APPENDIX O: Biological Resources

ADDENDUM

24-MARCH-2022

APPENDIX O – BIOLOGICAL RESOURCES – Proposed ROW Change

SPUR 399 EXTENSION EIS - US 75 to US 380, Collin County
CSJs 0364-04-051, 0047-05-058, and 0047-10-002; Dallas District

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PURPOSE OF ADDENDUM:

Changes were made to the proposed right-of-way (ROW) limits for the Spur 399 Extension in the 60% Geometric Schematic Design submittal made on 3-JAN-2022. A copy of that submittal is included in Appendix B of this DEIS. This addendum describes where the changes occurred and summarizes how those changes affected the impacts and findings disclosed in the previously approved technical reports that make up this appendix. The revised impacts based on the proposed ROW changes are disclosed in the DEIS.

UPDATED SPUR 399 EXTENSION PROJECT DESCRIPTION:

With submittal of the 60% Geometric Schematic Design on 3-JAN-2022, the description of the proposed Spur 399 Extension has been updated as follows:

> *The proposed Spur 399 Extension is comprised of improvements within the existing section of SH 5 between US 75 and Stewart Road, and new location improvements from Stewart Road to US 380 east of McKinney. Within the section of SH 5 between US 75 and Stewart Road, one new travel lane in each direction would be striped and ramping improvements would be constructed within the existing ROW and roadway pavement section to be established by the recently cleared SH 5 project (CSJs 0135-03-046 and 0135-04-033).*
>
> *From Stewart Road to US 380, the Spur 399 Extension would be constructed on new location as an 8-lane, access-controlled freeway with 2-lane, one-way frontage roads on each side, starting east of Couch Drive, within an anticipated average ROW width of 400 feet, but with areas of ROW ranging from 165 feet to 696 feet wide depending on location. Frontage roads may be eliminated, and the primary travel lanes may be elevated on structure to minimize impacts on sensitive resources. The freeway facility would also include ramps, frontage roads, and arterial roadways to support connectivity to the existing roadway network along with safety lighting/signage/ITS. Grade-separated interchanges would be constructed at major crossroads.*

DESCRIPTION OF THE PROPOSED ROW CHANGE

To streamline and accelerate the NEPA process for this project, technical studies were initiated at an early stage in schematic development. Initial technical report submittals were based on the proposed ROW established in JUL-2021. Consideration of a 'Purple 2 Option' was also dismissed. In OCT-2021, to strengthen the independent utility of the Spur 399 Extension, excess proposed ROW adjacent to US 380 was removed along with other modifications along both alignments, further reducing the total amount of ROW required. The JAN-2022 Geometric Schematic Design submittal reflects the continued refinement of the alternatives and consideration of input received during the 21-OCT-2021, public meeting and ongoing

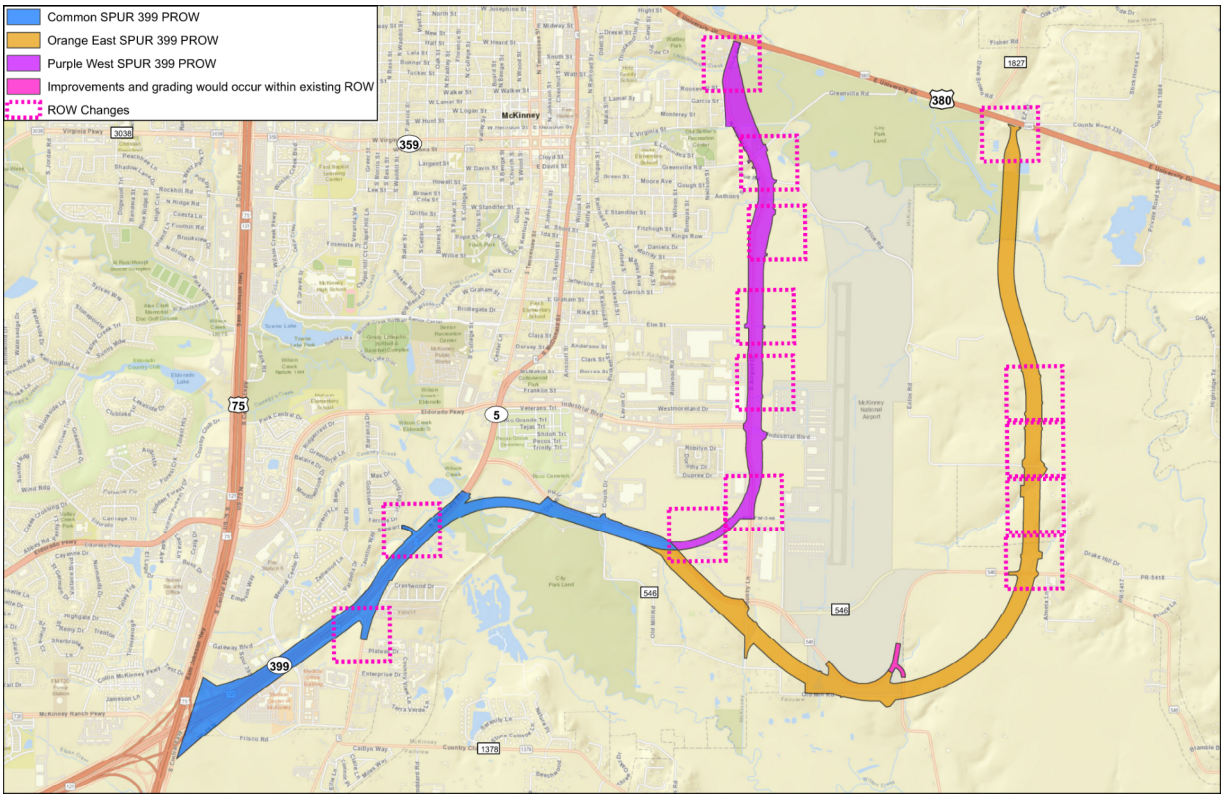
coordination with stakeholders including the City of McKinney, Collin County, and the North Texas Municipal Water District.

The January 2022 submittal made minor adjustment to the proposed ROW limits throughout the length of the new location sections of both build alternatives to account for drainage, access, and geometric improvements. The following table summarizes the proposed ROW changes.

Proposed ROW Change – July 2021 to January 2022

Build Alternative	July 2021 Proposed ROW	October 2021 Proposed ROW	January 2022 Proposed ROW
PURPLE ALTERNATIVE	303.9 acres 340 acres (Purple Option 2)	259.7 acres	263. 4 acres
ORANGE ALTERNATIVE	396.0 acres	366.4 acres	366.1 acres

Illustration of the January 2022 Proposed ROW Changes



EFFECTS OF THE JANUARY ROW CHANGE ON BIOLOGICAL RESOURCES ANALYSES AND FINDINGS

The following table summarizes the changes in the observed EMST vegetation types within the proposed ROW for the Purple and Orange Alternatives. Because more changes were made along the portion of the Purple Alternative following Airport Drive, increases are seen in the Urban High and Low Intensity categories and row crop and grassland areas that dominate that corridor. Most of the categories under the Orange Alternative decreased slightly, with minor upticks in floodplain, riparian, and deciduous woodland categories to accommodate minor drainage and side road access changes particularly in the East Fork of the Trinity River floodplain. All stream and river crossings and forested areas (including those identified as potential

mussel and habitats), water features, and floodplain/floodway areas would still be bridged to the extent practicable.

The changes in ROW anticipated for either alternative would not change the findings made to date. All TPWD BMPs previously considered would remain valid for either alternative.

0364-04-051, 0047-05-058, 0047-10-002 - SPUR 399 EXTENSION - EMST PROPOSED ROW UPDATE COMPARISION

PURPLE ALTERNATIVE (WEST)

Veg_ID	EMST Common Name	PROW Acres 60% Schematic (JAN-2022) DEIS	PROW Acres Update (OCT-2021)	Original PROW Acres (JUL-2021)
9000	Barren	1.3	1.0	0.9
207	Blackland Prairie: Disturbance or Tame Grassland	9.1	8.3	23.2
1804	Central Texas: Floodplain Hardwood Forest	7.5	7.9	11.3
1807	Central Texas: Floodplain Herbaceous Vegetation	5.8	5.8	7.3
1904	Central Texas: Riparian Hardwood Forest	1.5	1.5	1.3
1907	Central Texas: Riparian Herbaceous Vegetation	2.3	2.2	2.1
9104	Native Invasive: Deciduous Woodland	15.1	14.9	14.8
9307	Row Crops	41.4	41.2	40.1
9410	Urban High Intensity	10.2	9.8	36.4
9411	Urban Low Intensity	169.2	167.2	166.4
	TOTAL PROW ACRES	**263.4**	**259.7**	**303.9**
	Option Purple 2 Alignment			**340.0**

ORANGE ALTERNATIVE (EAST)

Veg_ID	EMST Common Name	PROW Acres 60% Schematic (JAN-2022) DEIS	PROW Acres Update (OCT-2021)	Original PROW Acres (JUL-2021)
207	Blackland Prairie: Disturbance or Tame Grassland	53.6	53.5	64.2
1103	Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland	0.6	0.6	0.6
1104	Edwards Plateau: Oak - Hardwood Motte and Woodland	5.9	5.9	5.6
1107	Edwards Plateau: Savanna Grassland	0.6	0.6	0.6
1804	Central Texas: Floodplain Hardwood Forest	10.5	10.6	9.5
1807	Central Texas: Floodplain Herbaceous Vegetation	13.9	13.8	13.8
1904	Central Texas: Riparian Hardwood Forest	8.1	7.4	5.3
9104	Native Invasive: Deciduous Woodland	42.2	42.0	40.8
9307	Row Crops	78.3	78.3	81.6
9410	Urban High Intensity	7.2	7.2	13.9
9411	Urban Low Intensity	143.6	144.9	158.9
9600	Open Water	1.5	1.5	1.2
	TOTAL PROW ACRES	**366.1**	**366.4**	**396.0**

Appendix O-1: Species Analysis Spreadsheet

SPECIES ANALYSIS SUMMARY
Project Name: Spur 399
CSJ(s): 0364-04-051, 0047-05-058, 0047-10-002

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/ Absence survey conducted?
Collin	Birds	Black Rail	*Laterallus jamaicensis*	Black rails are year-round residents of the central and upper coast and migrants in the eastern part of the state. The species nests in salt, brackish, and freshwater marshes, pond borders, wet meadows, and wetlands with hydrophytic grass species. Water depth is an important and key habitat component, as the species typically is found where water is less than two to four centimeters deep. Other significant habitat factors may include vegetation density, distance to open water, and water regime stability. Nesting typically occurs in the highest sections of the marsh, which have mesic to hydric soils and are flooded by only the highest tides. Nests are built in areas with saturated or shallowly flooded soils and dense vegetation on damp ground, on mat of previous year's dead grasses, or over shallow water. In salt or brackish marshes, typical habitat includes dense stands of cordgrasses (*Spartina* sp.), spikegrasses (*Distichlis* sp.), and needlerush (*Juncus* sp.), or, in more upland saltbush communities along marsh edges. Typical freshwater habitat includes species such as cattail (*Typha*) and bulrush (*Scirpus* sp.). Non-breeding habitat is thought to be similar to breeding habitat.	Y	Three emergent wetlands were observed in the action area during field visits in August 2020 and June 2021 by Derek Green. Two of them were determined to be unsuitable habitat because they lack the vertical vegetation height, have too much bare ground, too much open water, and are too open. The third wetland was determined to be marginal habitat. Such habitat was observed during field visits in August 2020 and June 2021 by Derek Green and discussed further with species specialist, Dennis Palafox.	T	No effect	T	No impact	Marginal habitat occurs in the project area. Migratory stopover occurrence would be incidental and ephemeral. Bird BMPs would be implemented.	N
Collin	Birds	Least Tern - Migratory	*Sternula (=Sterna) antillarum*	The interior population (subspecies *athalassos*) of the Least Tern nests on bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs. It occasionally nests on man-made structures such as sand and gravel pits or gravel rooftops. Preferred habitat includes sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs. Colony sites can move annually, depending on landscape disturbance and vegetation growth at established colonies. It is known to nest at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, and along the Red River.	N/A	The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Least Tern is not expected to regularly occur and any use of this habitat would be incidental.	—	N/A	E	No impact	The project area does not contain suitable breeding or wintering habitat for the Least Tern.	N

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Collin	Birds	Piping Plover - Migratory	*Charadrius melodus*	This migratory species overwinters in Texas, where it occurs on beaches, ephemeral sand flats, barrier islands, sand, mud, algal flats, washover passes, salt marshes, lagoons, and dunes along the Gulf Coast and adjacent offshore islands, including spoil islands in the Intracoastal Waterway. Algal flats appear to be the highest quality habitat because of their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low or very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Piping Plover only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Piping Plover is not expected to regularly occur and any use of this habitat would be incidental.	T	No effect or Take	T	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Piping Plover.	N
Collin	Birds	Red Knot - Migratory	*Calidris canutus rufa*	The species is a winter resident and migrant in Texas. It is primarily found in marine habitats such as sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps during winter months. It primarily occurs along the Gulf coast on tidal flats and beaches and less frequently in marshes and flooded fields. It has occasionally been observed along shorelines of large lakes and freshwater marshes.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Red Knot only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Red Knot is not expected to regularly occur and any use of this habitat would be incidental.	T	No effect or Take	T	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Red Knot.	N

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Collin	Birds	White-faced Ibis	*Plegadis chihi*	The species is found in the Western Gulf Coastal Plains ecoregion of Texas. Preferred habitat includes freshwater wetlands, marshes, ponds, rivers, irrigated land, and sloughs, but it occasionally forages in brackish or saltwater marshes. It nests in marshes in low trees, on the ground in bulrushes (Scirpus sp.) or reeds, or on floating mats.	Y	Edges of creeks, small ponds, wet meadows, and flooded cropland would provide suitable habitat in the project area and vicinity for this species during migration. Such habitat was observed during field visits in August 2020 and June 2021 by Derek Green.	—	N/A	T	May impact	Suitable habitat is present in the project area. Bird BMPs would be implemented.	N
Collin	Birds	Whooping Crane	*Grus americana*	The species breeds in Canada and winters on the Texas coast at Aransas National Wildlife Refuge. During migration it typically stops to rest and feed in open bottomlands of large rivers and marshes but, like other waterbirds, it may also utilize flooded croplands, playas, large wetlands associated with lakes, small ponds, and various other aquatic features. Typical migration habitat includes sites with good horizontal visibility, water depth of 30 centimeters or less, and minimum wetland size of 0.04 hectare for roosting.	Y	The project lies at the edge of the Whooping Crane migration corridor within the zone that encompasses 95 percent of known sightings. Suitable stopover habitat, such as flooded croplands, dry croplands, emergent wetlands, and small ponds were observed in the project area and vicinity by Derek Green during the August 2020 and June 2021 field visits.	E	No effect	E	No impact	Suitable habitat is present in the project area. Migratory stopover occurrence would be incidental and ephemeral.	N

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Collin	Birds	Wood Stork	*Mycteria americana*	The species breeds in Mexico, and nesting sites have not been recorded in Texas since 1960. However, post-breeding migrants disperse into Texas in the summer. Foraging habitat includes freshwater prairie ponds, flooded pastures or fields, ditches, and other shallow standing water with an open canopy, occasionally including brackish wetlands. The species typically roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries).	Y	Edges of creeks with an open canopy, small ponds, flooded meadows, and flooded cropland would provide suitable habitat in the action area and vicinity for this species during post-breeding migration. Such habitat was observed during field visits in August 2020 and June 2021 by Derek Green.	—	N/A	T	May impact	Suitable habitat is present in the project area. Bird BMPs would be implemented.	N
Collin	Insects	Monarch Butterfly	*Danaus plexippus*	Found statewide. Adults are found in a variety of habitats including native prairies, pastures, open woodlands and savannas, desert scrub, roadsides, and other habitats with abundant nectar plants, including urbanized areas. Although adults may be present year round, they are primarily encountered between March and November, and are most commonly observed in the summer and fall during breeding and migration. Caterpillars are found on various species of the family Asclepiadaceae (occasionally treated as a subfamily of Apocynaceae). Common host plants in Texas include milkweeds (Asclepias spp.) milkweed vines (Matelea spp.), climbing milkweed (Funastrum spp.), swallowworts (Cynanchum spp.) and Anglepod (Gonolobus suberosus). Caterpillars are most frequently observed between April and September."	Y	Suitable habitat occurs in the project area.	C	May affect	—	N/A	The project may affect the monarch butterfly. While TxDOT is a Partner in the Nationwide Candidate Conservation Agreement for Monarch Butterfly on Energy and Transportation Lands, the project involves new location and would not be completed before FY 2024, when USFWS intends to propose listing. If this species is proposed for listing during the life of this project, the effects to monarch butterflies will be reevaluated to determine the appropriate course of action, which may include conference or consultation with USFWS.	N

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Collin	Mollusks	Louisiana Pigtoe	*Pleurobema riddellii*	Freshwater mussel currently found in the Sabine, Neches, and Trinity River basins in Texas. The species occurs in streams to medium-sized rivers with moderate flow. In Texas, the species has only been documented occurring in relatively shallow lotic waters with preferable substrate being sand and sand with gravel and silt. It is not generally known to tolerate impoundments.	Y	Wilson Creek (purple and orange), East Fork Trinity River (purple [east alternative] and orange) and tributaries of East Fork Trinty River (purple and orange) may provide habitat for this species.	–	N/A	T	May impact	Suitable habitat is present in the project area, and the Freshwater Mussel BMPs would be implemented.	N
Collin	Mollusks	Texas Fawnsfoot	*Truncilla macrodon*	A freshwater mussel that is currently limited to the Brazos, Colorado, and Trinity River basins in Texas. The species occupies large streams to medium rivers and is intolerant of impoundment. Little is known about the species due to lack of representative specimens, however it is thought that the species prefers protected areas near shore in water with a moderate current over mud, sandy mud, and gravel substrates. It is also found in perennial irrigation canals for rice.	Y	Wilson Creek (purple and orange), East Fork Trinity River (purple [east alternative] and orange) and tributaries of East Fork Trinty River (purple and orange) may provide habitat for this species.	PT	May affect	T	May impact	Suitable habitat is present in the project area, and the Texas fawnsfoot may be affected. Freshwater Mussel BMPs would be implemented. Section 7 consultation/conference with USFWS would be completed.	N
Collin	Mollusks	Texas Heelsplitter	*Potamilus amphichaenus*	A freshwater mussel currently known from the Trinity, Neches, and Sabine River basins. The species occurs in small streams to medium rivers with sand or mud substrate. It is found in flowing water but not in riffles or shoals. It prefers quiet waters and can be found in reservoirs.	Y	Wilson Creek (purple and orange), East Fork Trinity River (purple [east alternative] and orange) and tributaries of East Fork Trinty River (purple and orange) may provide habitat for this species.	–	N/A	T	May impact	Suitable habitat is present in the project area, and the Freshwater Mussel BMPs would be implemented.	N
Collin	Reptiles	Alligator Snapping Turtle	*Macrochelys temminckii*	Occurs in East Texas where it inhabits perennial water bodies such as the deep water of rivers, canals, lakes, and oxbows, along with swamps, bayous, and ponds near deep running water. Preferred habitat is usually in water with a mud bottom and abundant aquatic vegetation, but the species may use sand-bottomed creeks.	Y	Suitable habitat is present in East Fork Trinity River and Wilson Creek.	–	N/A	T	May impact	Suitable habitat is present in the project area. Species-specific BMPs would be implemented.	N
Collin	Reptiles	Texas Horned Lizard	*Phrynosoma cornutum*	The species is found in semi-arid open areas with scattered vegetation comprised of bunchgrass, cacti, yucca, mesquite, acacia, juniper, or other woody shrubs and small trees commonly found in loose sandy or loamy soils.	N	The loose sandy or loamy soils with cacti/yucca/bunchgrass vegetation associated with this species were not observed in the project area during field visits in August 2020 and June 2021 by Derek Green.	–	N/A	T	No impact	No suitable habitat is present in the project area.	N

SPECIES ANALYSIS SUMMARY (SGCN)
Project Name: Spur 399
CSJ(s): 0364-04-051, 0047-05-058, 0047-10-002

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Collin	Amphibian	Southern crawfish frog	*Lithobates areolatus areolatus*	Terrestrial and aquatic: The terrestial habitat is primarily grassland and can vary from pasture to intact prairie; it can also include small prairies in the middle of large forested areas. Aquatic habitat is any body of water but preferred habitat is ephemeral wetlands (TPWD, 2021a).	Y	Creeks, other waterbodies, and wetlands in the project area could provide habitat for reproduction. Such habitat was observed during field visits in August 2020 and June 2021 by Derek Green.	May impact	Suitable habitat is present in the project area. Species-specific BMPs would be implemented and include the following: 1) Minimize impacts to wetland habitats including isolated ephemeral pools, 2) Aquatic Amphibian and Reptile BMPs, 3) Terrestrial Amphibian and Reptile BMPs, 4) Water Quality BMPs, and 5) Vegetation BMPs.	N
Collin	Amphibian	Strecker's chorus frog	*Pseudacris streckeri*	Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates (TPWD, 2021a).	Y	Creeks, other waterbodies, and wetlands in the project area could provide habitat for reproduction. Such habitat was observed during field visits in August 2020 and June 2021 by Derek Green.	May impact	Suitable habitat is present in the project area. Species-specific BMPs would be implemented and include the following: 1) Aquatic Amphibian and Reptile BMPs, 2) Terrestrial Amphibian and Reptile BMPs, 3) Water Quality BMPs, and 4) Vegetation BMPs	N
Collin	Amphibian	Woodhouse's toad	*Anaxyrus woodhousii*	This species uses a wide variety of terrestrial habitats, including forests, grasslands, and barrier island sand dunes; it requires aquatic habitats for reproduction, which are equally varied (TPWD, 2021a).	Y	Creeks, other waterbodies, and wetlands in the project area could provide habitat for reproduction. Several records in vicinity of project (iNaturalist, 2021; TPWD, 2021b).	May impact	Suitable habitat is present in the project area. Species-specific BMPs would be implemented and include the following: 1) Aquatic Amphibian and Reptile BMPs, 2) Terrestrial Amphibian and Reptile BMPs, 3) Water Quality BMPs, and 4) Vegetation BMPs	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Collin	Bird	Bald eagle	*Haliaeetus leucocephalus*	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds (TPWD, 2021a).	Y	Recent sightings have been reported for this species from several waterbodies, including Towne Lake and Lavon Lake, in the vicinity of the project (eBird, 2021; iNaturalist, 2021). An inactive nest is located along the East Fork Trinity River approximately 0.6 mile east of the orange alternative. An adult Bald Eagle was observed carrying nesting material by BMcD ecolgists Derek Green and Gary Newgord on March 31, 2021. The nest is thought to be farther east of the inactive nest. Upstream of the nest where the alternatives cross the river, trees may provide roosting habitat; the trees in this area are probably too far from large waterbodies.	May impact	Roosting habitat occurs in the project area at the crossing of the East Fork Trinity River. TxDOT would comply with the BGEPA and implement the Bird BMPs.	N
Collin	Bird	Chestnut-collared longspur	*Calcarius ornatus*	Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands (TPWD, 2021a).	Y	"ROW Crops" are common in the action area. After harvesting, these areas provide the shortgrass settings interspersed with bare ground favored by this species duirng the winter. Some areas containing "Central Texas: Floodplain Herbaceous Vegetation" and "Blackland Prairie: Disturbance or Tame Grassland" would also provide habitat.	May impact	Suitable habitat is present in the action area. The Bird BMPs would be implemented.	N
Collin	Bird	Western burrowing owl	*Athene cunicularia hypugaea*	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nest and roosts in abandoned burrows (TPWD, 2021a).	Y	Suitable wintering habitat such as open grasslands and savannahs occur within project area.	May impact	Suitable habitat is present in the project area. The Bird BMPs would be implemented.	N
Collin	Crustacean	A cave obligate isopod	*Caecidotea bilineata*	A spring obligate. *Caecidotea bilineata* is known only from non-cave groundwater habitats in deposits of Cretaceous age. It is presumably a phreatobite. Fine-scale habitat requirements unknown (TPWD, 2021a).	Y	Cretaceous-age deposits (Austin Group [Kau]) occur in action area.	May impact	Suitable habitat may be present in the project area. Aquatic Invertebrate BMPs would be implemented.	N

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Collin	Mammal	Big brown bat	*Eptesicus fuscus*	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas (TPWD, 2021a).	Y	Suitable woodland habitat occurs in the project area.	May impact	Suitable habitat is present in the project area. Bat BMPs would be implemented.	N
Collin	Mammal	Eastern red bat	*Lasiurus borealis*	Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration." Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur Statewide (TPWD, 2021a).	Y	Suitable woodland habitat occurs in the project area.	May impact	Suitable habitat is present in the project area. Bat BMPs would be implemented.	N
Collin	Mammal	Eastern spotted skunk	*Spilogale putorius*	A generalist; open fields, prairies, croplands, fence rows, farmyards, forest edges and woodlands. Prefers wooded, brushy areas; tallgrass prairies (TPWD, 2021a).	Y	Habitat occurs within the project area and in the general project vicinity. Has been recorded from the project vicinity (TPWD, 2021b).	May impact	Suitable habitat is present in the project area. General Design and Construction BMPs would be implemented.	N
Collin	Mammal	Hoary bat	*Lasiurus cinereus*	Hoary bats are highly migratory, high-flying bats that have been noted throughout the State. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the State and lowland deserts. Tend to be captured over water and large, open flyways (TPWD, 2021a).	Y	Suitable woodland habitat occurs in the project area.	May impact	Suitable habitat is present in the project area. Bat BMPs would be implemented.	N
Collin	Mammal	Long-tailed weasel	*Mustela frenata*	Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges and rocky desert scrub. Usually live close to water (TPWD, 2021a).	Y	Habitat occurs in the general project vicinity.	May impact	Suitable habitat is present in the project area. General Design and Construction BMPs would be implemented.	N
Collin	Mammal	Mountain lion	*Puma concolor*	Generalist; found in a wide range of habitats Statewide. Found most frequently in rugged mountains and riparian zones (TPWD, 2021a).	Y	Known to occur in the general vicinity (landowner showed BMcD ecologist Derek Green a cell phone photo of a mountain lion on his property during a site visit on August 24, 2020, for the US 380 project). Riparian and woodland habitat along East Fork Trinity River and Wilson Creek in the action area may provide a travel corridor .	May impact	Suitable habitat is present in the action area. General Design and Construction BMPs would be implemented.	N

SPECIES ANALYSIS SUMMARY (SGCN)
Project Name: Spur 399
CSJ(s): 0364-04-051, 0047-05-058, 0047-10-002

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Collin	Mammal	Muskrat	*Ondatra zibethicus*	Found in fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. Most abundant in areas with cattail. Dens in bank burrow or conical house of vegetation in shallow vegetated water (TPWD, 2021a).	Y	Emergent wetlands and ponds occur in the action area. East Fork of the Trinity River, Wilson Creek, and other creeks also occur in the action area.	May impact	Suitable habitat is present in the project area. General Design and Construction BMPs, Water Quality BMPs, and Vegetation BMPs would be implemented.	N
Collin	Mammal	Swamp rabbit	*Sylvilagus aquaticus*	Inhabits poorly drained river bottoms and coastal marshes (Schmidly and Bradley, 2016). Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks, and rivers (TPWD, 2021a).	Y	Flooded bottomland forests are present within the project area.	May impact	Suitable habitat is present in the project area. General Design and Construction BMPs would be implemented.	N
Collin	Mammal	Tricolored bat	*Perimyotis subflavus*	Forest, woodland, and riparian areas are important. Caves are very important to this species (TPWD, 2021a).	Y	Suitable woodland habitat occurs in the project area. This bat potentially could occur within bridge crevices in the project area.	May impact	Suitable habitat is present in the project area. Bat BMPs would be implemented.	N
Collin	Mammal	Western hog-nosed skunk	*Conepatus leuconotus*	Habitats include woodlands, grasslands, and deserts to 7,200 feet; most common in rugged, rocky canyon country (TPWD, 2021a).	Y	This species has been recorded from Collin County (Schmidly and Bradley, 2016) and from the project vicinity (TPWD, 2021b). Wooded areas and grasslands in the project area may provide habitat.	May impact	Suitable habitat is present in the project area. General Design and Construction BMPs would be implemented.	N
Collin	Reptile	Eastern box turtle	*Terrapene carolina*	Eastern box turtles inhabit forests, fields, forest-brush, and forest ecotones. In some areas they move seasonally from fields in spring to forest in summer (TPWD, 2021a).	Y	Several records of this species occur in the vicinity of the project (iNaturalist, 2021). Wooded areas and grasslands in the project area would provide habitat.	May impact	Suitable habitat is present in the project area. The Terrestrial Reptile BMPs and Vegetation BMPs would be implemented.	N
Collin	Reptile	Slender glass lizard	*Ophisaurus attenuatus*	Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil (TPWD, 2021a).	Y	Grasslands and woodlands occur in the action area; however, the soils may not be sandy enough.	May impact	Suitable habitat is present in the project area. The Terrestrial Reptile BMPs and Vegetation BMPs would be implemented.	N
Collin	Reptile	Texas garter snake	*Thamnophis sirtalis annectens*	Terrestrial and aquatic. Habitats include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical (TPWD, 2021a).	Y	Several records of this species occur in the vicinity of the project (iNaturalist, 2021; TPWD, 2021b). Grasslands and creeks in and near the project area may provide habitat.	May impact	Suitable habitat is present in the action area. The Terrestrial Reptile BMPs and Vegetation BMPs would be implemented.	N
Collin	Reptile	Timber (canebrake) rattlesnake	*Crotalus horridus*	Swamps, floodplains, upland pine and deciduous woodland, riparian zones, and abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover -- e.g., grapevines, palmetto (TPWD, 2021a).	Y	Bottomland and upland hardwood forest, riparian areas, and agricultural lands occur in the project area and vicinity.	May impact	Suitable habitat is present in the project area. The Terrestrial Reptile BMPs and Vegetation BMPs would be implemented.	N

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Collin	Reptile	Western box turtle	*Terrapene ornata*	Ornate or western box turtles inhabit prairie grassland, pasture, fields, sandhills, and open woodland (TPWD, 2021a).	Y	Pastureland, grassland, and open woodland occur in project area.	May impact	Suitable habitat is present in the project area. The Terrestrial Reptile BMPs and Vegetation BMPs would be implemented.	N

References:

eBird. (2021). *eBird: An online database of bird distribution and abundance.* Web application. Ithaca, New York: Cornell Lab of Ornithology. Retrieved July 2021 from http://www.ebird.org

iNaturalist. (2021). *Observations.* Retrieved July 2021 from https://www.inaturalist.org/observations?place_id=2639

Lockwood, M.W. and B. Freeman. (2014). *The TOS handbook of Texas birds* . College Station: Texas A&M University Press.

Schmidly, D.J. and R. D. Bradley. (2016). *The mammals of Texas, 7th edition* . Austin: University of Texas Press.

Texas Parks and Wildlife Department (TPWD). (2021a). Rare, threatened, and endangered species of Texas by county. Retrieved July 14, 2021 from https://tpwd.texas.gov/gis/rtest/

Texas Parks and Wildlife Department (TPWD). (2021b). *Texas Natural Diversity Database (TXNDD) Rare species, shapefiles, and element of occurrence records* . Received April 21, 2021

U.S. Fish and Wildlife Service (USFWS). (2021). *IPaC – Information, Planning, and Conservation System* . Retrieved June 17, 2021, from http://ecos.fws.gov/ipac/

Williams, P.H., R.W. Thorp, L.L. Richardson, and S.R. Colla. (2014). The Bumble bees of North America: An identification guide. Princeton University Press, Princeton.

Appendix O-2: Species Analysis Form

Form
Species Analysis

Project Name: **Spur 399 Extension**

CSJ(s): **0364-04-051, 0047-05-058, 0047-010-002**

County(ies): **Collin**

Date Analysis Completed: **9/3/2021**

Prepared by: **Derek Greene**

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 9, 2019, and executed by FHWA and TxDOT.

I. Endangered Species Act

Select the appropriate statement below based on the determinations recorded in the completed project-specific species analysis spreadsheet:

☐ This project does not require consultation with or authorization from the USFWS under the Endangered Species Act.

☒ This project requires consultation with or authorization from the USFWS under the Endangered Species Act.

For a project that requires federal authorization or approval, if the completed project-specific species analysis spreadsheet indicates, “May affect,” for any species, then consultation with the USFWS is required under section 7 of the Endangered Species Act and the second checkbox above must be checked.

For more information regarding the Endangered Species Act, see **ENV’s Endangered Species Act Handbook**.

II. TPWD Coordination

Select the appropriate statement below:

☒ This project requires an environmental assessment (EA) or environmental impact statement (EIS), and therefore must be coordinated with TPWD under the 2021 TxDOT/TPWD MOU.

☐ This project is a categorical exclusion (CE)-level project; therefore coordination with TPWD under the 2021 TxDOT/TPWD MOU is not required; however, it will be coordinated with TPWD under the 2021 TxDOT/TPWD MOU at the TxDOT district’s discretion.

☐ This project is a categorical exclusion (CE)-level project; therefore coordination with TPWD under the 2021 TxDOT/TPWD MOU is not required and it will not be coordinated with TPWD under 2021 TxDOT/TPWD MOU at the TxDOT district's discretion.

For any project that will be coordinated with TPWD, completed the **Documentation of Texas Parks and Wildlife Department Best Management Practices Form**.

For more information regarding TPWD Coordination, see **ENV's Guidance: TPWD Coordination Under the 2021 Memorandum of Understanding**.

III. Bald and Golden Eagle Protection Act (BGEPA)

Select the appropriate statement below:

☒ This project is not within 660 feet of an active or inactive Bald or Golden Eagle nest. Therefore, no coordination with USFWS is required.

☐ This project is within 660 feet of an active or inactive Bald or Golden Eagle nest; however, construction activities within 660 feet will not occur during the nesting season, and the project will adhere to the National Bald Eagle Management Guidelines of 2007. Therefore, no coordination with USFWS is required.

☐ This project is within 660 feet of an active or inactive Bald or Golden Eagle nest, and construction within 660 feet will occur during the nesting season or the project will not adhere to the National Bald Eagle Management Guidelines of 2007. Therefore, coordination with USFWS to obtain a Non-Purposeful Take Permit is required.

For more information regarding BGEPA, see Section 7.0 of **ENV's Ecological Resources Handbook**.

IV. Migratory Bird Protections

This project will comply with applicable provisions of the Migratory Bird Treaty Act (MBTA) and Texas Parks and Wildlife Code Title 5, Subtitle B, Chapter 64, Birds. It is the department's policy to avoid removal and destruction of active bird nests except through federal or state approved options. In addition, it is the department's policy to, where appropriate and practicable:

- use measures to prevent or discourage birds from building nests on man-made structures within portions of the project area planned for construction, and
- schedule construction activities outside the typical nesting season.

For more information regarding migratory bird protections, see **ENV's Guidance: Avoiding Migratory Birds and Handling Potential Violations** and Section 3.0 of **ENV's Ecological Resources Handbook**.

V. Resources Consulted

Indicate which resources were consulted/actions were taken to make the species analysis determinations recorded in this form (DO NOT ATTACH TO THIS FORM OR UPLOAD TO ECOS ANY RESOURCES CONSULTED – JUST CHECK THE APPROPRIATE BOX(ES)):

☒ Aerial Photography ☒ Topographic Map ☒ Natural Diversity Database (NDD)

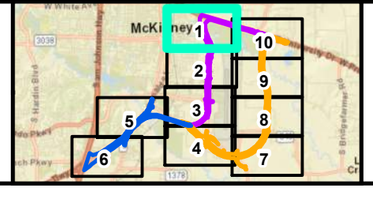
☐ Karst Zone Maps ☒ Ecological Mapping System of Texas (EMST)
☒ Site Visit ☒ Species Expert Consulted ☒ Species Habitat or Presence/absence Survey

☐ Other:_____

EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Native Invasive: Juniper Shrubland
- Native Invasive: Mesquite Shrubland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



NORTH

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Feet

TPWD EMST Classification
Spur 399 Extension EIS
Page 1 of 10

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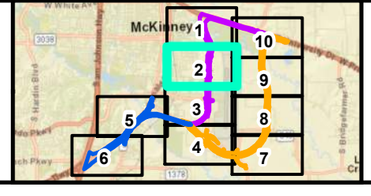
EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Native Invasive: Juniper Shrubland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

GOUGH ST
MILLER ST
NIELSON ST
BEVOE ST
ROAD ST
STANDIFER ST
KINCAIDE ST
EVELYN ST
WILSON ST
PALOMA DR
TENISON LN
JOYCE WAY
ENLOE RD
WALNUT ST
WOLFE ST
5
SHORT ST
FITZHUGH ST
IDA ST
MURRAY PL
KINGS ROW
BUMPAS ST
DANIELS DR
CHRISTIAN ST
WILCOX ST
MURRAY ST
MURRAY CT
COLORADO ST
MAPLES AVE
HEALY AVE
HAMILTON ST
ROCKWALL ST
LINDSEY ST
JEFFERSON ST
S AIRPORT DR
GERRISH ST
GRAHAM ST
RIKE ST
ELM ST
AMSCOTT ST
ANDERSON ST
FOWLER ST
PUCKETT ST
CLARK ST
MILLWOOD RD

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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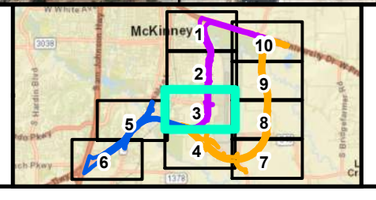
EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

FRANKLIN ST
LAVON DR
MILLWOOD RD
WESTMORELAND DR
546
INDUSTRIAL BLVD
S AIRPORT DR
ROBILYN DR
KATIE LOOP
DOROTHY DR
DUPREE DR
KEVIN DR
Couch Dr.
COUCH DR
OLD MILL RD
COUNTRY LN
McKinney National Airport

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Hardwood Forest
- Central Texas: Riparian Herbaceous Vegetation
- Edwards Plateau: Oak / Hardwood Motte and Woodland
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban Low Intensity

COUNTRY LN

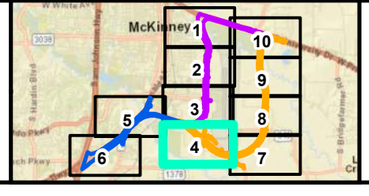
546

Old Mill Rd.

OLD MILL RD

FM 546

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
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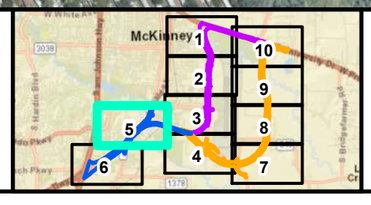
EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Central Texas: Floodplain Live Oak Forest
- Central Texas: Riparian Hardwood Forest
- Edwards Plateau: Oak / Hardwood Slope Forest
- Native Invasive: Deciduous Woodland
- Urban High Intensity
- Urban Low Intensity

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
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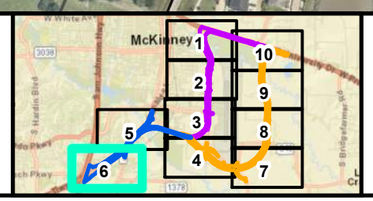
EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

COUNTRY CLUB DR
VALCOUR BAY
TICONDEROGA
COLLIN MCKINNEY PKWY
HOBKIRKS HILL
TEST DR
75
GATEWAY BLVD
399
MEDICAL CENTER DR
PLATEAU DR
COUNTRY VIEW LN
ENTERPRISE DR
RIVER HILLS CT
SEA BREEZE CT
TERRA VERDE LN
5
MCKINNEY RANCH PKWY
121
Addison Airport Toll Tunnel
FRISCO RD
GREEN APPLE LN
1378
STODDARD RD

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
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EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Hardwood Forest
- Edwards Plateau: Deciduous Oak / Evergreen Motte and Woodland
- Edwards Plateau: Oak / Hardwood Motte and Woodland
- Edwards Plateau: Savanna Grassland
- Native Invasive: Deciduous Woodland
- Native Invasive: Juniper Shrubland
- Row Crops
- Urban Low Intensity

FM 546

OLD MILL RD

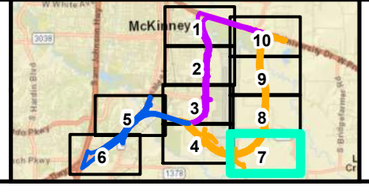
ORR

COUNTY ROAD 327

COUNTY ROAD 317

546

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
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EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban Low Intensity

ENLOE RD

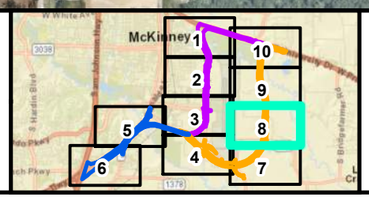
COUNTY ROAD 722

546

546

FM 546

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
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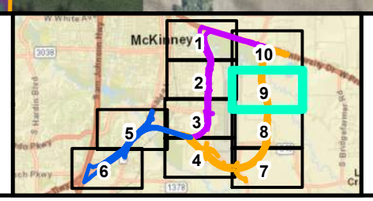
EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Row Crops

ENLOE RD

COUNTY ROAD 327

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
Spur 399 Extension EIS
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EMST Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Open Water
- Urban Low Intensity

380

1827

380

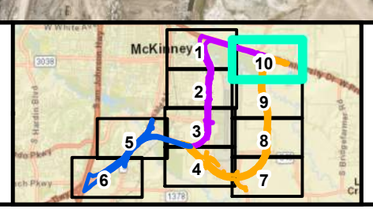
COUNTY ROAD 330

COUNTY ROAD 1084

380

ENLOE RD

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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TPWD EMST Classification
Spur 399 Extension EIS
Page 10 of 10

Issued: 7/18/2022

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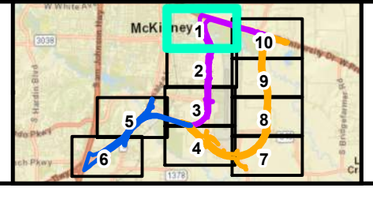
Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

MIDWAY ST
CENTER ST
DREXEL ST
THROCKMORTON PL
ODELL ST
CHARLESTON ST
PRIDE CT
BROAD ST
SMITH ST
ANNIE ST
RAILROAD ST
FENET ST
HOWARD ST
WATT ST
THROCKMORTON ST
SENECA BLVD
ROOSEVELT ST
WASHINGTON ST
CARVER ST
GARCIA ST
WALKER ST
LAMAR ST
MAIN ST
LIVELY HILL
BOLIN RD
LOGAN ST
MONTEREY ST
HUNT ST
HERNDON ST
VIRGINIA ST
MURRAY ST
LOUISIANA ST
JENNIE ST
CLOYD ST
DAVIS ST
WILCOX ST
DUNGAN ST
ANDREWS ST
GREENVILLE RD
KINCAIDE ST
EVELYN ST
WILSON ST
MILLER ST
NEILSON ST
GREEN ST
MOORE ST
WOLFE ST
GOUGH ST
ANTHONY ST
ENLOE RD
S AIRPORT DR
380
5

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



NORTH

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Feet

Field-Verified
Habitat Clasification
Spur 399 Extension EIS
Page 1 of 10

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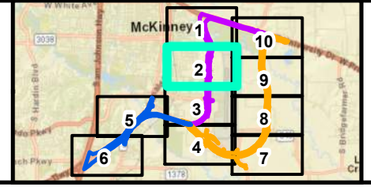
Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban Low Intensity

GOUGH ST
MILLER ST
NIELSON ST
BEVOE ST
RAILROAD ST
STANDIFER ST
KINCAIDE ST
EVELYN ST
WILSON ST
PALOMA DR
TENISON LN
JOYCE WAY
ENLOE RD
WALNUT ST
WOLFE ST
FITZHUGH ST
SHORT ST
IDA ST
KINGS ROW
MURRAY PL
BUMPAS ST
DANIELS DR
CHRISTIAN ST
WILCOX ST
MURRAY ST
MURRAY CT
COLORADO ST
MAPLES AVE
HEALY AVE
ROCKWALL ST
LINDSEY ST
HAMILTON ST
JEFFERSON ST
S AIRPORT DR
GERRISH ST
GRAHAM ST
RIKE ST
ELM ST
AMSCOTT ST
ANDERSON ST
FOWLER ST
PUCKET ST
CLARK ST
MILLWOOD RD
5

Common SPUR 399 PROW
Orange East SPUR 399 PROW
Purple West SPUR 399 PROW



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Habitat Clasification
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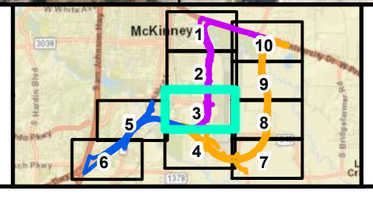
Field Verified Classification

- Barren
- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban High Intensity
- Urban Low Intensity

FRANKLIN ST
LAVON DR
MILLWOOD RD
WESTMORELAND DR
546
S AIRPORT DR
INDUSTRIAL BLVD
ROBILYN DR
KATIE LOOP
DOROTHY DR
DUPREE DR
KEVIN DR
Couch Dr.
COUCH DR
OLD MILL RD
COUNTRY LN
McKinney National Airport

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Habitat Clasification
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Page 3 of 10

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Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Open Water
- Urban High Intensity
- Urban Low Intensity

COUNTRY LN

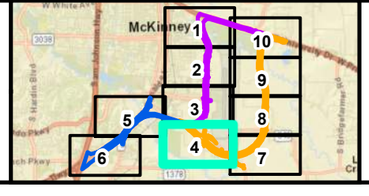
546

Old Mill Rd.

OLD MILL RD

FM 546

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Habitat Clasification
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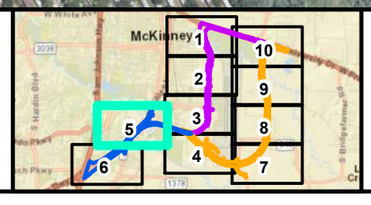
Field Verified Classification

- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Urban Low Intensity

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Habitat Clasification
Spur 399 Extension EIS
Page 5 of 10

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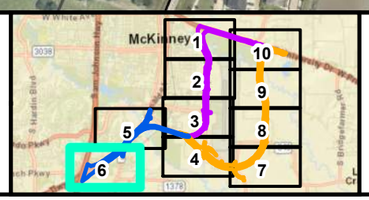
Field Verified Classification

- Native Invasive: Deciduous Woodland
- Urban Low Intensity

GERMANTOWN
COUNTRY CLUB DR
VALCOUR BAY
TICONDEROGA
HOBKIRKS HILL
COLLIN MCKINNEY PKWY
CRAIG DR
75
GATEWAY BLVD
399
MEDICAL CENTER DR
TEST DR
MCKINNEY RANCH PKWY
121
Addison Airport Toll Tunnel
FRISCO RD
PLATEAU DR
COUNTRY VIEW LN
ENTERPRISE DR
RIVER HILLS CT
SEA BREEZE CT
TERRA VERDE LN
GREEN APPLE LN
1378
STODDARD RD
5

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Habitat Clasification
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Page 6 of 10

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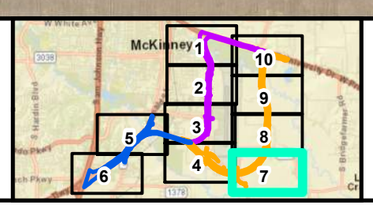
Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Riparian Hardwood Forest
- Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland
- Edwards Plateau: Oak - Hardwood Motte and Woodland
- Edwards Plateau: Savanna Grassland
- Native Invasive: Deciduous Woodland
- Open Water
- Row Crops
- Urban Low Intensity

FM 546
OLD MILL RD
ORR
COUNTY ROAD 327
COUNTY ROAD 317
546

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Habitat Clasification
Spur 399 Extension EIS
Page 7 of 10

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Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Riparian Hardwood Forest
- Native Invasive: Deciduous Woodland
- Row Crops
- Urban Low Intensity

ENLOE RD

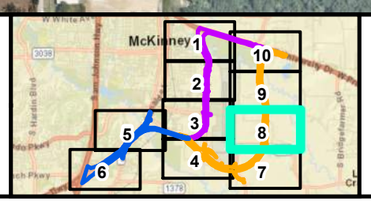
COUNTY ROAD 722

546

546

FM 546

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Habitat Clasification
Spur 399 Extension EIS
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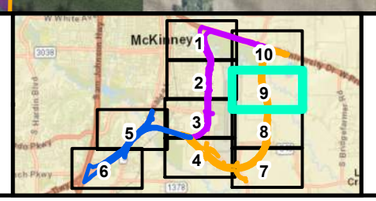
Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Row Crops

ENLOE RD

COUNTY ROAD 327

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



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Field-Verified
Habitat Clasification
Spur 399 Extension EIS
Page 9 of 10

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Field Verified Classification

- Blackland Prairie: Disturbance or Tame Grassland
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Native Invasive: Deciduous Woodland
- Open Water
- Row Crops
- Urban Low Intensity

380

1827

380

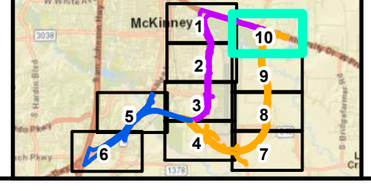
COUNTY ROAD 330

COUNTY ROAD 1084

380

ENLOE RD

- Common SPUR 399 PROW
- Orange East SPUR 399 PROW
- Purple West SPUR 399 PROW



NORTH

0 250 500

Feet

Field-Verified
Habitat Clasification
Spur 399 Extension EIS
Page 10 of 10

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0364-04-051 etc. SPUR 399 EXTENSION - EMST comparision

PURPLE ALTERNATIVE (WEST)

Veg_ID	EMST Common Name	PROW Update acres (Oct-2021)	Original acres (Jul-2021)
9000	Barren	1.04	0.94
207	Blackland Prairie: Disturbance or Tame Grassland	8.31	23.2
1804	Central Texas: Floodplain Hardwood Forest	7.86	11.32
1807	Central Texas: Floodplain Herbaceous Vegetation	5.75	7.26
1904	Central Texas: Riparian Hardwood Forest	1.53	1.31
1907	Central Texas: Riparian Herbaceous Vegetation	2.23	2.13
9104	Native Invasive: Deciduous Woodland	14.89	14.8
9307	Row Crops	41.15	40.05
9410	Urban High Intensity	9.76	36.42
9411	Urban Low Intensity	167.22	166.42
	TOTAL	259.74	303.86

ORANGE ALTERNATIVE (EAST)

Veg_ID	EMST Common Name	PROW Update acres (Oct-2021)	Original acres (Jul-2021)
207	Blackland Prairie: Disturbance or Tame Grassland	53.54	64.21
1103	Edwards Plateau: Deciduous Oak - Evergreen Motte and Woodland	0.58	0.58
1104	Edwards Plateau: Oak - Hardwood Motte and Woodland	5.90	5.64
1107	Edwards Plateau: Savanna Grassland	0.64	0.64
1804	Central Texas: Floodplain Hardwood Forest	10.56	9.51
1807	Central Texas: Floodplain Herbaceous Vegetation	13.82	13.78
1904	Central Texas: Riparian Hardwood Forest	7.43	5.32
9104	Native Invasive: Deciduous Woodland	41.97	40.77
9307	Row Crops	78.34	81.55
9410	Urban High Intensity	7.16	13.93
9411	Urban Low Intensity	144.93	158.87
9600	Open Water	1.53	1.22
	TOTAL	366.40	396.03

Photograph 1: View of project area at northeast corner of the intersection of Airport Dr. and US 380, showing conversion from Urban High Intensity (TPWD EMST) to Central Texas: Floodplain Hardwood Forest (observed/field-verified) vegetation type.

Photograph 2: View of project area at northeast corner of the intersection of Airport Dr. and US 380, showing conversion from Urban High Intensity (TPWD EMST) to Blackland Prairie: Disturbance or Tame Grassland (observed/field-verified) vegetation type.

Photograph 3: View of project area along Airport Dr., showing conversion from Row Crop (TPWD EMST) to Central Texas Riparian Herbaceous Vegetation (observed/field-verified) vegetation type.

Photograph 4: View of project area along Airport Dr., showing conversion from Row Crop (TPWD EMST) to Central Texas Riparian Herbaceous Vegetation (observed/field-verified) vegetation type.

Photograph 5: View of project area along Airport Dr., showing conversion from Row Crop (TPWD EMST) to Central Texas Riparian Herbaceous Vegetation (observed/field-verified) vegetation type.

Photograph 6: View of project area near intersection of Harry McKillop Blvd. (546) and South McDonald St. (Highway 5) showing conversion from Edwards Plateau: Oak-Hardwood Slope Forest (TPWD EMST) to Central Texas: Riparian Hardwood Forest (observed/field-verified) vegetation type.

Photograph 7: View of project area at southeast corner of the intersection of Airport Dr. and Industrial Dr., showing conversion from Row Crop (TPWD EMST) to Urban High Intensity (observed/field-verified) vegetation type.

Photograph 8: View of project area near intersection of Harry McKillop Blvd. and Airport Dr., showing conversion from Blackland Prairie: Disturbance or Tame Grassland (TPWD EMST) to Urban High Intensity (observed/field-verified) vegetation type.

Photograph 9: View of project area along Harry McKillop Blvd. near intersection with CR 722, showing conversion from Native Invasive: Deciduous Woodland (TPWD EMST) to Central Texas: Riparian Hardwood Forest (observed/field-verified) vegetation type.

Photograph 10: View of project area along CR 722, showing conversion from Native Invasive: Deciduous Woodland (TPWD EMST) to Blackland Prairie: Disturbance or Tame Grassland (observed/field-verified) vegetation type.

Photograph 11: View of project area along Airport Dr. near its intersection with Enloe Rd., showing conversion from Urban Low Intensity (TPWD EMST) to Central Texas Riparian Herbaceous Vegetation (observed/field-verified) vegetation type.

Photograph 12: View of project area near north end of the Orange Alternative, showing conversion from Central Texas: Floodplain Herbaceous (TPWD EMST) to Row Crop (observed/field-verified) vegetation type.

Photograph 13: View of project area along Airport Dr. showing conversion from Native Invasive: Juniper Shrubland (TPWD EMST) to Row Crop (observed/field-verified) vegetation type.

Appendix O-3: Form – Documentation of Texas Parks and Wildlife Department Best Management Practices

Form
Documentation of Texas Parks and Wildlife Department Best Management Practices

Project Name: **Spur 399 Extension**

CSJ(s): **0364-04-051, 0047-05-058, 0047-10-002**

County(ies): **Collin**

Date Form Completed: **9/29/2021**

Prepared by: **Leslie Mirise**

Information on state-listed species, SGCN, water resources, and other natural resources can be found in the ECOS documents tab under the filenames specified in the e-mail sent to WHAB_TXDOT@tpwd.texas.gov.

1. Does the project impact any state parks, wildlife management areas, wildlife refuges, or other designated protected areas?

   ☒ No

   ☐ Yes

2. Does TxDOT need TPWD assistance in identifying and locating Section 404 mitigation opportunities for this project?

   ☒ No / N/A / Not yet determined

   ☐ Yes

3. Is there a species or resource challenge that TPWD can assist with additional guidance? If so, describe below:

   There are no species or resource challenges known at this time.

4. Select all the best management practices (BMPs) that will be applied to the project:

   ☒ Freshwater Mussel BMP

   ☒ Water Quality BMP

   ☒ Stream Crossing BMP

   ☒ Bird BMP

☒ Species-specific BMPs for the following: alligator snapping turtle (*Macrochelys temminckii*), southern crawfish frog (*Lithobates areolatus areolatus*), Strecker's chorus frog (*Pseudacris streckeri*), Woodhouse's toad (*Anaxyrus woodhousii*), eastern box turtle (*Terrapene carolina*), slender glass lizard (*Ophisaurus attenuatus*), Texas garter snake (*Thamnophis sirtalis annectens*), timber (canebrake) rattlesnake (*Crotalus horridus*), western box turtle (*Terrapene ornata*)

☒ Aquatic Amphibian and Reptile BMP

☒ Terrestrial Amphibian and Reptile BMP

☒ Vegetation BMP

☒ Aquatic Invertebrate BMP

☒ Bat BMP

☒ General Design and Construction BMP

Exact locations of some of these BMPs are still yet to be determined depending how the planning process develops and which alternative is chosen.

5. Select any species protection specifications that will be applied to the project.

☐ Amphibian and Reptile Exclusion Fence

☐ Bat Houses

☐ Bat Exclusion System

☐ Other

6. Select and/or explain where the above-listed BMPs will be documented and communicated to the contractor (e.g., plan sheets, general notes, EPIC sheet, etc.):

☒ Environmental Document (EA or EIS) – Required

☒ ECOS Non-ESA Commitments Activity – Required for surveys and other pre-construction actions

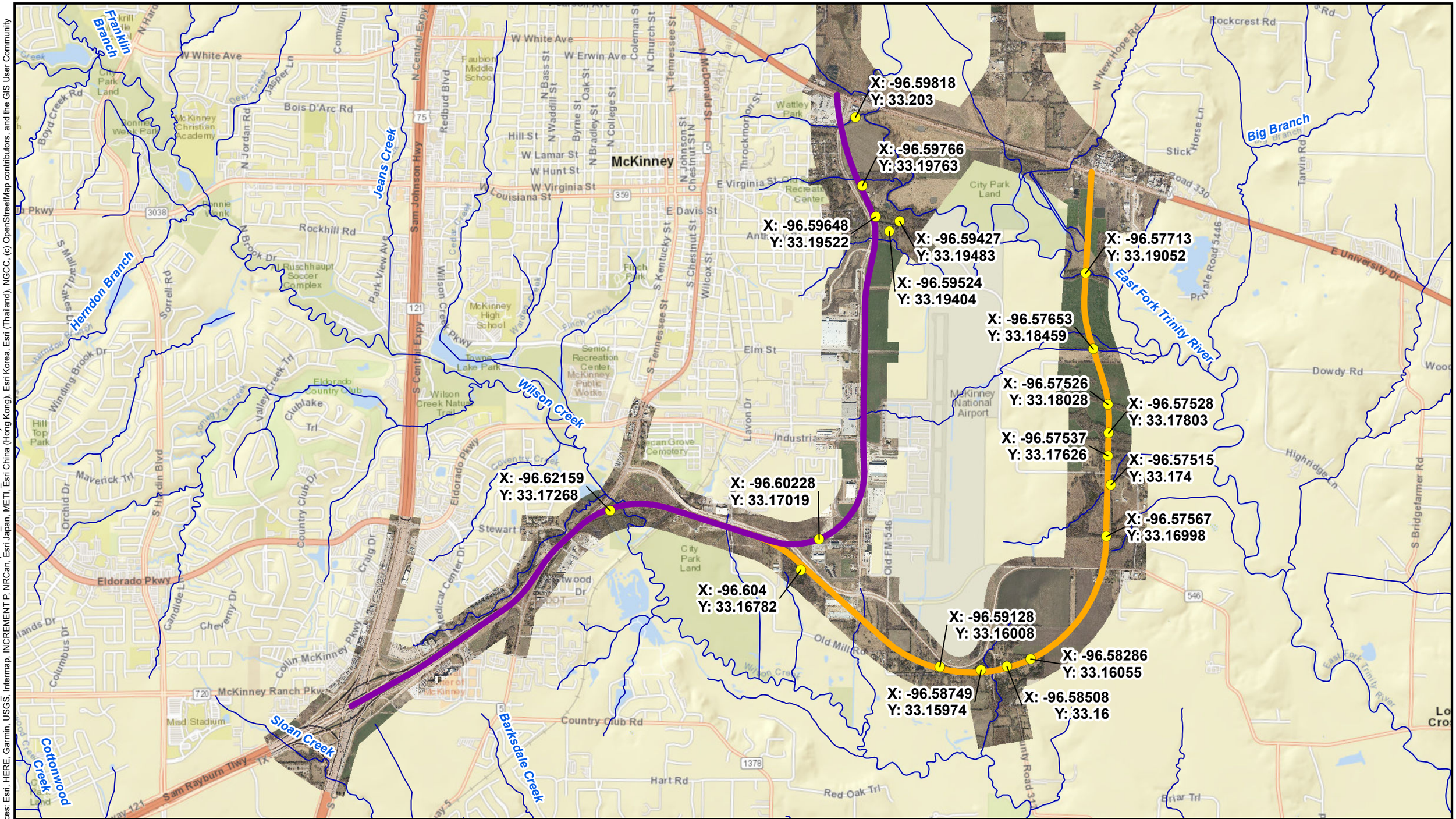
☒ Plan Sheets/ EPIC Sheet

☐ General notes

☐ Other

Applicable BMPs would be specified in the project EIS and EPIC sheet. The Freshwater Mussel BMPs and Bat BMPs would be performed at suitable habitat locations. Those possible locations for the project alternatives would be included in the EIS. Specific survey areas based on the selected alternative would be noted in the ECOS Non-ESA Commitments Activity and the EPIC sheet. Reports documenting survey results would be uploaded to ECOS upon completion.

Appendix O-4: Woodland and Stream Crossing Maps



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Source: ESRI, Burns & McDonnell Engineering Company, Inc.

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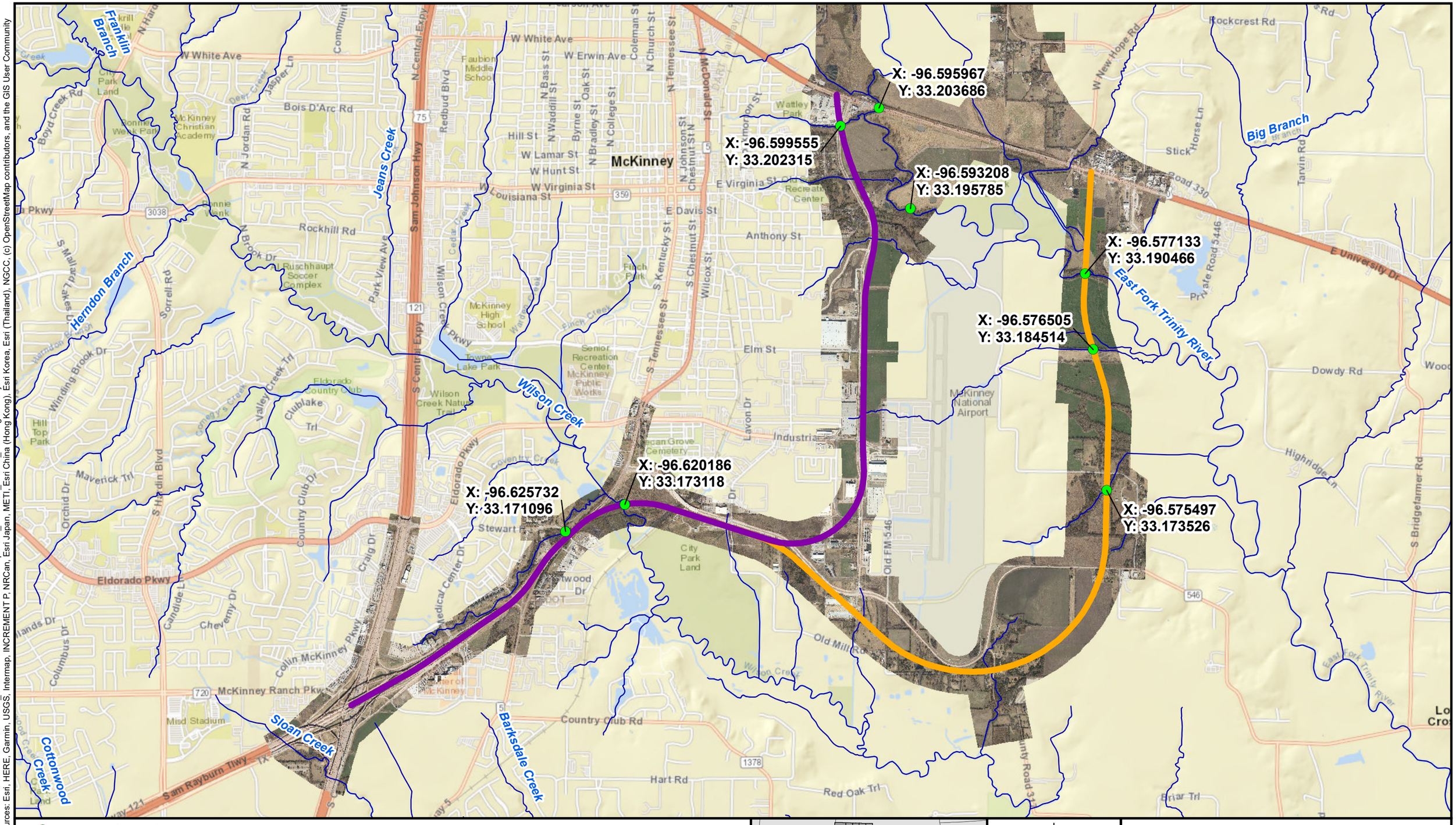

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Source: ESRI, Burns & McDonnell Engineering Company, Inc.

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Appendix O-5: Information for Planning and Consultation (IPaC) and Rare, Threatened, and Endangered Species of Texas (RTEST)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
2005 Ne Green Oaks Blvd
Suite 140
Arlington, TX 76006-6247
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To:
Project Code: 2022-0060449
Project Name: Spur 399

July 05, 2022

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, which may occur within the boundary of 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.).

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 section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

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 Federal actions 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.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects to listed species or critical habitat are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a consequence of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service has performed up-front analysis for certain project types and species in your project area. These analyses have been compiled into *determination keys*, which allows an action agency, or its designated non-federal representative, to initiate a streamlined process for determining a proposed project's potential effects on federally listed species. The determination keys can be accessed through IPaC.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at: https://www.fws.gov/service/section-7-consultations

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.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (https://www.fws.gov/library/collections/bald-and-golden-eagle-management). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/media/land-based-wind-energy-guidelines) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation. For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

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 Tracking Number 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
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

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:

Arlington Ecological Services Field Office
2005 Ne Green Oaks Blvd
Suite 140
Arlington, TX 76006-6247
(817) 277-1100

Project Summary

Project Code: 2022-0060449
Event Code: None
Project Name: Spur 399
Project Type: New Constr - Above Ground
Project Description: New road project
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.1802156,-96.57526144580596,14z

Counties: Collin County, Texas

Endangered Species Act Species

There is a total of 5 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 2 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.

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Clams

NAME	STATUS
Texas Fawnsfoot *Truncilla macrodon* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8965	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Henslow's Sparrow *Ammodramus henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds elsewhere

NAME	BREEDING SEASON
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability Of Presence Summary

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

Probability of Presence (■)

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

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

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

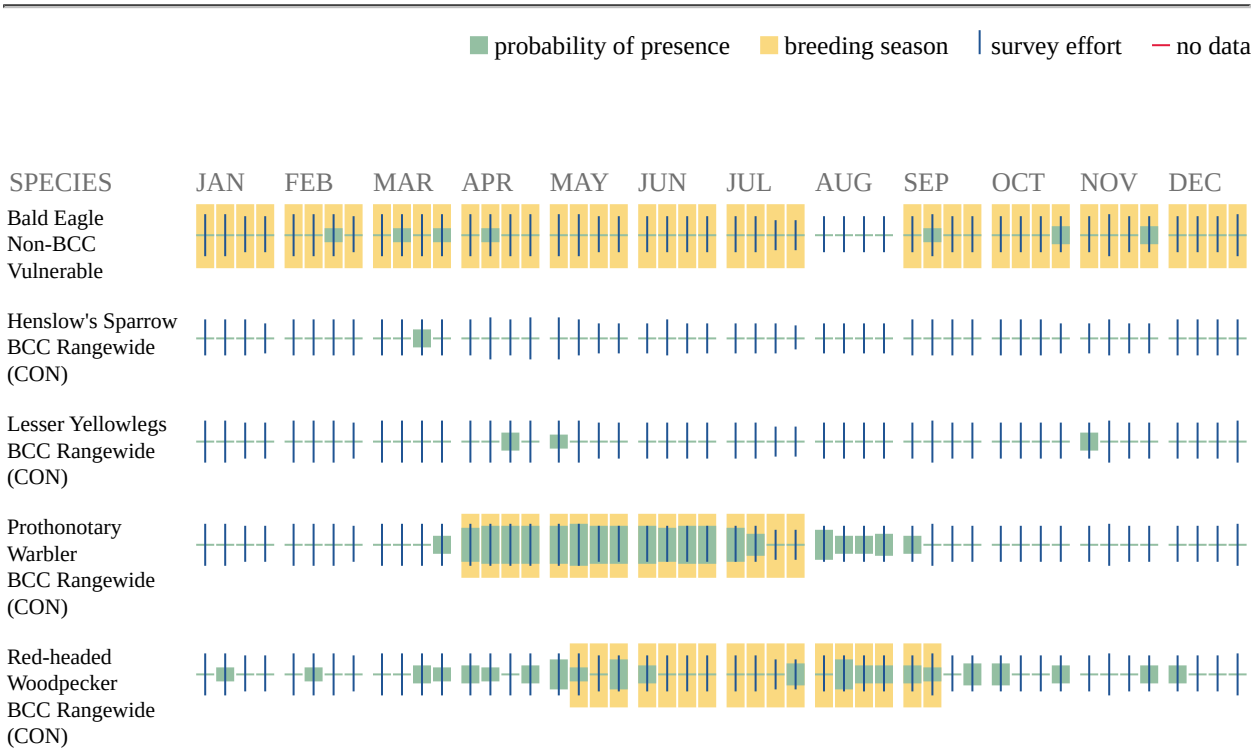
Breeding Season (■)

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

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

No Data (–)
A week is marked as having no data if there were no survey events for that week.

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



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

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 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.

Wetlands

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.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

Agency: Texas Department of Transportation
Name: Derek Green
Address: 8911 Capital of Texas Highway, Building 3, Suite 3100
City: Austin
State: TX
Zip: 78759
Email djgreen@burnsmcd.com
Phone: 7372360111

Last Update: 3/17/2022

COLLIN COUNTY

AMPHIBIANS

southern crawfish frog *Lithobates areolatus areolatus*

Terrestrial and aquatic: The terrestial habitat is primarily grassland and can vary from pasture to intact prairie; it can also include small prairies in the middle of large forested areas. Aquatic habitat is any body of water but preferred habitat is ephemeral wetlands.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S3

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

BIRDS

bald eagle *Haliaeetus leucocephalus*

Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B,S3N

black rail *Laterallus jamaicensis*

Salt, brackish, and freshwater marshes, pond borders, wet meadows, and grassy swamps; nests in or along edge of marsh, sometimes on damp ground, but usually on mat of previous years dead grasses; nest usually hidden in marsh grass or at base of Salicornia

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

chestnut-collared longspur *Calcarius ornatus*

Occurs in open shortgrass settings especially in patches with some bare ground. Also occurs in grain sorghum fields and Conservation Reserve Program lands

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

COLLIN COUNTY

BIRDS

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2N

interior least tern *Sternula antillarum athalassos*

Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Federal Status: DL: Delisted	State Status:	SGCN: Removed from Y
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

piping plover *Charadrius melodus*

Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

rufa red knot *Calidris canutus rufa*

Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore. Bolivar Flats in Galveston County, sandy beaches Mustang Island, few on outer coastal and barrier beaches, tidal mudflats and salt marshes

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4T2	State Rank: S2N

western burrowing owl *Athene cunicularia hypugaea*

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

COLLIN COUNTY

BIRDS

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1S2N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

CRUSTACEANS

No accepted common name *Caecidotea bilineata*

Spring obligate. Caecidotea bilineata is known only from non-cave groundwater habitats in deposits of Cretaceous age. It is presumably a phreatobite. Fine scale habitat requirements unknown.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S1

Parkhill Prairie crayfish *Procambarus steigmani*

Burrower in long-grass prairie; all animals were collected with traps, thus there is no knowledge of depths of burrows; herbivore; crepuscular, nocturnal

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

INSECTS

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

COLLIN COUNTY

MAMMALS

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

eastern red bat *Lasiurus borealis*

Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of "wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East, Central, and North Texas but can occur statewide.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

hoary bat *Lasiurus cinereus*

Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S4

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

COLLIN COUNTY

MAMMALS

muskrat *Ondatra zibethicus*

Found in fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. Most abundant in areas with cattail. Dens in bank burrow or conical house of vegetation in shallow vegetated water. It is primarily found in the Rio Grande near El Paso and in SE Texas in the Houston area.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

tricolored bat *Perimyotis subflavus*

Forest, woodland and riparian areas are important. Caves are very important to this species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S2

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

MOLLUSKS

Louisiana pigtoe *Pleurobema riddellii*

Occurs in small streams to large rivers in slow to moderate currents in substrates of clay, mud, sand, and gravel. Not known from impoundments (Howells 2010f; Randklev et al. 2013b; Troia et al. 2015). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G2	State Rank: S1

Texas heelsplitter *Potamilus amphichaenus*

Occurs in small streams to large rivers in standing to slow-flowing water; most common in banks, backwaters and quiet pools; adapts to some reservoirs. Often found in soft substrates such as mud, silt or sand (Howells et al. 1996; Randklev et al. 2017a). [Mussels of Texas 2019]

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G1G3	State Rank: S1

REPTILES

alligator snapping turtle *Macrochelys temminckii*

Aquatic: Perennial water bodies; rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near running water; sometimes enters brackish coastal waters. Females emerge to lay eggs close to the waters edge.

COLLIN COUNTY

REPTILES

Federal Status: | State Status: T | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S2

common garter snake *Thamnophis sirtalis*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status: | State Status: | SGCN: N
Endemic: | Global Rank: G5 | State Rank: S2

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S3

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S3

Texas garter snake *Thamnophis sirtalis annectens*

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.

Federal Status: | State Status: | SGCN: Y
Endemic: Y | Global Rank: G5T4 | State Rank: S1

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status: | State Status: T | SGCN: Y
Endemic: N | Global Rank: G4G5 | State Rank: S3

timber (canebrake) rattlesnake *Crotalus horridus*

Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G4 | State Rank: S4

COLLIN COUNTY

REPTILES

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

PLANTS

Engelmann's bladderpod *Physaria engelmannii*

Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

glandular gay-feather *Liatris glandulosa*

Occurs in herbaceous vegetation on limestone outcrops (Carr 2015)

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S2

red yucca *Hesperaloe parviflora*

Shrublands on dry limestone slopes; Perennial; Flowering April-May; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Sutherland hawthorn *Crataegus viridis var. glabriuscula*

In mesic soils of woods or on edge of woods, treeline/fenceline, or thicket. Above\near creeks and draws, in river bottoms. Flowering Mar-Apr; fruiting May-Oct.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5T3T4	State Rank: S3