APPENDIX 3F

Biological Assessment

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Kimball Junction
ENVIRONMENTAL IMPACT STATEMENT

Biological Assessment

Kimball Junction Environmental Impact Statement

February 27, 2025

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by UDOT pursuant to 23 USC 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and UDOT.

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Abbreviations

BRT	bus rapid transit
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FHWA	Federal Highway Administration
GIS	geographic information systems
I-80	Interstate 80
IPaC	Information, Planning, and Conservation System
LOS	level of service
MOU	Memorandum of Understanding
MP	milepost
NEPA	National Environmental Policy Act
NOI	Notice of Intent
spp.	multiple unknown or unspecified species within a genus
SR-224	State Route 224
ssp.	subspecies
SWPPP	Stormwater Pollution Prevention Plan
UDOT	Utah Department of Transportation
UPDES	Utah Pollutant Discharge Elimination System
USC	United States Code
USFWS	United States Fish and Wildlife Service
var.	botanical variety

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1.0 Introduction

The Utah Department of Transportation (UDOT) is preparing an Environmental Impact Statement (EIS) to evaluate proposed transportation improvements at the Interstate 80 (I-80) and State Route 224 (SR-224) interchange at Kimball Junction in Summit County, Utah. The EIS has identified **Alternative C: Intersection Improvements with Pedestrian Enhancements** as the preferred alternative, and this alternative is hereafter referred to as "the project." The EIS has been prepared according to the provisions of the National Environmental Policy Act (NEPA) and other laws, regulations, and guidelines of the Federal Highway Administration (FHWA).

FHWA has assigned its responsibilities under NEPA and other federal environmental laws to UDOT for highway projects in Utah, pursuant to 23 United States Code (USC) Section 327, in a Memorandum of Understanding (MOU) dated May 26, 2022. In accordance with the assignment MOU, UDOT is carrying out the environmental review process for the Kimball Junction Project in lieu of FHWA and serves as the lead agency in the NEPA process. The assignment MOU does not change the roles and responsibilities of any other federal agency whose review or approval is required for the project.

This Biological Assessment analyzes the expected effects on listed species and/or their designated and proposed critical habitat from the Kimball Junction Project under the provisions of the federal Endangered Species Act (ESA). The project is federally funded and requires Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) for federal actions. Under the MOU, UDOT has been assigned FHWA's responsibilities for compliance with Section 7 requirements as part of the environmental review process for highway projects in Utah. A federal action agency (in this case, UDOT acting in the role of FHWA) makes an effect determination for a proposed action on each listed species that could be affected by the project.

2.0 Project Description

The project includes implementing spot improvements and widening areas of existing pavement while keeping most of the existing Kimball Junction area layout and pavement in place, including the existing I-80 and SR-224 single-point urban interchange (SPUI). The project consists of additional through travel lanes, additional turn lanes at the intersections to improve intersection efficiency and improvements for pedestrian and bicyclist accessibility. The main improvements would consist of adding dual left-turn lanes at Olympic Parkway for southbound-to-eastbound movement, adding dual left-turn lanes at Ute Boulevard for southbound-to-eastbound and northbound-to-westbound movement, and building a pedestrian undercrossing south of Ute Boulevard.

The project would also include adding an additional northbound and southbound lane on SR-224 from Olympic Parkway to Ute Boulevard, along with extending the westbound-to-northbound right-turn lane on Newpark Boulevard and extending the eastbound-to-northbound dual left-turn lanes on Ute Boulevard.

The project includes the following improvements:

- Implement intersection improvements at the existing I-80 interchange and SPUI intersection.
  - Construct an additional lane on I-80 eastbound off-ramp.
  - Add a free-right right-turn lane from the eastbound I-80 off-ramp to SR-224.
  - Construct an additional northbound through/right turn lane at the SR-224 and I-80 eastbound on-ramp.
- Implement intersection improvements at the intersections of Ute Boulevard and Olympic Parkway with SR-224.
  - Construct dual left-turn lanes on SR-224 at both Ute Boulevard and Olympic Parkway.
  - Construct an extended eastbound to northbound left-turn lane from Ute Boulevard to SR-224, thereby closing the existing left turn access to Landmark Loop and Richins Building.
  - Construct an extended westbound to northbound right-turn lane from Ute Boulevard to SR-224.
  - Construct an additional westbound through lane at Ute Boulevard across SR-224.
  - Construct an extended westbound to northbound right-turn lane from Newpark Boulevard to SR-224.
- Construct an additional right-turn lane on the northbound approach at the Ute Boulevard/Landmark Drive roundabout.
- Construct an additional lane eastbound on Newpark Boulevard from SR-224 to the Uinta Way roundabout (ends in right-turn only).
- Construct pedestrian underpass just south of Ute Boulevard and east–west crosswalks across SR-224 that would be removed at Ute Boulevard and Olympic Parkway.
- Construct a raised concrete median added to SR-224 between Ute Boulevard and Olympic Parkway.

- Construct additional northbound and southbound lanes on SR-224 between Olympic Parkway and Ute Boulevard.
- Add striped and buffered bike lanes on SR-224 between the through lane and right-turn lane to provide more formal separation from vehicle travel lanes and greater safety at the two intersections. The buffered bike lanes would be striped into the shoulders of SR-224 in both the northbound and southbound directions, and the shoulders would be widened from 8 feet to 10 feet wide to accommodate them.
    - The bike lanes would begin at the south end of the project area at the northbound SR-224 right-turn lane to Olympic Parkway, cross the Ute Boulevard and the I-80 SPUI, and end at Rasmussen Road on the north end of the project area.

The project would meet UDOT's design and safety standards and the requirements in its *Roadway Design Manual*. For Alternative C, UDOT developed a conceptual design that would maintain existing trail connections along and across SR-224 and I-80. The conceptual design includes a new pedestrian tunnel under SR-224. The improvements that would be made with Alternative C would not restrict the consideration of other reasonably foreseeable transportation improvements in the Kimball Junction area.

The improvements proposed with the project would occur primarily on existing UDOT properties. Just over 3.5 acres of new right-of-way would be required. The new right-of-way would need to be acquired primarily along I-80 and SR-224.

2.1 Construction

The project would be constructed based on available funding. UDOT could construct portions of the project based on the amount of funding while considering safety and operational benefits. Funding has not yet been allocated for the Kimball Junction Project. However, the project is included in UDOT's *Utah Long-range Transportation Plan 2023–2050* (UDOT 2023b) as a Phase 1 project (2023–2032).

2.2 Conservation Measures

Removing vegetation could introduce noxious species into the surrounding areas. To prevent further, permanent effects, UDOT will minimize temporary impacts to vegetation once construction is complete and no further disturbance is anticipated. Conservation measures will include the following:

- All fill materials brought onto the construction site will be required to be clean of any chemical contamination per UDOT's General Standard Specifications, Section 02056, *Embankment, Borrow, and Backfill*. Topsoil for landscaping must also be free of weed seeds per UDOT's General Standard Specifications, Section 02912, *Topsoil*.
- Compacted soils will be ripped, stabilized, and reseeded.
- The contractor will be required to follow noxious weed mitigation and control measures identified in the most recent version of UDOT Special Provision Section 02924S, *Invasive Weed Control*.
- Disturbed areas will be reseeded.
- Because more than 1 acre of ground would be disturbed by either action alternative, the project would require a Utah Pollutant Discharge Elimination System (UPDES) General

Stormwater Discharge Permit and a Stormwater Pollution Prevention Plan (SWPPP) consistent with UDOT's Standard Specifications, Section 01355, *Environmental Protection*, Part 1.9, *Water Resource Permits*, and Part 1.14, *Stormwater Management Compliance* (UDOT 2023). The SWPPP will identify measures to reduce impacts to receiving waters from construction activities including site grading, materials handling and storage, fueling, and equipment maintenance. Restoration efforts will also be monitored to ensure successful revegetation as typically required by an SWPPP.

- Construction would generate fugitive dust from demolition, excavation, pile driving, paving, and other construction activities. When controlling dust is necessary to protect motorists or area residents as well as vegetation communities, UDOT or its contractor will take measures to reduce fugitive dust generated by construction. Dust-suppression techniques such as watering or chemical stabilization of exposed soil, opacity observations and checks, washing vehicle tires, or other dust-minimization techniques approved by the Utah Division of Air Quality will be applied by UDOT or its contractor during construction in accordance with UDOT's *Standard Specifications for Road and Bridge Construction* (UDOT's Standard Specifications), Section 01355, *Environmental Protection*, Part 1.11, *Fugitive Dust* (UDOT 2023).
- UDOT will conduct 2 more years of clearance surveys for Ute ladies'-tresses. All surveys will be conducted according to the USFWS *Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants* (USFWS 2011) and the revised version of the 1992 *Interim Survey Requirements for Ute Ladies'-tresses Orchid (*Spiranthes diluvialis*)* (USFWS 2017a).
- Potentially suitable Ute ladies'-tresses habitat identified adjacent to the roadway and project footprint will be flagged and protected. Construction crews will be provided information about the importance of containing all work activities to the project footprint and existing roadway and will be instructed that no disturbance can occur outside that footprint or in areas flagged for protection.

On January 7, 2025, USFWS issued a proposed rule to remove the Ute ladies'-tresses from the Federal List of Endangered and Threatened Plants. If the species is delisted, the future planned surveys will not be required nor conducted, and the Ute ladies'-tresses associated conservation measures would not apply.

3.0 Project Action Area

The ESA regulations define the action area as all areas that would be affected directly or indirectly by the federal action (50 Code of Federal Regulations [CFR] Section 402.02). The USFWS Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants (USFWS 2011) stipulates that a 300-foot buffer be applied to a project footprint to account for potential indirect impacts. Therefore, the action area for Alternative C consists of the alternative's footprint plus a 300-foot buffer.

The action area is about 262 acres, 30 acres of which are the footprint and 232 acres of which are the 300-foot buffer. The action area is located along both sides of I-80 between mileposts (MP) 143.53 and 145.35 and along both sides of SR-224 between MPs 10.95 and 11.65 in Summit County, Utah. Figure 1 provides an overview map of the action area.

The action area is located in the Wasatch and Uinta Mountains ecoregion in the Mountain Valleys subregion (Woods and others 2001). The Mountain Valleys ecoregion is generally characterized by low terraces, floodplains, alluvial fans, and hills, and it has a short growing season.

The action area is located in the Lower Weber River watershed (hydrologic unit code 16020102) (USGS 2023). The hydrology of the watershed is characterized by the Weber River, which flows from the Uinta Mountains to the Great Salt Lake. Water in the action area generally flows north into East Canyon Creek, which continues northwest beyond the action area, where water is impounded in East Canyon Reservoir. Water released from East Canyon Reservoir is returned to East Canyon Creek, where it flows into the Weber River, eventually terminating into the Great Salt Lake, which is a traditional navigable water.

The action area consists primarily of roads and disturbed road shoulders, urban land developed for residential and commercial uses, upland grass communities adjacent to roads, and some wetland areas. Common upland grass species include crested wheatgrass (*Agropyron cristatum*), western wheatgrass (*Pascopyrum smithii*), and basin wildrye (*Leymus cinereus*). The wetland areas consist primarily of broadleaf cattail (*Typha latifolia*), mountain rush (*Juncus arcticus* ssp. *littoralis*), sedges (*Carex* spp.), reed canarygrass (*Phalaris arundinacea*), and meadow foxtail (*Alopecurus pratensis*).

4.0 Federally Listed Species Considered

UDOT obtained a species list from the USFWS Information, Planning, and Conservation System (IPaC) website for federally threatened, endangered, or candidate species that might occur in the action area and/or might be affected by the preferred alternative (USFWS 2025a). The IPaC report is provided as Attachment A, *IPaC Report*.

The IPaC report identified several federally listed species that might occur in the action area and/or might be affected by the preferred alternative: one bird species, yellow-billed cuckoo (*Coccyzus americanus*); two mammal species, Canada lynx (*Lynx canadensis*) and North American wolverine (*Gulo gulo luscus*); and one plant species, Ute ladies'-tresses (*Spiranthes diluvialis*). The IPaC report also identified two insect species that are proposed to be listed under the Endangered Species Act (ESA): monarch butterfly (*Danaus plexippus*) and Suckley's cuckoo bumble bee (*Bombus suckleyi*). The action area does not include designated or proposed critical habitat for any of these species.

Table 1 describes the preferred habitat for each species. UDOT conducted field surveys for wildlife; vegetation; rare, threatened, and endangered species; and aquatic resources on August 7 and 8 and September 1, 2023.There is no suitable habitat in the action area for yellow-billed cuckoo, Canada lynx, or North American wolverine. Potentially suitable habitat could exist in the action area for monarch butterfly and Suckley's cuckoo bumble bee. Potentially suitable habitat exists in the action area for Ute ladies'-tresses.

Table 1. Federally Listed Species That Might Occur in the Action Area and/or Might Be Affected by the Action Alternatives

Common Name[a] (Scientific Name)	Federal Status	Preferred Habitat[b]	Critical Habitat Present?	Potentially Suitable Habitat Present?
Birds				
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened	Yellow-billed cuckoos prefer to nest in tall cottonwood and willow riparian woodland with dense understory foliage. They prefer patches of at least 25 acres of dense riparian forest with a canopy cover of at least 50% in both the understory and overstory. USFWS's suitable habitat guidelines for this species for Utah require patches of multilayered vegetation that are at least 12 acres in extent and at least 100 meters (328 feet) wide by 100 meters long (USFWS 2017b).	Final critical habitat has been designated for this species. The action area is outside the critical habitat.	There is no suitable habitat in the action area or within a ½-mile radius. The existing riparian vegetation does not meet habitat size requirements.
Insects				
Monarch butterfly (*Danaus plexippus*)	Proposed endangered	In the spring, summer, and early fall, monarch butterflies can be found wherever there are milkweeds in fields, meadows, and parks. They overwinter in the cool, high mountains of central Mexico and woodlands in central and southern California. Milkweed (*Asclepias* spp.) is an essential feature of quality monarch habitat. Female monarch butterflies lay their eggs on the underside of young leaves or flower buds of milkweed. Common places milkweed occurs include short- and tall-grass prairies, livestock pastures, agricultural margins, roadsides, wetland and riparian areas, sandy areas, and gardens. In addition to milkweed, other nectar sources, trees for roosting, and close proximity to water are key components of monarch habitat (Western Association of Fish and Wildlife Agencies 2019).	There is proposed critical habitat for this species. The action area is outside the critical habitat.	Potentially suitable habitat exists in the action area. Milkweed plants were observed during the field survey.

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Table 1. Federally Listed Species That Might Occur in the Action Area and/or Might Be Affected by the Action Alternatives

Common Name[a] (Scientific Name)	Federal Status	Preferred Habitat[b]	Critical Habitat Present?	Potentially Suitable Habitat Present?
Suckley's cuckoo bumble bee (*Bombus suckleyi)*	Proposed endangered	Suckley's cuckoo bumble bee is an obligate parasitic species that is entirely dependent on the workers of host colonies to raise their young. Suckley's cuckoo bumble bee has two confirmed hosts, the western bumble bee (*Bombus occidentalis*) and the Nevada bumble bee (*Bombus nevadensis*); the western bumble bee is the most widely known host. Western bumble bees are known to nest primarily in underground cavities and abandoned animal burrows more often than they do in aboveground structures. Suckley's cuckoo bumble bee has a broad distribution across North America, primarily in the western half of the United States and the Yukon of Canada. It and has been found between 6 and 10,500 feet in elevation in various habitat types including prairies, grasslands, meadows, woodlands, forests, croplands, and urban areas from 6 to 10,500 feet in elevation. Suckley's cuckoo bumble bees require a diversity of native floral resources (pollen and nectar) for nutrition (USFWS 2024).	Critical habitat has not been designated for this species.	Potentially suitable habitat exists in action area. The area offers potential nesting sites and diverse native floral resources for foraging. In addition, there are records of western bumble bees, the most widely known host for Suckley's bumble bees, within a 2-mile radius of the action area (UDWR 2025).
Mammals				
Canada lynx (*Lynx canadensis*)	Threatened	The preferred habitat of Canada lynxes is boreal and montane regions dominated by coniferous or mixed forest with thick undergrowth, but lynxes also enter open forest, rocky areas, and tundra to forage for abundant prey. The major limiting factor is the abundance of snowshoe hares.	Final critical habitat has been designated for this species. The action area is outside the critical habitat.	There is no suitable habitat in the action area. The action area is largely developed and lacks extensive coniferous or mixed forest vegetation.
North American wolverine (*Gulo gulo luscus*)	Threatened	Wolverines prefer alpine tundra and mountain forest habitats in areas where snow cover persists late into the spring. Wolverines prefer areas that are not frequented by humans. Wolverines are not common in Utah.	Critical habitat has not been designated for this species.	There is no suitable habitat in the action area. The action area consists primarily of roads and road shoulders and urban land developed for residential and commercial uses, and it lacks the characteristics of quality North American wolverine habitat.

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Table 1. Federally Listed Species That Might Occur in the Action Area and/or Might Be Affected by the Action Alternatives

Common Name[a] (Scientific Name)	Federal Status	Preferred Habitat[b]	Critical Habitat Present?	Potentially Suitable Habitat Present?
Plants				
Ute ladies'-tresses (*Spiranthes diluvialis*)	Threatened	This white-flowered orchid is found below 7,000 feet in elevation in moist to very wet meadows, along streams, in abandoned stream meanders, and near springs, seeps, and lake shores where competition for light, space, water, and other resources is normally kept low by periodic or recent disturbance. Ute ladies'-tresses are also known to occur in seasonally flooded river terraces, subirrigated or spring-fed abandoned stream channels and valleys, and lake shores. Populations have also been observed along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, reservoirs, and other human-modified wetlands (Fertig and others 2005).	Critical habitat has not been designated for this species.	A total of 0.546 acre of potentially suitable habitat was identified in several wet meadow wetlands in the action area.

[a] Source: Species list from USFWS 2025a

[b] Sources: Audubon, no date; Cornell Lab of Ornithology 2019; NatureServe, no date; UDWR, no date; Utah Native Plant Society, no date; and recovery plans found in the USFWS Environmental Conservation Online System (USFWS 2025b)

4.1 Species Dismissed from Further Consideration

Yellow-billed cuckoo, Canada lynx, and North American wolverine were eliminated from further evaluation because habitat surveys found no suitable habitat for these species in the action area. Consequently, the Kimball Junction Project would have **no effect** on yellow-billed cuckoo, Canada lynx, or North American wolverine.

Potentially suitable habitat was identified in the action area for monarch butterfly; however, the proposed critical habitat for this species is outside the action area. For this reason, the Kimball Junction Project would not jeopardize the continued existence of monarch butterflies.

Potentially suitable nesting and foraging habitat was also identified in the action area for Suckley's cuckoo bumble bee. However, this critical habitat has not been proposed for this species, and it has not been observed in the United States since 2016 (USFWS 2024). Given the broad nature of potentially suitable nesting and foraging habitat, the lack of observations in the United States, and the fact that critical habitat has not been proposed, the Kimball Junction Project would not jeopardize the continued existence of Suckley's cuckoo bumble bees.

4.2 Species Carried Forward for Evaluation

Potentially suitable habitat was identified in the action area for Ute ladies'-tresses. Therefore, this species has a potential to occur in or near the action area and is carried forward for evaluation in this Biological Assessment.

5.0 Environmental Baseline

5.1 Ute Ladies'-tresses Biology

5.1.1 Description

Ute ladies'-tresses are a perennial, terrestrial orchid with erect stems that are 4 to 23 inches tall and arise from tuberous, thickened roots. Basal leaves are narrow, linear, and about 11 inches long, with leaves that become progressively smaller up the stem (Fertig and others 2005; USFWS 1992). Flowers consist of 3 to 15 small, white or ivory-colored flowers clustered into a 1-to-6-inch spike at the top of the stem. The plants typically bloom from early July through late October (Fertig and others 2005). Ute ladies'-tresses are thought to reproduce exclusively by seed. The life cycle of Ute ladies'-tresses consists of four stages: seedling, dormant, vegetative, and reproductive (flowering or fruiting) (Fertig and others 2005).

5.1.2 Status and Trends

Ute ladies'-tresses were listed as threatened under the ESA on January 17, 1992 (57 Federal Register 2048). At the time of listing, the species was reported from 10 existing populations and 7 historic locations known in Colorado, Nevada, and Utah. The species was considered vulnerable to extinction from habitat loss and modification, small population size, and low reproductive rate. Since 1992, the known range has expanded to include Idaho, Montana, Nebraska, Washington, and Wyoming and includes nearly 100 different locations (Fertig and others 2005).

At the time of listing, existing populations of Ute ladies'-tresses in Utah were found in Daggett, Duchesne, Garfield, Uintah, Utah, and Wayne Counties, and historical occurrences were known from Salt Lake, Tooele, and Weber Counties (Fertig and others 2005). These populations were dispersed across 10 different watersheds (Duchesne, Escalante, Fremont, Jordan, Lower Green, Lower Weber, Southern Great Salt Lake Desert, Spanish Fork, Upper Green–Flaming Gorge Reservoir, and Utah Lake). Since 1992, a dozen new sites have been documented along the Wasatch Front and the Uinta Basin. These sites extend the known range of Ute ladies'-tresses into Wasatch County and the Ashley-Brush, Provo, and Strawberry watersheds (Fertig and others 2005).

A draft recovery plan was written for this species in 1995 but has not been finalized (USFWS 1995). USFWS has recommended Ute ladies'-tresses be delisted as of August 2023 (USFWS 2023a).

5.1.3 Habitat

The *Species Status Assessment Report for Ute Ladies'-tresses (Spiranthes diluvialis)* (USFWS 2023b) describes adequate soil moisture, direct sunlight, pollinators, and mycorrhizae as critical needs for Ute ladies'-tresses. Adequate soil moisture can come from surface or subsurface water, but it needs to provide a year-round hydrologic regime that supplies consistent soil moisture without prolonged inundation. Direct sunlight is also a critical need for Ute ladies'-tresses in aboveground life stages. An open canopy, characteristic of early to mid-seral stage successional habitats, is needed to provide direct sunlight. Habitat maintained in an early to mid-seral successional stage is typically achieved by some sort of disturbance such as flooding events, livestock grazing, and/or agricultural mowing; however, overly frequent disturbance is detrimental to Ute ladies'-tresses. Additionally, because Ute ladies'-tresses flower for only a short time and in unpredictable numbers each year, the species needs to be part of a larger flowering plant community to maintain pollination needs. Finally,

the presence of soil mycorrhizae is a critical need for Ute ladies'-tresses. Little is known about the appropriate species of fungi needed to form mycorrhizal associations with Ute ladies'-tresses, but they likely depend on specific soil types, soil moisture, and the surrounding plant community.

Ute ladies'-tresses are known to grow in moist meadows associated with perennial stream terraces, alluvial banks, floodplains, and oxbows where vegetation cover is relatively open and not overly dense, overgrown, or overgrazed (Fertig and others 2005; USFWS 1992). A few populations are found in riparian woodlands, but the orchid seems generally intolerant of shade and prefers open, grass- and forb-dominated sites (USFWS 1995). Associated vegetation typically falls into the facultative wetland vegetation classification category (USFWS 2017a). Facultative wetland plants usually grow in wetlands but can grow in non-wetlands (Lichvar and others 2012). Ute ladies'-tresses populations can be found at elevations up to 7,000 feet in Utah (Fertig and others 2005; USFWS 2017a).

Over one-third of all known Ute ladies'-tresses populations are found on perennial stream features including alluvial banks, point bars, floodplains, or oxbows. These sites are subject to periodic floods that rework stream features and create early successional conditions that are beneficial to the establishment and persistence of Ute ladies'-tresses. Most streamside populations are dominated by perennial graminoids and forbs, particularly creeping bentgrass (*Agrostis stolonifera)*, quackgrass (*Elymus repens)*, mountain rush, and smooth horsetail (*Equisetum laevigatum*) (Fertig and others 2005).

Ute ladies'-tresses are also known to grow on seasonally flooded river terraces, in subirrigated or spring-fed abandoned stream channels and valleys, and on lake shores. Populations have also been observed along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, reservoirs, and other human-modified wetlands (Fertig and others 2005).

5.2 Ute Ladies'-tresses Survey Methodology

5.2.1 Habitat Suitability Surveys

5.2.1.1 Habitat Evaluation

Geographic information systems (GIS) software was used to develop potentially suitable habitat polygons for Ute ladies'-tresses in the action area. Biologists used tablets equipped with the ESRI data-collection application, ArcGIS Field Maps, for both field navigation and data entry. ArcGIS Field Maps included data layers for aerial images, the action area, and the USFWS Ute ladies'-tresses range map. All areas where the USFWS range map and the action area overlap were visually inspected to confirm whether these areas displayed characteristics consistent with the Ute ladies'-tresses suitable habitat criteria described above in Section 5.1.3, *Habitat*, and the revised version of the 1992 *Interim Survey Requirements for Ute Ladies'-tresses Orchid (Spiranthes diluvialis)* (USFWS 2017a). The following habitat types do not qualify as Ute ladies'-tresses habitat (USFWS 2017a):

- Sites above 7,000 feet in elevation
- Sites that are highly disturbed or modified, such as highway rights-of-way built on compacted soils or rock fill, rock or soil fills with steep back slopes, active construction sites, or landscaped bluegrass lawns
- Upland sites
- Sites entirely inundated by standing water
- Sites composed entirely of heavy clay soils
- Very saline sites such as dense monospecific stands of saltgrass (*Distichlis spicata*)
- Sites composed entirely of dense stands of reed canarygrass (*Phalaris arundinacea*), tamarisk (*Tamarix* species), greasewood (*Sarcobatus vermiculatus*), teasel (*Dipsacus sylvestris*), or common reed (*Phragmites australis*)

Polygons were mapped around areas that met the criteria for potentially suitable habitat for Ute ladies'-tresses. The habitat evaluation was conducted on August 7 and 8, 2023, and September 4 and 6, 2024.

5.2.2 Clearance Surveys

After identifying and mapping the potentially suitable habitat, biologists performed clearance surveys to determine whether Ute ladies'-tresses were present or absent in the potentially suitable habitat polygons in the action area. The clearance surveys were conducted according to the *U.S. Fish and Wildlife Service (USFWS) Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants* (USFWS 2011) and the revised version of the 1992 *Interim Survey Requirements for Ute Ladies'-tresses Orchid (Spiranthes diluvialis)* (USFWS 2017a).

Botanical surveys must be conducted in a manner that will maximize the likelihood of finding the target species. Many target species are difficult to see except when they are flowering because the flowers make a target species stand out from the surrounding plants. The flowering period for Ute ladies'-tresses across its range is early July through late October, but most plants bloom between

July 20 and August 31 (USFWS 2017a). UDOT coordinated with USFWS to confirm that reference populations of Ute ladies'-tresses were flowering or otherwise identifiable before proceeding with clearance surveys.

Systematic belt transects were established every 5 feet to cover 100% of the potentially suitable habitat mapped in the action area.[1] To achieve a 100% visual inspection of the ground surface, biologists conducted the surveys by walking the transects to determine whether Ute ladies'-tresses were present. Field data were collected according to the *U.S. Fish and Wildlife Service (USFWS) Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants* (USFWS 2011).

In addition, Ute ladies'-tresses might not flower every year. Therefore, in drainages where Ute ladies'-tresses are known to occur, USFWS recommends that surveys be conducted annually for 3 consecutive years (USFWS 2017a). The survey results presented in this Biological Assessment are for the first-year survey (conducted on September 4 and 6, 2024). Additional surveys are planned for 2025 and 2026.

5.3 Results

5.3.1 Habitat Suitability Surveys

A total of 0.546 acre of potentially suitable Ute ladies'-tresses habitat was identified in wet meadow wetlands in the action area but outside the project footprint. Figure 1 provides an overview map of the action area, and Figures 2 and 3 provide maps of the potentially suitable Ute ladies'-tresses habitat identified in the action area.

Two of these wetlands identified with potentially suitable Ute ladies'-tresses habitat are dominated by mountain rush. The hydrology source for these wetlands is stormwater runoff from adjacent roads. Two other wetlands are dominated by mountain rush, wild mint (*Mentha arvensis*), bitter dock (*Rumex obtusifolius*), and Nebraska sedge (*Carex nebrascensis*). The hydrology source for these wetlands is stormwater runoff from adjacent roads and a perennial stream.

Additional potentially suitable habitat was identified in wet meadow wetlands at the Swaner Preserve and EcoCenter and adjacent to a perennial stream that flows into Kimball Creek/East Canyon Creek. The wetlands at the Swaner Preserve and EcoCenter are dominated by mountain rush, creeping bentgrass, and Canada thistle (*Cirsium arvense*). Groundwater from a nearby perennial stream provides the hydrology source. The wetlands adjacent to Kimball Creek/East Canyon Creek are dominated by mountain rush with some reed canarygrass, Canada thistle, and showy milkweed (*Asclepias speciosa*).

All of these wetlands are dominated by plant species commonly associated with Ute ladies'-tresses across its range in Utah, and each location provides adequate soil moisture, an open canopy, and additional flowering plants to attract pollinators, all of which are critical needs for Ute ladies'-tresses. See Figures 4, 5, 6, and 7 for representative photos of the mapped potentially suitable habitat in the action area.

[1] Proposed survey times and transect widths are those specified by USFWS (2011).

Figure 1. Overview Map of the Action Area

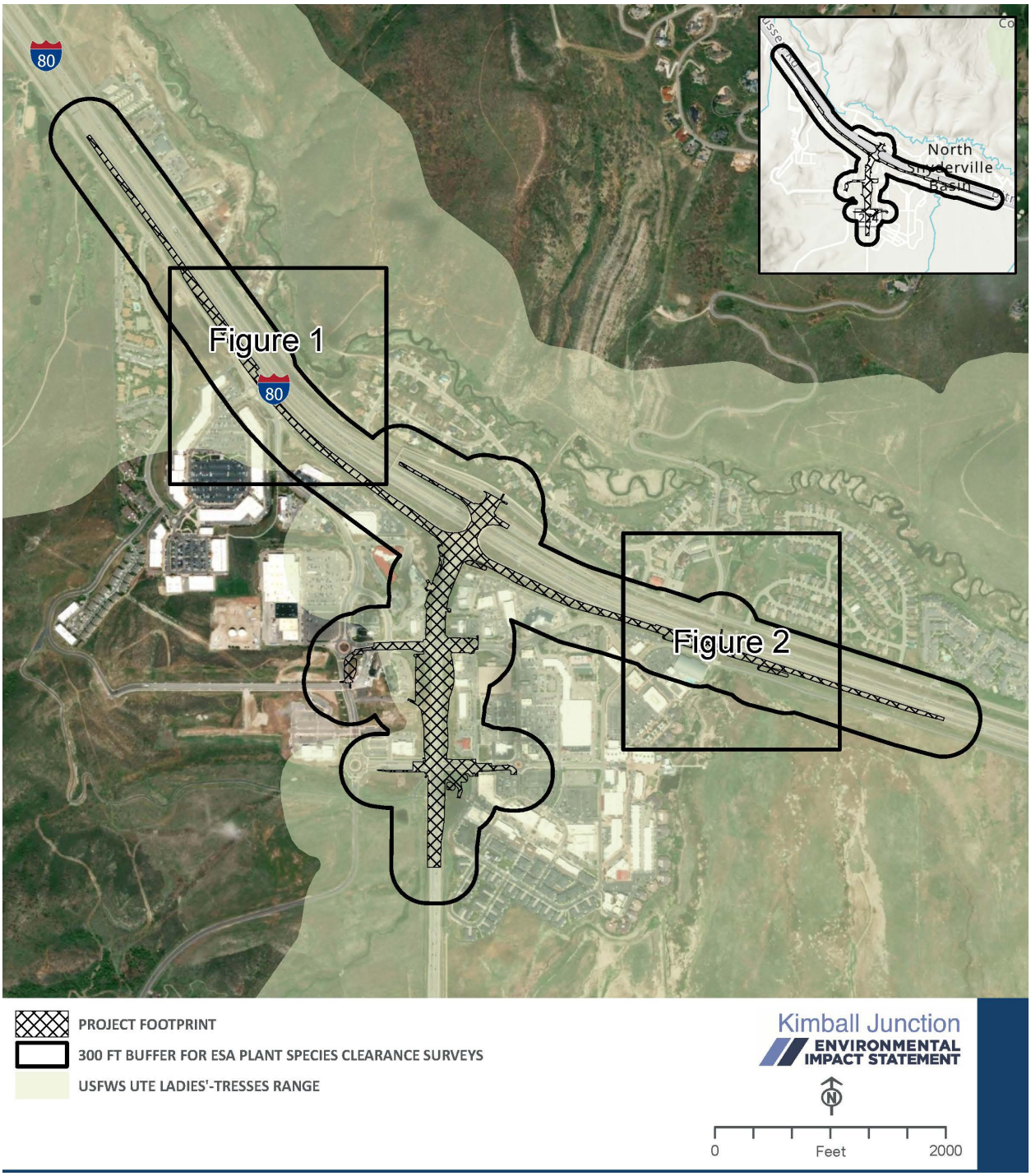

Figure 2. Potentially Suitable Ute Ladies'-tresses Habitat Identified in the Action Area (1 of 2)

Figure 3. Potentially Suitable Ute Ladies'-tresses Habitat Identified in the Alternative C Action Area (2 of 2)

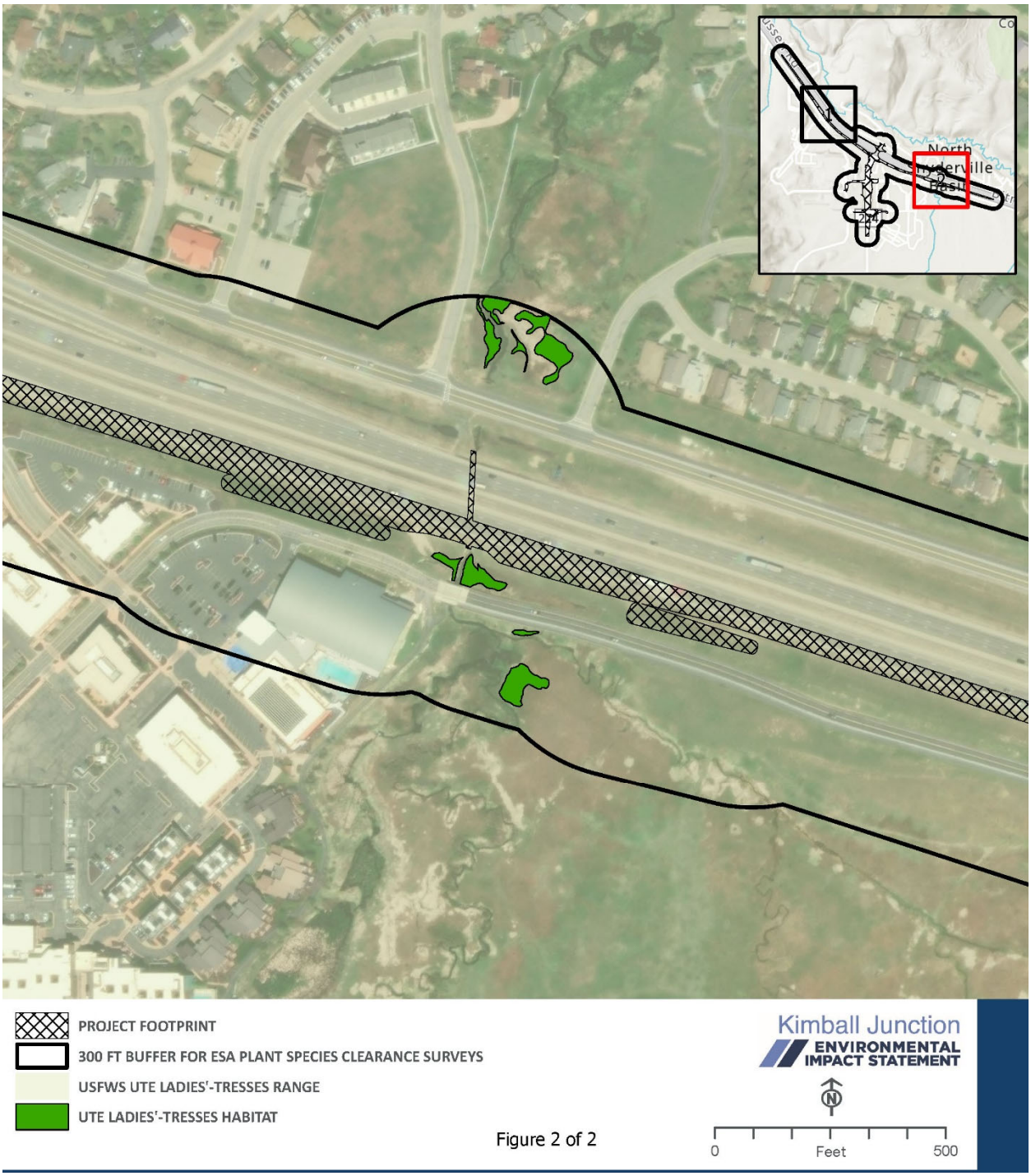

Figure 4. Representative Photo of Potentially Suitable Ute Ladies'-tresses Habitat in the Action Area Receiving Stormwater Runoff

Figure 5. Representative Photo of Potentially Suitable Ute Ladies'-tresses Habitat in the Action Area adjacent to a Perennial Stream

Figure 6. Representative Photo of Potentially Suitable Ute Ladies'-tresses Habitat in the Alternative C Action Area adjacent to a Perennial Stream at the Swaner Preserve and EcoCenter

Figure 7. Representative Photo of Potentially Suitable Ute Ladies'-tresses Habitat in the Alternative C Action Area adjacent to Kimball Creek/East Canyon Creek

5.3.2 Clearance Surveys

Clearance surveys did not identify any Ute ladies'-tresses individuals. Because USFWS recommends that Ute ladies'-tresses surveys be conducted annually for 3 consecutive years (USFWS 2017a), two more years of clearance surveys will be conducted in 2025 and 2026 for the potentially suitable habitat identified in the action area.

6.0 Effects Analysis

6.1 Direct Effects

Potentially suitable Ute ladies' tresses habitat in the action area is located outside the project footprint. Construction activities would be restricted to the footprint; therefore, construction and operation of the preferred alternative would not result in clearing, excavating, filling, or altering any potentially suitable Ute ladies'-tresses habitat in the action area. There would be no direct effects on Ute ladies'-tresses plants or potentially suitable habitat.

6.2 Indirect Effects

A total of 0.546 acre of potentially suitable Ute ladies'-tresses habitat was identified in wet meadow wetlands in the action area but outside the project footprint. Construction could affect Ute ladies'-tresses plants or potentially suitable habitat as a result of fugitive dust emissions and the introduction and/or spread of noxious and invasive weeds.

The operation of construction equipment would generate fugitive dust from loose soil. Accumulation of fugitive dust on Ute ladies'-tresses plants or potentially suitable habitat near the project footprint could restrict plant growth by inhibiting photosynthesis. However, any potential for dust-induced effects would be temporary and would be minimized by implementing fugitive-dust-control measures during construction.

Construction would remove vegetation and could introduce noxious and invasive weeds into the surrounding areas. Noxious and invasive weeds introduced or spread during construction activities would compete with native vegetation, including Ute ladies'-tresses plants, resulting in altered vegetation structure, a reduction in plant species richness, and an overall decline in potentially suitable habitat. The potential for introducing or spreading invasive species would be minimized during construction by implementing the mitigation measures specified in Section 2.2, *Conservation Measures*.

6.3 Interrelated and Interdependent Effects

Interrelated activities are those that are part of a proposed project and depend on the proposed action for their justification, and interdependent activities are those that have no independent utility apart from a proposed project. There are no interrelated or interdependent actions associated with this project; therefore, there would be no anticipated interrelated or interdependent effects.

6.4 Cumulative Effects

The ESA regulations define cumulative effects as those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject to consultation (50 CFR Section 402.02). No state or private activities that would contribute to cumulative effects have been identified for this project.

7.0 Determination of Effects Findings

All construction and operations activities would be restricted to the project footprint and would not result in any direct impacts to potentially suitable Ute ladies'-tresses habitat. Potentially suitable habitat adjacent to the project footprint will be flagged and protected. Construction crews will be provided information about the importance of restricting all work activities to the project footprint and existing roadway and will be instructed that no disturbance can occur outside of that, nor in areas flagged for protection.

Additionally, mitigation measures have been developed to minimize potential indirect effects to Ute ladies'-tresses plants and potentially suitable habitat. Any indirect effects from implementing the preferred alternative would be considered insignificant and discountable, and there are no reasonably foreseeable interrelated, interdependent, or cumulative effects of the preferred alternative.

Based on surveys completed to date and the evaluation of direct, indirect, interrelated, interdependent, and cumulative effects presented in this Biological Assessment, UDOT has determined that the project **may affect, but is not likely to adversely affect** Ute ladies'-tresses.

UDOT plans to complete additional clearance surveys for Ute ladies'-tresses during the 2025 and 2026 growing seasons. If plants are found before constructing the project, UDOT will contact USFWS to determine the next course of action for ESA Section 7 compliance.

8.0 References

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Summit County

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[UDOT] Utah Department of Transportation

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[UDWR] Utah Division of Wildlife Resources

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[USGS] U.S. Geological Survey

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ATTACHMENT A

IPaC Report

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Utah Ecological Services Field Office
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603
Phone: (801) 975-3330 Fax: (801) 975-3331

In Reply Refer To: 02/26/2025 17:42:04 UTC
Project Code: 2025-0061386
Project Name: Kimball Junction EIS, Alternative C

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Utah Ecological Services Field Office
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603
(801) 975-3330

PROJECT SUMMARY

Project Code: 2025-0061386
Project Name: Kimball Junction EIS, Alternative C
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Kimball Junction EIS, Alternative C
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.727768600000005,-111.5447017950909,14z

Counties: Summit County, Utah

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

MAMMALS

NAME	STATUS
Canada Lynx *Lynx canadensis* Population: Wherever Found in Contiguous U.S. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Species may be present based on transient occurrence as it moves through or too suitable habitat. Effects should be considered to species and projects should consult with the Service, however, depending on the project, consultation may not be necessary. Species profile: https://ecos.fws.gov/ecp/species/5123	Threatened

BIRDS

NAME	STATUS
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Suckley's Cuckoo Bumble Bee *Bombus suckleyi* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10885	Proposed Endangered

FLOWERING PLANTS

NAME	STATUS
Ute Ladies'-tresses *Spiranthes diluvialis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2159	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Utah Department of Transportation
Name: Amy Croft
Address: 2825 E Cottonwood Parkway, Suite 200
City: Cottonwood Heights
State: UT
Zip: 84121
Email amy.croft@hdrinc.com
Phone: 8017437832

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Utah Department of Transportation