along CO 9 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 bridge consists of an open bottom, and to continue to facilitate fishery passage along the river, the Contractor may be required to select an open-bottomed design as well. During construction, wildlife corridors and fishery passages should be maintained. CPW may require fencing be placed around construction activities to prevent wildlife from accessing the area when it is not in use.

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 portions of the PRA as occurring within the 1% annual chance flood hazard zone (Zone A, or the 100-year flood hazard zone; see Figure 4). The hydraulics of the watershed are currently being assessed and further details regarding floodplain design and permitting requirements will be provided in the Bridge Bundle 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 Project Impact Area (PIA; See Aquatic Resources Delineation Report, Figure 2) was surveyed for any potential wetlands or non-wetland WOTUS on August 28 and September 21, 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 ordinary highwater mark (OHWM)[2] indicating a potentially jurisdictional WOTUS. Consultation with the USACE will be needed to confirm the delineation and jurisdictional extent of WOTUS, which typically is 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 or through an Individual Permit (IP). 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 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 PIA (per communications with the Project engineers) were outlined as Avoidance Areas (Figure 5 and Attachment B; Photolog). 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.

Additionally, wetlands within the PRA are located approximately 0.22 miles downstream of a recorded fen (OTIS 2020). The closest potential fen within the wetland complex is mapped with a confidence value of 3 (possible fen that has not yet been confirmed), while the other features in the vicinity are mapped with a confidence value of 1 (low confidence) (Figure 4). Per the Colorado

[2] As defined in RGL-05-05.

Regional Conditions, "[a]ll nationwide permits, with the exception of 3, 5, 6, 20, 27, 32, 37, and 38, are revoked for activities located in fens and wetlands adjacent to fens" (USACE 2017). Although the Stanley biologists did not identify any fens within the PRA, based on aerials, the PRA wetlands' proximity to the river, and the National Wetland Inventory mapping, there is potential for the delineated wetlands to be considered part of the fen complex. As such, in order to be permitted under an applicable NWP, and prior to commencing any Project activities, the applicant will be required to submit a Pre-Construction Notification to the USACE successfully demonstrating any adverse environmental effects to the fen hydrology are minimal.

5.6.2 Non-wetland Waters

During the survey, two features with an OHWM were observed and delineated within the PIA. The primary water feature in the area is the Middle Fork of the South Platte River (0.14 acres and 243 linear ft). The other feature observed was a small, perennial drainage channel (0.02 acres and 171 linear ft) that appears to drain both hillside seeps and roadside areas into the river. Specific details are provided in the Aquatic Resources Delineation Report.

5.6.3 Avoidance Areas

A total of seven Avoidance Areas are located within the PRA (Figure 5). AA 1 and AA 2, located on the northern side of the PRA, are associated with road runoff drainages. AA3a and AA 3b are portions of the Middle Fork of the South Platte River that are located within the PRA but outside of the PIA.[3] AA 4 consists of a marshy area with potential wetland features located between the road and the bend in the Middle Fork of the South Platte River southeast of the Project bridge. AA 5a and 5b consist of a drainage channel that extends through a culvert under the road approximately 1,000 ft south of the bridge.

A formal delineation would be required if the final design will impact any of the Avoidance Areas. Photographs of the Avoidance Areas are provided in Attachment B – Photolog.

5.7 Stormwater

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

[3] Because the Structure Work Area around the bridge extends outside of the CDOT ROW, and permission to enter the adjacent properties had not been granted at the time of survey, these areas were not included in the wetland survey.

- 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 submit an application for a General Permit for Stormwater Discharges Associated with Construction Activity 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

An initial site assessment (ISA) was conducted for the potential for hazardous waste materials to occur within or near the PRA (Attachment D). The ISA determined none of the surrounding properties are known hazardous waste sites. However, due to the presence of potential source pollutants such as stockpiled soils of an unknown origin, a storage facility with unknown contents, and historical gravel mining near the PRA, it is recommended that surface soil samples are collected prior to soil disturbing activities that have the potential to release contaminants into other soil or groundwater sources.

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 construction; and some minor permanent loss of vegetation and wetlands 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, Section 401 certification, and various stormwater (SWPPP) and construction permits. Due to the potential for ESA-listed and CPW-listed species to occur, consultation and/or coordination with USFWS and CPW are also anticipated to be required.

The Project also falls under the jurisdiction of Senate Bill 40 (33-5-101-107, CRS 1973 as amended) due to its proximity to the Middle Fork of the South Platte River, and therefore wildlife certification from CPW is expected to 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. CPW may require the bridge design to have an open bottom, however, in order to facilitate continued fish passage.

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 C). 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.

Mitigation requirements for the Canada lynx (the only ESA-listed species currently identified as having the potential to occur within the PRA) are provided in Table 3. The list of construction activities with the potential to impact the Canada lynx and the required avoidance and/or mitigation measure(s) for each activity is provided in Attachment E.

Table 3. CDOT Mitigation Measures for the Canada Lynx

CDOT Mitigation ID #	Mitigation Measure
CL-1	Limit construction activities to outside of the rearing season (May through July) to reduce the effects of the project on reproducing Canada lynx populations to an insignificant amount.
CL-2	Construction should be conducted as to not permanently impede movement of the species and prevent it from accessing habitats necessary for breeding, feeding, sheltering, and dispersal. This determination shall be made by a CDOT approved biologist.
CL-3	Construction should be concentrated to as small of an area as possible in order to minimize the amount of habitat affected at one time and keep adjacent habitat areas available for use by the species to forage, hide, or travel. Re-contour and restore all temporarily impacted habitats on the project site so that they become available for use.
CL-4	The width and height of concrete box culverts (CBC) must be equal to or larger than the existing size with no additional length added in order to not impede movement for the species and maintain access to habitats used for breeding, feeding, sheltering, and dispersal. If a CBC is to be extended, the openness ratio of the original culvert must be maintained. The openness ratio is calculated by ((height x width)/length) in meters. this measure does not apply to corrugated metal pipe (CMP).
CL-5	Temporary lighting will be used with directional shielding to focus the lighting onto the driving surface to avoid disrupting foraging and travel behaviors of this primarily nocturnal species. For the same reasons, ensure that permanent lighting is "dark sky" compliant and shines only on the area(s) that need to be illuminated. Do not install lighting in areas of lynx or snowshoe hare habitat to prevent disturbing these species' foraging behaviors. Ensure that lights are on only when necessary (i.e., at chain stations ensure that lights are on only when chain-up or chain-down is necessary). Monitor lighting to ensure that it does not exceed the approved lighted area and that lights are on only when necessary to reduce the effects of the project on Canada lynx populations to an insignificant amount.
CL-6	Installation of cable rail is preferred to w-beam which is preferred over cement barrier.
CL-7	Conduct work during daylight hours when lynx are less active to avoid disrupting this nocturnal species foraging and travel behaviors. If night work must be conducted, concentrate the activity in as small an area as possible, and work for four (4) consecutive nights separated by three consecutive nights of no work to allow any individuals in the vicinity to recover and potentially use the site for foraging or travel. Use noise attenuators on blasting and construction equipment to minimize stressing individuals, causing them to flee or abandon foraging.
CL-8	If the project is within 0.25 mile of alpine or sub-alpine habitat, as defined by the U.S. Geological Surveys' (USGS) Ecoregions of Colorado (level IV), construction activities will be limited to outside of the rearing season (May through July) to reduce the effects of the project on reproducing Canada lynx to an insignificant level. Projects initiated prior to May 1 and sustained until completion may continue into the rearing season.
LAA (Likely to Adversely Affect)	Activities labeled with LAA are activities CDOT has determined cannot be fully mitigated and are likely to adversely affect the species. Any activity labeled with LAA will require consultation with USFWS.

Once a design is selected and anticipated impacts have been identified, project-specific mitigation measures will need to be developed and implemented by the design-build team and approved by the applicable agencies.

6.2.4 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.

7. References

Arizona Game and Fish Department. 2001. Humpback Chub (*Gila cypha*). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 6 pp.

_____. 2002a. Colorado Pikeminnow (*Ptychocheilus lucius*). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 9 pp.

_____. 2002b. Razorback Sucker (*Xyrauchen texanus*). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 6 pp.

_____. 2020. Bonytail (*Gila elegans*). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, Arizona. 7 pp.

Bestegen, K., K. Fausch, S. Riley. 1991. Rediscovery of a relict southern population of Lake Chub, Couesius plumbeus, in Colorado. *The Southwestern Naturalist*, 31/1: 125-127.

Colorado Parks and Wildlife. 2016a. Bald Eagle: Assessing Habitat Quality for Priority Wildlife Species in Colorado Wetlands.

_____. 2016b. Brassy Minnow: Assessing Habitat Quality for Priority Wildlife Species in Colorado Wetlands.

_____. 2019. Black-footed Ferret: Colorado Reintroductions, 2013-Present. Colorado Park and Wildlife: Denver, Colorado. January 2019.

_____. 2020. Species Abstracts. Unpublished abstract compiled and edited by Colorado Parks and Wildlife. Accessed September 16: https://cpw.state.co.us/learn/Pages/SpeciesProfiles.aspx

Corman, T.E., and Cathryn Wise-Gervais. 2005. *Arizona Breeding Bird Atlas.* Albuquerque, New Mexico: University of New Mexico Press.

eBird. 2020. *eBird: An Online Database of Bird Distribution and Abundance [Web Application]*. eBird. Ithaca, New York: Cornell Lab of Ornithology. www.ebird.org.

Fishbrain. 2020. Sawmill Creek Catches Log [*Online database*]. Accessed October 30, 2020. https://fishbrain.com/fishing-waters/5IY2lI8D

Fuller, P. 2004. *Luxilus cornutus* (Mitchill, 1817): U.S. Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, FL. Revised August 5, 2004. https://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=563.

Meyer, Rachelle. 2007. Strix occidentalis. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer).

Montana Fish, Wildlife and Parks. 2020. Brassy Minnow — *Hybognathus hankinsoni*. Montana Field Guide. Montana Natural Heritage Program and Montana Fish, Wildlife and Parks.

Oslon, Steve. 2019. Endangered, Threatened, Proposed, and Regional Forester's Sensitive Species in the Rocky Mountain Region (R2): What's Important for the Pike and San Isabel National Forests and the Cimarron and Comanche National Grasslands (PSICC). April 30, 2019.

OTIS. 2020. CDOT Online Transportation Information System [Online database map]. Accessed November 3, 2020. https://dtdapps.coloradodot.info/MapViewext/

Rees, D.E., R.J. Carr, and W.J. Miller. 2005. Plains Minnow (*Hybognathus placitus*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. May 17, 2005.

Rees, D.E. and W.J. Miller. 2005. Rio Grande Sucker (*Catostomus plebeius*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. May 16, 2005.

Southern Rockies Ecosystem Project. 2005. Linking Colorado's Landscapes: A Statewide Assessment of Wildlife Linkages Phase I Report. March 2005.

Stasiak, R. 2006a. Lake Chub (*Couesius plumbeus*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. May 4, 2006.

_____. 2006b. Northern Redbelly Dace (*Phoxinus eos*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. February 10, 2006.

_____. 2007. Southern Redbelly Dace (*Phoxinus erythrogaster*): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. January 11, 2007.

Swift-Miller, S.M., B.M. Johnson, R.T. Muth, and D. Langlois. 1999. Distribution, abundance, and habitat use of Rio Grande sucker (*Catostomus plebeius*) in Hot Creek, Colorado. The Southwestern Naturalist 44(1):42-48.

U.S. Army Corps of Engineers. 2005. Regulatory Guidance Letter: Ordinary High Water Mark Identification. RGL-05-05. December 7, 2005.

_____. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), e d. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

_____. 2017. 2017 Regional Conditions to Nationwide Permits in the State of Colorado. U.S. Army Corps of Engineers, Albuquerque District, Omaha District, and Sacramento District. January 11, 2017.

U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States. December 02, 2008.

U.S. Fish and Wildlife Service. 1998. Endangered Species Act Consultation Handbook. Procedures for Conducting Section 7 Consultations and Conferences. U.S. Fish and Wildlife Service and National Marine Fisheries Service. March 1998.

_____. 2002. Bonytail (*Gila elegans*) Recovery Goals: amendment and supplement to the Bonytail Chub Recovery Plan. U.S. Fish and Wildlife Service, Mountain-Prairie Region (6), Denver, Colorado.

_____. 2007. Pallid Sturgeon (Scaphirhynchus albus) 5-year review summary and evaluation. U.S. Fish and Wildlife Service Pallid Sturgeon Recovery Coordinator: Billings, Montana. 120 pp.

_____. 2009. Uncompahgre Fritillary Butterfly (*Boloria acrocnema*) 5-Year Review: Summary and Evaluation. U.S. Fish and Wildlife Service Western Colorado Field Office: Grand Junction, Colorado. October 2009.

_____. 2012. Final Recovery Plan for the Mexican Spotted Owl (*Strix occidentalis lucida*), First Revision. U.S. Fish and Wildlife Service: Albuquerque, New Mexico. 413 pp.

_____. 2014. Greenback Cutthroat Trout Genetics and Meristics Studies Facilitated Expert Panel Workshop. *Prepared by AMEC Environment and Infrastructure*. Golden, Colorado: May 12, 2014.

Woodling, John. 1985. Colorado's Little Fish: A Guide to the Minnows and Other Lesser Known Fishes in the State of Colorado. Colorado Division of Wildlife: Denver, Colorado.

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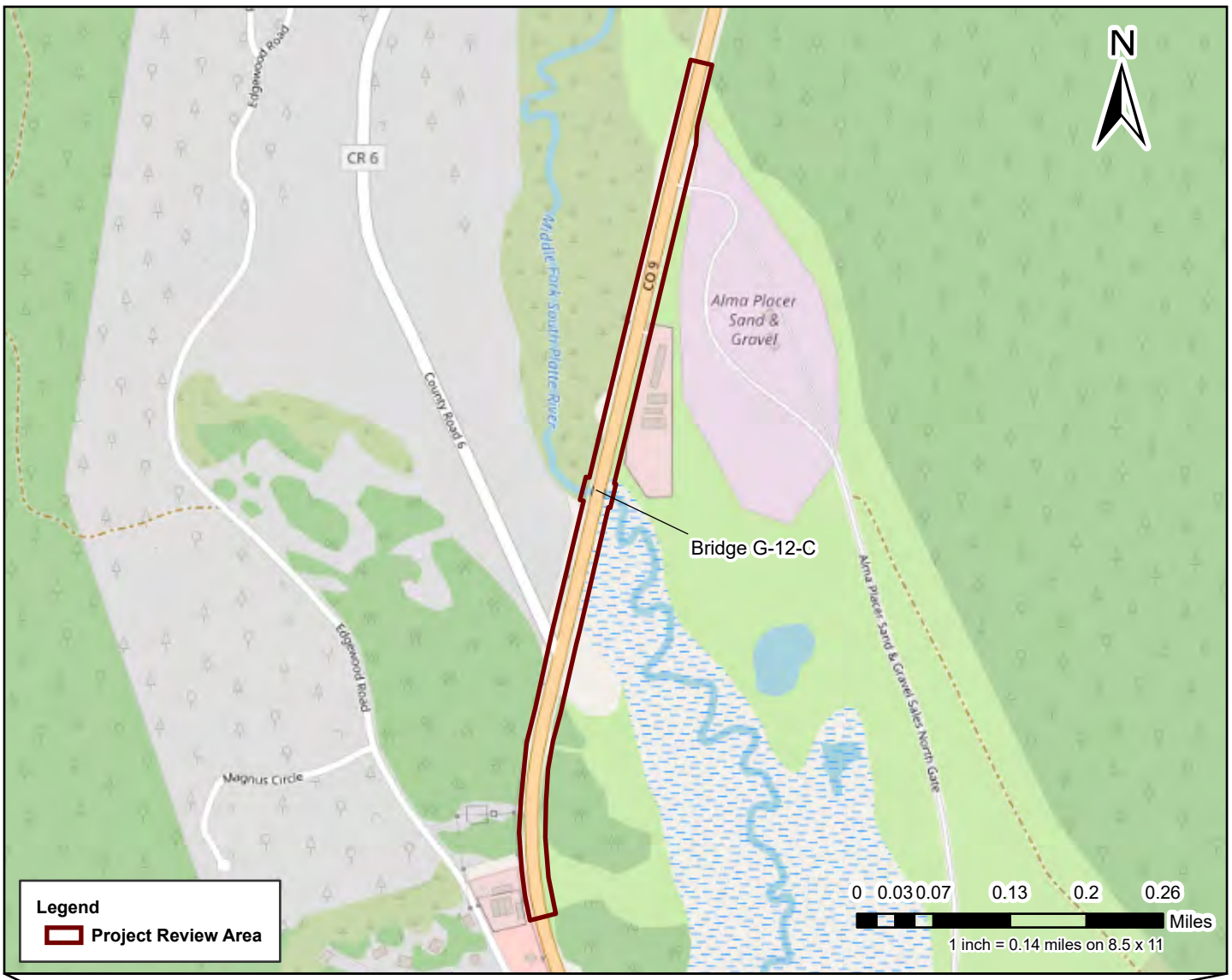
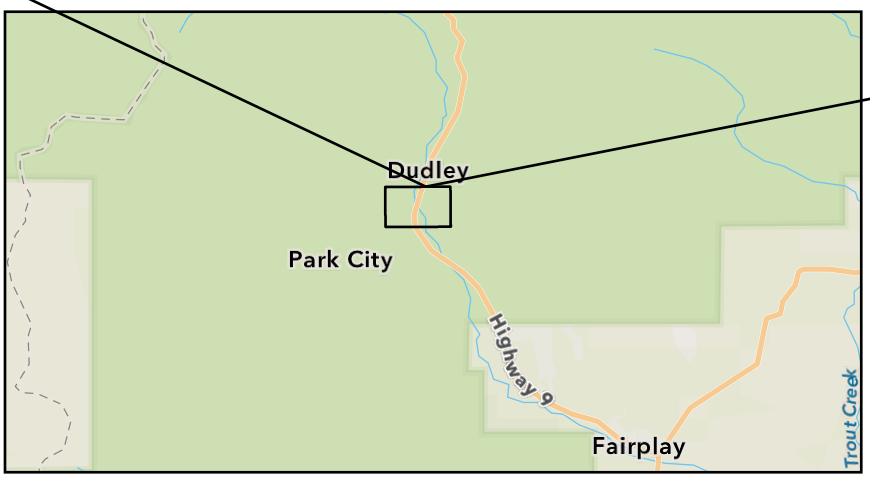
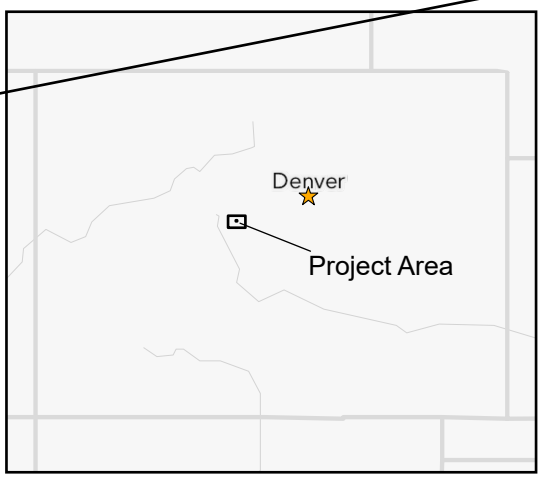
Figures







COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge G-12-C
Desktop Analysis for Sensitive Environmental Resources

Figure 1
Vicinity Map

Stanley Consultants INC.

Data Source: Stanley Consultants, CDOT
Image Source: ArcGIS Online, World Street Map, World Topographic Map

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COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge G-12-C
Desktop Analysis for Sensitive Environmental Resources

Figure 2
Project Review Area

Data Source: Stanley Consultants, Inc.
NFS Boundary Source: USFS
Image Source: ArcGIS Online, World Imagery (Clarity)

Stanley Consultants INC.

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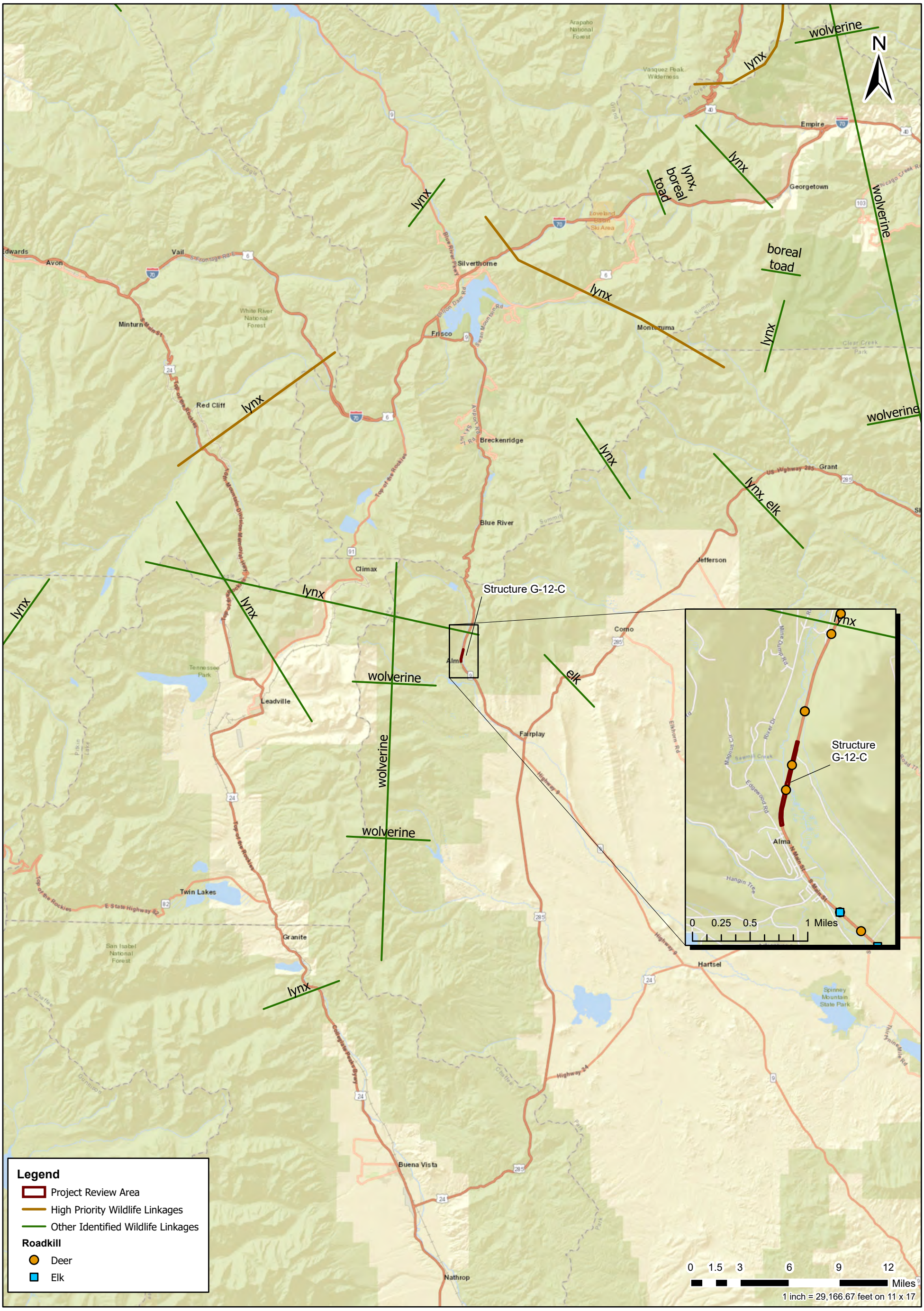


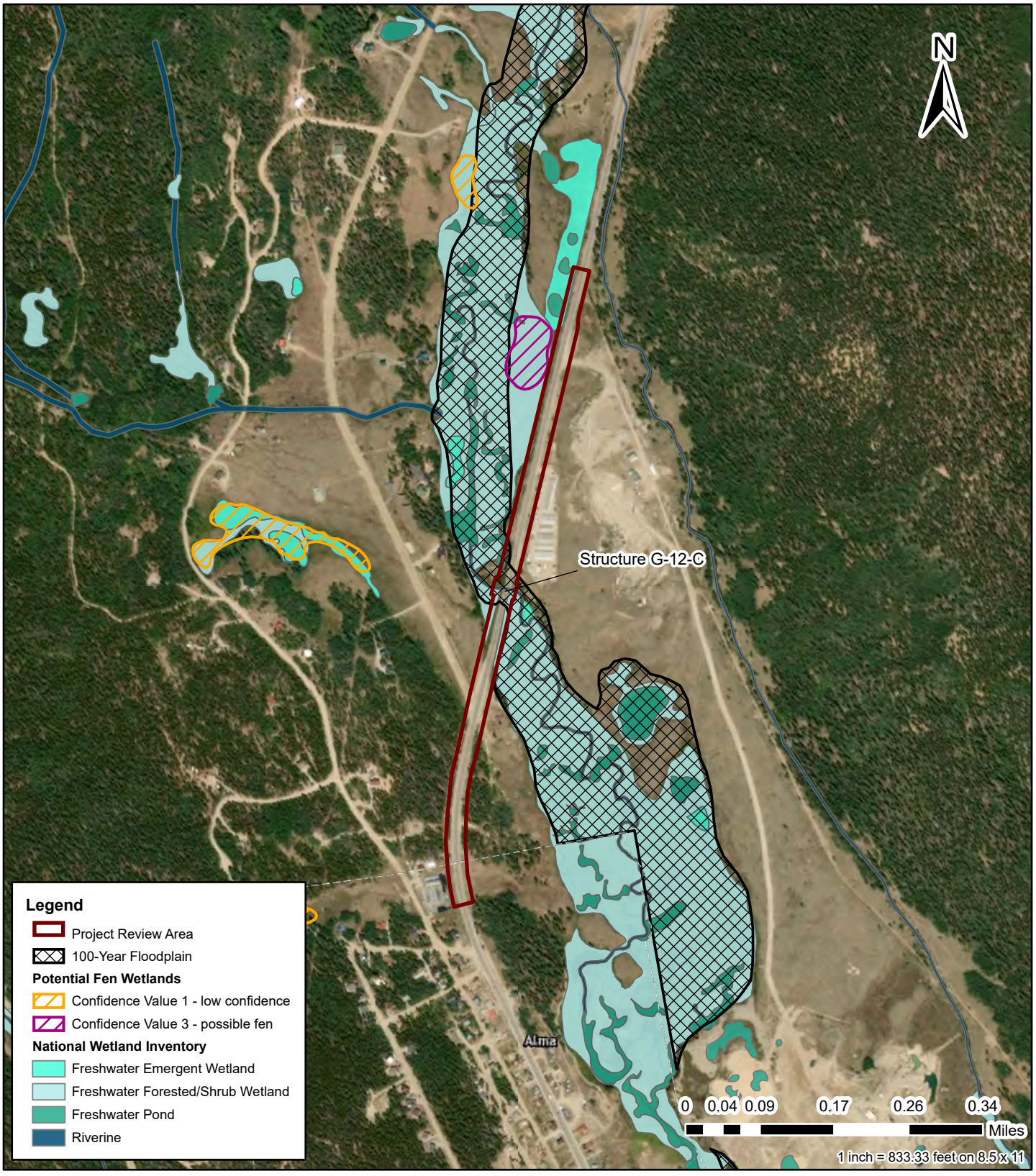
COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge G-12-C
Desktop Analysis for Sensitive Environmental Resources

Figure 3
Wildlife Linkages and Roadkill Records

Stanley Consultants INC.

Data Source: Stanley Consultants, Inc.; Southern Rockies Ecosystem Project; OTIS
Image Source: ArcGIS Online, World Terrain

Date Exported: 10/29/2020 4:18 PM



COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge G-12-C
Desktop Analysis for Sensitive Environmental Resources

Figure 3
Aquatic Resources

Data Source: Stanley Consultants, Inc., USFWS, FEMA, CDOT
Image Source: ArcGIS Online, World Imagery

Stanley Consultants INC.

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N

AA1

AA2

AA 3a

AA 3b

AA 4

AA5a

AA 5b

Middle Fork of the South Platte River

Wetland 2

Wetland 2

Wetland 1

Wetland 3

Middle Fork of the South Platte River

Drainage 1

0 0,01 0,01 0,03 0,04 0.06 Miles

1 inch = 0.08 miles on 11 x 17

Legend

- Project Review Area
- Avoidance Area
- Wetland
- Surface Waters

Data Source: Stanley Consultants, Inc., CDOT
Image Source: ArcGIS Online, World Imagery

COLORADO DEPARTMENT OF TRANSPORTATION
Region 2 Bridge Rebuild Project - Bridge G-12-C
Desktop Analysis for Sensitive Environmental Resources

Figure 4
Potential Waters and Wetlands of the U.S.

Stanley Consultants INC.

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Attachment A

Information for Conservation and Planning Report (IPaC)

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

Park 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

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 species

[1] 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 Fisheries[2]).

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.

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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:

Mammals

NAME	STATUS
Canada Lynx *Lynx canadensis* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3652	Threatened

Birds

NAME	STATUS
Least Tern *Sterna antillarum* This species only needs to be considered if the following condition applies: • 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/8505	Endangered
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8196	Threatened
Piping Plover *Charadrius melodus* This species only needs to be considered if the following condition applies: • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Whooping Crane *Grus americana* This species only needs to be considered if the following condition applies: • Water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/758	Endangered

Fishes

NAME	STATUS
Greenback Cutthroat Trout Oncorhynchus clarkii stomias No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2775	Threatened
Pallid Sturgeon Scaphirhynchus albus This species only needs to be considered if the following condition applies: • 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/7162	Endangered

Insects

NAME	STATUS
Uncompahgre Fritillary Butterfly Boloria acrocnema No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4419	Endangered

Flowering Plants

NAME	STATUS
Penland Alpine Fen Mustard Eutrema penlandii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5811	Threatened
Western Prairie Fringed Orchid Platanthera praeclara This species only needs to be considered if the following condition applies: • 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 Act

[1] and the Bald and Golden Eagle Protection Act[2].

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.

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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

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.)
Brown-capped Rosy-finch Leucosticte australis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Sep 15
Golden Eagle Aquila chrysaetos 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	Breeds Jan 1 to Aug 31
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Veery Catharus fuscescens salicicola This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 15 to Jul 15

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 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 FORESTED/SHRUB WETLAND

PSS1Eb

FRESHWATER POND

PABGb

RIVERINE

R3UBH

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 tuberficid 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

Photolog

Photo 1.
Avoidance Area 1, looking west from SH 9 ROW. Potential wetland basin feature but appears dry at time of investigation.

Photo 2.
Avoidance Area 2, looking northeast from SH 9 ROW. Potential wetland basin feature. Basin appears mostly outside of ROW and dry at time of investigation, at least the part closest to the ROW.

Photo 3.
Avoidance Area 3a, looking west from SH 9 ROW. Upstream portion of the Middle Fork of the South Platte River and its associated wetlands and riparian areas.

Note: This is the potential habitat within the PRA for both the boreal toad and the river otter.

Photo 4.
Avoidance Area 3b, looking east from SH 9 ROW. Downstream portion of the Middle Fork of the South Platte River and its associated wetlands and riparian areas.

Note: This is the potential habitat within the PRA for both the boreal toad and the river otter.

Photo 5.
Avoidance Area 4, looking south from SH9 ROW (right side of photo). Potential palustrine emergent wetlands along banks of the Middle Fork of the South Platte River that touch the eastern boundary of the SH 9 ROW.

Note: This is the potential habitat within the PRA for both the boreal toad and the river otter.

Photo 6.
Avoidance Area 5a, looking north from SH 9 ROW. Stormwater drainage ditch that flows under roadway and continues on east side of road. Section of large ditch, potentially jurisdictional status.

Attachment C

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

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 D

Hazardous Waste Memorandum

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

Project Description

Project Name: **Bridge G-12-C**
Milepost Begin: **71** Milepost End: **72** County: **Park**
Location: **Main Street, North of Alma, CO**
Main Project Elements: **Bridge/Culvert Replacement**

Project Features (Check if applies)

☐Structure Acquisition	☒Structure Modification	☒Structure Demolition
☐New ROW	☐Easements	☐Utility Relocation
☐Excavation/Drilling	Disturbance depth (if known): ft	☐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.): **EnviroMapper, USGS TopoViewer**

Topographic Map(s) ☐Current – date: ☒Historic – year(s): **1889, 1891, 1934, 1938, 1942, 1945, 1957, 1959, 1960, 1962, 1964, 1970, 1983, 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): **Residences, Town of Dudley, CO, Dudley Cemetery, gravel mining area**

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

Site Reconnaissance & Description

☒Visual inspection conducted Inspection Date: **8/28/2020**
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:
River system, residences, small gravel pit mine, storage facility, topographic maps indicate a Cemetery to the west
☐Industrial ☒Light Industrial ☒Commercial ☒Residential ☐Agricultural ☒Undeveloped ☐ Other:**Combination of several land use types**

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**

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
Aboveground storage tank(s)	**No**	**No**	Liquid waste (pits, ponds, etc.)	**No**	**No**
Monitoring/water well(s)	**No**	**No**	Oil sheen (soil/water)	**No**	**No**
Electrical/transformer Equipment	**No**	**No**	Oil/gas well(s)	**No**	**no**
Cistern(s), sump(s) drain(s)	**No**	**No**	Mine tailings/waste	**No**	**Unknwon**
Barrel(s), drum(s), container(s)	**No**	**No**	Painted/preserved material(s)	**No**	**No**
Stockpile, surface trash, debris	**No**	**Yes**	Odor	**No**	**No**
Exposed/buried landfill	**No**	**No**	Chemical storage	**No**	**Unknown**
Batteries	**No**	**Unknown**	Suspect asbestos containing material	**No**	**No**
Surface staining	**No**	**No**	Suspected methamphetamine lab	**No**	**No**
Stressed vegetation	**No**	**No**			

Findings/Conclusions:

Are known hazardous or other waste sites on or adjacent to the project area, which may affect the project? **No**
Explain: **None of the surrounding properties are known hazardous waste sites. Additionally, several utility lines were identified in the area, including water.**

Recommendations:

☐Materials Management Plan ☐Force Account ☐Modified CDOT Specification(s) ☒Additional Assessment/Investigation*

Explain: **Unkonwn origin of stockpiled soils, old potential cemetery location, storage facility with identified vehicle storage other unknown storage, and historical gravel mining, indicate potential threats to the soil and potential groundwater at the site, it is recommended that surface soil samples are collected. Prior to any soil disturbance, utilities should be marked so they are not damaged during activities.**

***Additional work must be approved by CDOT.**

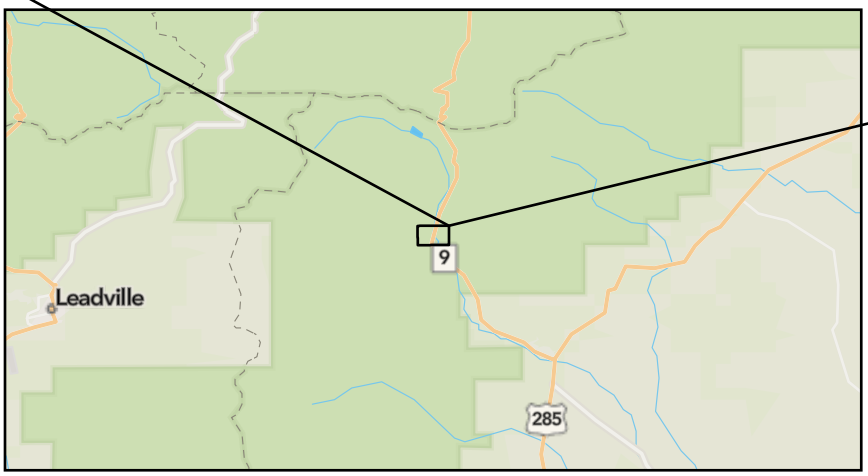
Attachments:

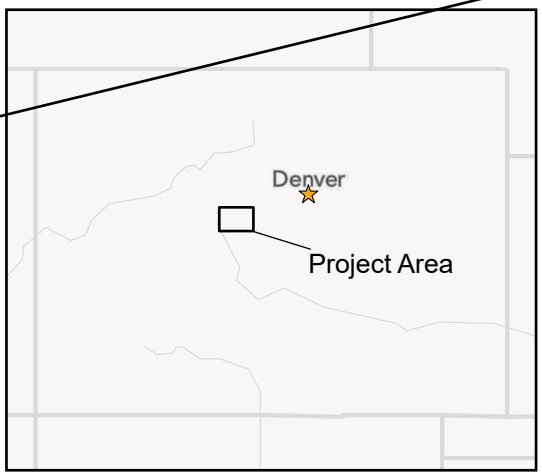
☐Environmental Database Map	**No environmental concerns were identified in the environmental map search**
☐Modified CDOT Specification(s)	
☐General Plan Note(s)	
☒Maps & Figures	**Historical topographic maps, site location map**
☐Agency File Data	

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 G-12-C
Desktop Analysis for Sensitive Environmental Resources

Figure 1
Site Location Map

Stanley Consultants INC.

Data Source: Stanley Consultants, CDOT
Image Source: ArcGIS Online, OpenStreetMap, World Street Map, World Topographic Map (no legends available)

Date Exported:

Path: C:\Users\9249\Desktop\CDOT Bridge Surveys\Fig1_VicinityMap.aprx

Attachment E

CDOT Mitigation Measures for the Canada Lynx (*Lynx canadensis*)

CDOT Mitigation Measures for the Canada Lynx (*Lynx canadensis*)
by Construction Activity

Construction	Mitigation ID #
Bank Stabilization	CL-2
Bank Stabilization	CL-3
Bank Stabilization	CL-6
Bank Stabilization	CL-8
Blasting	CL-1
Blasting	CL-2
Bridge Deck Repair	CL-2
Bridge Deck Repair	CL-8
Bridge Deck Replacement	CL-2
Bridge Deck Replacement	CL-8
Bridge over Uplands / RR / Road	CL-2
Bridge over Uplands / RR / Road	CL-3
Bridge over Uplands / RR / Road	CL-6
Bridge over Uplands / RR / Road	CL-8
Bridge Painting	CL-2
Bridge Painting	CL-8
Bridge Rail Repair/Replacement	CL-2
Bridge Rail Repair/Replacement	CL-8
Bridge Substructure New, Replacement, or Repair- Ephemeral	CL-2
Bridge Substructure New, Replacement, or Repair- Ephemeral	CL-3
Bridge Substructure New, Replacement, or Repair- Ephemeral	CL-6
Bridge Substructure New, Replacement, or Repair- Ephemeral	CL-8
Bridge Substructure New, Replacement, or Repair- Intermittent	CL-2
Bridge Substructure New, Replacement, or Repair- Intermittent	CL-3
Bridge Substructure New, Replacement, or Repair- Intermittent	CL-6
Bridge Substructure New, Replacement, or Repair- Intermittent	CL-8
Bridge Substructure New, Replacement, or Repair- Perennial	CL-2
Bridge Substructure New, Replacement, or Repair- Perennial	CL-3
Bridge Substructure New, Replacement, or Repair- Perennial	CL-6
Bridge Substructure New, Replacement, or Repair- Perennial	CL-8
Bridge Superstructure New, Replacement, or Repair - Intermittent	CL-2
Bridge Superstructure New, Replacement, or Repair - Intermittent	CL-8
Bridge Superstructure New, Replacement, or Repair - Perennial	CL-2
Bridge Superstructure New, Replacement, or Repair - Perennial	CL-8
Bridge Superstructure New, Replacement, or Repair- Ephemeral	CL-2
Bridge Superstructure New, Replacement, or Repair- Ephemeral	CL-8
Channel Grade Stabilization Structures	CL-2
Channel Grade Stabilization Structures	CL-8
Channelization, Ephemeral	CL-2
Channelization, Ephemeral	CL-8
Channelization, Intermittent	CL-2
Channelization, Intermittent	CL-8
Channelization, Perennial	CL-2
Channelization, Perennial	CL-8
Clearing	LAA
Cofferdams	CL-2
Cofferdams	CL-8
Culvert New, Replacement, Extension, Repair- Ephemeral	CL-2
Culvert New, Replacement, Extension, Repair- Ephemeral	CL-3
Culvert New, Replacement, Extension, Repair- Ephemeral	CL-4
Culvert New, Replacement, Extension, Repair- Ephemeral	CL-6
Culvert New, Replacement, Extension, Repair- Ephemeral	CL-8

CDOT Mitigation Measures for the Canada Lynx (*Lynx canadensis*)
by Construction Activity

Construction	Mitigation ID #
Culvert New, Replacement, Extension, Repair- Intermittent	CL-2
Culvert New, Replacement, Extension, Repair- Intermittent	CL-3
Culvert New, Replacement, Extension, Repair- Intermittent	CL-4
Culvert New, Replacement, Extension, Repair- Intermittent	CL-6
Culvert New, Replacement, Extension, Repair- Intermittent	CL-8
Culvert New, Replacement, Extension, Repair- Perennial	CL-2
Culvert New, Replacement, Extension, Repair- Perennial	CL-3
Culvert New, Replacement, Extension, Repair- Perennial	CL-4
Culvert New, Replacement, Extension, Repair- Perennial	CL-6
Culvert New, Replacement, Extension, Repair- Perennial	CL-8
Detention Basin	CL-2
Detention Basin	CL-3
Detention Basin	CL-6
Detention Basin	CL-8
De-watering	CL-2
De-watering	CL-8
Drilled Shafts	CL-1
Drilled Shafts	CL-2
Equipment Staging/Maintenance	CL-2
Equipment Staging/Maintenance	CL-3
Equipment Staging/Maintenance	CL-6
Equipment Staging/Maintenance	CL-8
Erosion Control- Barriers	CL-2
Erosion Control- Barriers	CL-8
Erosion Control- Erosion Checks	CL-2
Erosion Control- Erosion Checks	CL-8
Erosion Control- Inlet/Outlet Protection	CL-2
Erosion Control- Inlet/Outlet Protection	CL-8
Erosion Control- Mulching	CL-2
Erosion Control- Mulching	CL-8
Erosion Control- Post-construction Erosion Control	CL-2
Erosion Control- Post-construction Erosion Control	CL-8
Erosion Control- Rolled Erosion Control	CL-2
Erosion Control- Rolled Erosion Control	CL-8
Erosion Control- Slope Interruption	CL-2
Erosion Control- Slope Interruption	CL-8
Erosion Control- Traps and Basins	CL-2
Erosion Control- Traps and Basins	CL-8
Erosion Control- Vegetation	CL-2
Erosion Control- Vegetation	CL-8
Fencing	CL-2
Fencing	CL-4
Fencing	CL-8
Grading- Major, beyond existing hinge point	LAA
Grading- Minor, edge of pavement to hinge point	CL-2
Grading- Minor, edge of pavement to hinge point	CL-4
Grading- Minor, edge of pavement to hinge point	CL-8
Grubbing	LAA
Guardrail Installation (New) (Cable Rail Only)	CL-1
Guardrail Installation (New) (Cable Rail Only)	CL-2
Guardrail Installation (New) (Cable Rail Only)	CL-3
Guardrail Installation (New) (Cable Rail Only)	CL-6

CDOT Mitigation Measures for the Canada Lynx (*Lynx canadensis*)
by Construction Activity

Construction	Mitigation ID #
Guardrail Installation (New) (Concrete only; i.e., Jersey Barriers)	LAA
Guardrail Installation (New) (W-Beam style)	LAA
Guardrail repair w/ soil disturbance	CL-1
Guardrail repair w/ soil disturbance	CL-2
Guardrail repair w/ soil disturbance	CL-3
Guardrail repair w/ soil disturbance	CL-6
Guardrail repair w/out soil disturbance	CL-1
Guardrail repair w/out soil disturbance	CL-2
In-Stream Diversions	CL-2
In-Stream Diversions	CL-8
Landscaping	CL-2
Landscaping	CL-3
Landscaping	CL-6
Landscaping	CL-8
Lighting	CL-5
Lighting	CL-6
Material Stockpiling	CL-2
Material Stockpiling	CL-3
Material Stockpiling	CL-6
Material Stockpiling	CL-8
Night-time Work	CL-5
Night-time Work	CL-7
Noise Walls	LAA
Overhead Utility Conduit (New)	CL-2
Overhead Utility Conduit (New)	CL-3
Overhead Utility Conduit (New)	CL-4
Overhead Utility Conduit (New)	CL-6
Overhead Utility Conduit (New)	CL-8
Pavement Removal	CL-2
Pavement Removal	CL-8
Paving	CL-2
Paving	CL-8
Piers	CL-2
Piers	CL-8
Pile Driving, Impact Method	CL-1
Pile Driving, Impact Method	CL-2
Pile Driving, Vibratory Method	CL-1
Pile Driving, Vibratory Method	CL-2
Pile/Pier Encasement	CL-1
Pile/Pier Encasement	CL-2
Pipe Jacking and Casing	CL-2
Pipe Jacking and Casing	CL-8
Removal of Structures and Obstructions	CL-2
Removal of Structures and Obstructions	CL-3
Removal of Structures and Obstructions	CL-6
Removal of Structures and Obstructions	CL-8
Replacing a Bridge with a Culvert	LAA
Retaining Walls (In Water/Wetlands)	CL-2
Retaining Walls (In Water/Wetlands)	CL-8
Retaining Walls (Not in Water/Wetlands)	LAA
Shouldering- Earth	CL-2
Shouldering- Earth	CL-3

CDOT Mitigation Measures for the Canada Lynx (*Lynx canadensis*)
by Construction Activity

Construction	Mitigation ID #
Shouldering- Earth	CL-6
Shouldering- Earth	CL-8
Shouldering- Paved	CL-1
Shouldering- Paved	CL-2
Shouldering- Paved	CL-3
Shouldering- Paved	CL-4
Shouldering- Paved	CL-6
Sidewalks and Bikeways	CL-2
Sidewalks and Bikeways	CL-3
Sidewalks and Bikeways	CL-6
Sidewalks and Bikeways	CL-8
Stream Channel Impact, Ephemeral	CL-2
Stream Channel Impact, Ephemeral	CL-8
Stream Channel Impact, Intermittent	CL-2
Stream Channel Impact, Intermittent	CL-8
Stream Channel Impact, Perennial	CL-2
Stream Channel Impact, Perennial	CL-8
Temporary Crossing, Causeway, Work Platforms	CL-2
Temporary Crossing, Causeway, Work Platforms	CL-8
Temporary Road	CL-2
Temporary Road	CL-3
Temporary Road	CL-4
Temporary Road	CL-6
Temporary Road	CL-8
Traffic and Pedestrian Signals, Dynamic Message Signs w/ soil disturb	LAA
Traffic and Pedestrian Signals, Dynamic Message Signs w/out soil disturbance	LAA
Underground Utility Conduit Installation- Boring	CL-2
Underground Utility Conduit Installation- Boring	CL-8
Underground Utility Conduit Installation- Trenched	CL-2
Underground Utility Conduit Installation- Trenched	CL-3
Underground Utility Conduit Installation- Trenched	CL-6
Underground Utility Conduit Installation- Trenched	CL-8
Wetland Mitigation	CL-2
Wetland Mitigation	CL-8
Wildlife Ramp	CL-2
Wildlife Ramp	CL-8