Table 3-6: Reptile and Amphibian Species with Potential to Inhabit the Study Area

Common Name	Scientific Name	Habitat Preference(s)
Alligator snapping turtle	*Macrochelys temminckii*	Water
American alligator	*Alligator mississippiensis*	Water
American bullfrog	*Lithobates catesbeianus*	Water
Anoles	*Anolis spp.*	Woodlands; Shrublands; Wetlands; Urban areas
Blanchard's cricket frog	*Acris blanchardi*	Wetlands; Water
Broad-headed skink	*Plestiodon laticeps*	Woodlands
Coachwhip	*Masticophis flagellum*	Open areas
Common garter snake	*Thamnophis sirtalis*	Woodlands; Shrublands; Wetlands; Urban areas
Common kingsnake	*Lampropeltis getula*	Grasslands; Open areas
Cottonmouth	*Agkistrodon piscivorus*	Wetlands; Water
Crayfish snake	*Liodytes rigida*	Wetlands; Water
Dekay's brown snake	*Storeria dekayi*	Woodlands; Shrublands; Grasslands; Urban areas
Diamondback water snake	*Nerodia rhombifer*	Wetlands; Water
Dusky salamander	*Desmognathus fuscus*	Woodlands; Wetlands
Eastern box turtle	*Terrapene carolina*	Grasslands; Woodlands; Wetlands
Eastern copperhead	*Agkistrodon contortrix*	Woodlands
Eastern coral snake	*Micrurus fulvius*	Woodlands; Open areas
Eastern fence lizard	*Sceloporus undulatus*	Woodlands; Shrublands; Grasslands; Urban areas
Eastern glass lizard	*Ophisaurus ventralis*	Wetlands
Eastern narrowmouth toad	*Gastrophryne carolinensis*	Woodlands; Wetlands
Eastern newt	*Notophthalmus viridescens*	Woodlands
Eastern racer	*Coluber constrictor*	Grasslands; Open areas
Eastern ribbon snake	*Thamnophis saurita*	Wetlands
Eastern spadefoot	*Scaphiopus holbrookii*	Woodlands; Shrublands

Table 3-6: Reptile and Amphibian Species with Potential to Inhabit the Study Area (continued)

Common Name	Scientific Name	Habitat Preference(s)
Gray tree frog	*Hyla versicolor*	Woodlands
Green frog	*Lithobates clamitans*	Wetlands; Water
Green tree frog	*Hyla cinerea*	Woodlands; Wetlands; Water
Gulf Coast toad	*Incilius valliceps*	Grasslands; Urban areas
Gulf Coast waterdog	*Necturus beyeri*	Wetlands; Water
Houston toad	*Bufo houstonensis*	Woodlands; Wetlands; Water
Lesser siren	*Siren intermedia*	Wetlands; Water
Little brown skink	*Scincella lateralis*	Woodlands
Long-tailed salamander	*Eurycea longicauda*	Caves; Woodlands; Wetlands
Marbled salamander	*Ambystoma opacum*	Woodlands; Wetlands
Mississippi map turtle	*Graptemys pseudogeographica kohnii*	Water
Mole salamander	*Ambystoma talpoideum*	Woodlands; Wetlands
Northern leopard frog	*Rana pipiens*	Wetlands; Water
Northern water snake	*Nerodia sipedon*	Wetlands; Water
Pickerel frog	*Lithobates palustris*	Caves; Wetlands; Water
Pig frog	*Lithobates grylio*	Wetlands; Water
Pine woods tree frog	*Hyla femoralis*	Woodlands; Wetlands
Plain-bellied water snake	*Nerodia erythrogaster*	Wetlands; Water
Prairie skink	*Plestiodon septentrionalis*	Grasslands; Woodlands
Pygmy rattlesnake	*Sistrurus miliarius*	Woodlands; Wetlands
Red-eared Slider	*Trachemys scripta elegans*	Water
River cooter	*Pseudemys concinna*	Water
Rough green snake	*Opheodrys aestivus*	Woodlands; Wetlands
Six-lined Racerunner	*Cnemidophorus sexlineatus*	Woodlands; Grasslands; Open areas

Table 3-6: Reptile and Amphibian Species with Potential to Inhabit the Study Area (continued)

Common Name	Scientific Name	Habitat Preference(s)
Slender glass lizard	*Ophisaurus attenuatus*	Grasslands; Woodlands
Small-mouthed salamander	*Ambystoma texanum*	Woodlands; Wetlands
Southeastern dwarf salamander	*Eurycea quadridigitata*	Woodlands; Wetlands
Southern chorus frog	*Pseudacris nigrita*	Woodlands; Shrublands; Grasslands; Wetlands
Southern crawfish frog	*Lithobates areolatus areolatus*	Grasslands; Open areas
Southern cricket frog	*Acris gryllus*	Wetlands
Speckled kingsnake	*Lampropeltis holbrooki*	Grasslands
Spring peeper	*Pseudacris crucifer*	Woodlands; Wetlands; Water
Spotted dusky salamander	*Desmognathus conanti*	Woodlands; Wetlands; Water
Squirrel tree frog	*Hyla squirella*	Wetlands; Water; Urban areas
Strecker's chorus frog	*Pseudacris streckeri*	Grasslands; Wetlands; Water
Texas horned lizard	*Phrynosoma cornutum*	Open Areas; Shrublands; Grasslands; Desert
Three-toed box turtle	*Terrapene triunguis*	Woodlands; Wetlands
Timber rattlesnake	*Crotalus horridus*	Woodlands; Open areas
Two-toed amphiuma	*Amphiuma means*	Wetlands; Water
Western box turtle	*Terrapene ornata*	Open areas
Western chicken turtle	*Deirochelys reticularia miaria*	Water
Western rat snake	*Pantherophis obsoletus*	Woodlands
Western waterdog	*Necturus beyeri*	Water
Woodhouse's toad	*Bufo woodhousii*	Desert; Open areas; Water
Worm snake	*Carphophis amoenus*	Woodlands; Shrubland
Yellow-spotted salamander	*Ambystoma maculatum*	Woodlands; Wetlands

Source: Blair (1950); iNaturalist (2024); TPWD (2024h).

Table 3-7: Mammalian Species with Potential to Inhabit the Study Area

Common Name	Scientific Name	Habitat Preference(s)
American beaver	*Castor canadensis*	Water
Baird's pocket gopher	*Geomys breviceps*	Open areas; Shrubland
Bobcat	*Lynx rufus*	Desert; Woodlands
Chital	*Axis axis*	Woodlands; Grasslands
Cotton mouse	*Peromyscus gossypinus*	Open areas; Woodlands; Wetlands
Coyote	*Canis latrans*	Urban areas; Woodlands; Open areas
Eastern cottontail	*Slyvilagus floridanus*	Open areas; Urban areas; Woodlands
Eastern harvest mouse	*Reithrodontomys humulis*	Open areas; Shrubland
Eastern mole	*Scalopus aquaticus*	Woodlands; Urban areas
Eastern red bat	*Lasiurus borealis*	Open areas
Eastern spotted skunk	*Spilogale putorius*	Woodlands; Grasslands
Eastern woodrat	*Neotoma floridana*	Woodlands
Florida yellow bat	*Dasypterus floridanus*	Woodlands
Fulvous harvest mouse	*Reithrodontomys fulvescens*	Open areas; Shrubland
Golden mouse	*Ochrotomys nuttalli*	Open areas; Woodlands; Shrublands
Hispid cotton rat	*Sigmodon hispidus*	Grasslands; Desert
Hoary bat	*Lasiurus cinereus*	Woodlands
Javelina	*Tayassuidae spp.*	Desert; Woodlands
Louisiana vole	*Microtus ochrogaster ludovicianus*	Open areas; Woodlands
Marsh rice rat	*Oryzomys palustris*	Wetlands
Mountain lion	*Puma concolor*	Woodlands; Grasslands; Wetlands; Desert
Nine-banded armadillo	*Dasypus novemcinctus*	Open areas; Urban areas; Woodlands
Northern pygmy mouse	*Baiomys taylori*	Grasslands; Urban areas
Plains spotted skunk	*Spilogale interrupta*	Woodlands; Grasslands

Table 3-7: Mammalian Species with Potential to Inhabit the Study Area (continued)

Common Name	Scientific Name	Habitat Preference(s)
Rabbit and hare	*Sylvilagus spp., Lepus spp.*	Grasslands; Open areas; Urban areas
Raccoon	*Procyon lotor*	Open areas; Urban areas; Woodlands
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	Woodlands; Urban areas
Seminole bat	*Lasiurus seminolus*	Woodlands; Wetlands
Southeastern myotis bat	*Myotis austroriparius*	Woodlands; Wetlands
Southern flying squirrel	*Glaucomys volans*	Woodlands
Squirrel	*Sciurus spp.*	Open areas; Urban areas; Woodlands
Striped skunk	*Mephitis mephitis*	Open areas; Woodlands
Swamp rabbit	*Sylvilagus aquaticus*	Wetlands
Tricolored bat	*Perimyotis subflavus*	Open areas; Woodlands
Virginia opossum	*Didelphis virginiana*	Open areas; Urban areas; Woodlands; Wetlands
White-footed mouse	*Peromyscus leucopus*	Woodlands; Shrublands
White-tailed deer	*Odocoileus virginianus*	Open areas; Urban areas; Woodlands

Source: Blair (1950); iNaturalist (2024); TPWD (2024h).

Table 3-8: Avian Species with Potential to Inhabit the Study Area

Common Name	Scientific Name	Habitat Preference(s)
American coot	*Fulica americana*	Water
American golden plover	*Pluvialis dominica*	Water
American kestrel	*Falco sparverius*	Urban areas; Shrubland; Open areas; Woodlands
American robin	*Turdus migratorius*	Woodlands; Grasslands; Urban areas
American woodcock	*Scolopax minor*	Woodlands
Bachman's sparrow	*Peucaea aestivalis*	Woodlands; Grasslands
Bald eagle	*Haliaeetus leucocephalus*	Open areas; Woodlands
Bank swallow	*Riparia riparia*	Water
Black vulture	*Coragyps atratus*	Woodlands; Open areas
Blue jay	*Cyanocitta cristata*	Woodlands; Open areas; Urban areas
Brewer's blackbird	*Euphagus cyanocephalus*	Open areas; Urban areas; Water
Carolina chickadee	*Poecile carolinensis*	Woodlands
Carolina wren	*Thryothorus ludovicianus*	Woodlands; Urban areas
Chestnut-collared longspur	Calcarius ornatus	Grasslands
Chipping sparrow	*Spizella passerina*	Woodlands; Open areas
Common grackle	*Quiscalus quiscula*	Open areas; Urban areas
Common nighthawk	*Chordeiles minor*	Woodlands; Grasslands; Open areas
Duck (including teal)	*Dendrocygna spp., Cygnus spp., Cairina moschata, Aix sponsa, Spatula spp., Mareca spp., Anas spp., Aythya spp.*	Water
Eastern phoebe	*Sayornis phoebe*	Woodlands; Urban areas
Eastern towhee	*Pipilo erythrophthalmus*	Shrublands; Grasslands
Franklin's gull	*Leucophaeus pipixcan*	Wetlands; Water
Golden eagle	*Aquila chrysaetos*	Desert; Shrubland; Open areas; Woodlands

Table 3-8: Avian Species with Potential to Inhabit the Study Area (continued)

Common Name	Scientific Name	Habitat Preference(s)
Goose	*Anser spp., Branta spp.*	Water
Great blue heron	*Ardea herodias*	Wetlands; Water
Great egret	*Ardea alba*	Wetlands; Water
Green heron	*Butorides virescens*	Wetlands; Water
Henslow's sparrow	*Centronyx henslowii*	Grasslands
House finch	*Haemorhous mexicanus*	Urban areas
House sparrow	*Passer domesticus*	Urban areas
Interior least tern	*Sterna antillarum athalassos*	Water
Killdeer	*Charadrius vociferus*	Grasslands; Open areas
Lesser yellowlegs	*Tringa flavipes*	Water
Loggerhead shrike	*Lanius ludovicianus*	Open areas; Urban areas
Mottled duck	*Anas fulvigula*	Water; Wetlands
Mourning dove	*Zenaida macroura*	Urban areas; Open areas; Woodlands
Northern bobwhite	*Colinus virginianus*	Grasslands; Woodlands; Open areas
Northern cardinal	*Cardinalis cardinalis*	Woodlands; Shrublands; Wetlands
Northern mockingbird	*Mimus polyglottos*	Woodlands; Open areas; Urban areas
Pied-billed grebe	*Podilymbus podiceps*	Wetlands; Water
Pine warbler	*Setophaga pinus*	Woodlands
Piping plover	*Charadrius melodus*	Water
Quail	*Colinus virginianus, Callipepla spp., Cyrtonix montezumae*	Desert; Shrubland
Northern mockingbird	*Mimus polyglottos*	Woodlands; Open areas; Urban areas
Pied-billed grebe	*Podilymbus podiceps*	Wetlands; Water
Pine warbler	*Setophaga pinus*	Woodlands

Table 3-8: Avian Species with Potential to Inhabit the Study Area (continued)

Common Name	Scientific Name	Habitat Preference(s)
Piping plover	*Charadrius melodus*	Water
Quail	*Colinus virginianus, Callipepla spp., Cyrtonix montezumae*	Desert; Shrubland
Rail, gallinule, and moorhen	*Rallus spp., Gallinula spp., Coturnicops novaboracensis, Laterallus jamaicensis*	Open areas; Water
Red-cockaded woodpecker	*Dryobates borealis*	Woodlands
Red-shouldered hawk	*Buteo lineatus*	Woodlands; Wetlands
Red-tailed hawk	*Buteo jamaicensis*	Urban areas; Shrubland; Open areas; Woodlands
Red-winged blackbird	*Agelaius phoeniceus*	Grasslands; Wetlands; Urban areas
Ruby-throated hummingbird	*Archilochus colubris*	Woodlands; Grasslands; Urban areas
Rufa red knot	*Calidris canutus rufa*	Water
Sanderling	*Calidris alba*	Water
Scissor-tailed flycatcher	*Tyrannus forficatus*	Grasslands; Shrublands
Snowy plover	*Charadrius nivosus*	Open areas; Water
Sprague's pipit	*Anthus spragueii*	Grasslands
Summer tanager	*Piranga rubra*	Woodlands; Open areas
Swainson's hawk	*Buteo swainsoni*	Open areas; Shrubland
Swallow-tailed kite	*Elanoides forficatus*	Woodlands; Open areas
Tufted titmouse	*Baeolophus bicolor*	Woodlands
Turkey vulture	*Cathartes aura*	Woodlands; Open areas
Western burrowing owl	*Athene cunicularia hypugaea*	Grasslands; Open areas; Urban areas
Western cattle-egret	*Ardea ibis*	Wetlands; Water
White-faced ibis	*Plegadis chihi*	Water
White-winged dove	*Zenaida asiatica*	Grasslands; Open areas

Table 3-8: Avian Species with Potential to Inhabit the Study Area (continued)

Common Name	Scientific Name	Habitat Preference(s)
Willet	*Tringa semipalmata*	Water
Wilson's snipe	*Gallinago delicata*	Water
Wilson's warbler	*Cardellina pusilla*	Shrublands; Woodlands
Wood stork	*Mycteria americana*	Wetlands; Water
Yellow rail	*Coturnicops noveboracensis*	Wetlands
Yellow-rumped warbler	*Setophaga coronata*	Woodlands

Source: Blair (1950); eBird (2024); iNaturalist (2024); TPWD (2024h).

The study area primarily consists of privately owned pastureland and rural residential homes. Recreational fishing may occur along the Trinity River. Recreationally sought fish species expected to be found in the study area include bluegill (*Lepomis macrochirus*), sunfish (*Lepomis spp.*), and channel catfish (*Ictalurus punctatus*). Other game species that may occur in the study area are listed in **Table 3-9**.

3.5.2.3 Commercially or Recreationally Important Fish and Wildlife Species

As stated in **Section 3.5.1.3**, a species is considered commercially important if the species:

- (a) is commercially or recreationally valuable;
- (b) is endangered or threatened;
- (c) affects the well-being of some important species within criterion (a) or (b); and
- (d) is critical to the structure and function of the ecological system or is a biological indicator.

The TPWD divides the counties of Texas into ecological areas for wildlife management, with Leon and Houston Counties falling into the Post Oak Savanna Wildlife District (Wildlife Division District 5) and Pineywoods Wildlife District (Wildlife Division District 6) (TPWD, 2024e). Wildlife Division District 5 encompasses a total of 31 counties. Wildlife Division District 6 encompasses a total of 27 counties.

Wildlife resources within the study area provide recreational benefits as a result of both non-consumptive (e.g., birdwatching) and consumptive (e.g., hunting) uses. According to the TPWD (2024i), more than one million people engage in recreational hunting within the State of Texas each year. Hunting generates billions of dollars each year via revenue gained through hunting fees, through private leases, and travel-related spending (Texas A&M University, 2023).

Table 3-9 lists the species for which an established hunting season exists for Leon and Houston Counties (TPWD, 2024d). Commercially important fish or wildlife species are likely to occur in the study area; however, the proposed transmission line project is not expected to permanently affect the occurrence of the species within the study area.

Table 3-9: Game Species with Potential for Occurrence within the Study Area

Common Name	Scientific Name	Habitat Preference(s)
American alligator	*Alligator mississippiensis*	Water
American woodcock	*Scolopax minor*	Woodlands
Duck (including teal)	*Dendrocygna spp., Cygnus spp., Cairina moschata, Aix sponsa, Spatula spp., Mareca spp., Anas spp., Aythya spp.*	Water
Goose	*Anser spp., Branta spp.*	Water
Javelina	*Tayassuidae spp.*	Desert; Woodlands
Mourning dove	*Zenaida macroura*	Grasslands; Open areas; Urban areas
Quail	*Colinus virginianus, Callipepla spp., Cyrtonix montezumae*	Desert; Shrubland
Rabbit and hare	*Sylvilagus spp., Lepus spp.*	Grasslands; Open areas; Urban areas
Rail, gallinule, and moorhen	*Rallus spp., Gallinula spp., Coturnicops novaboracensis, Laterallus jamaicensis*	Water
Squirrel	*Sciurus spp.*	Open areas; Urban areas; Woodlands
White-tailed deer	*Odocoileus virginianus*	Open areas; Urban areas; Woodlands
White-winged dove	*Zenaida asiatica*	Grasslands; Open areas; Urban areas
Wilson's snipe	*Gallinago delicata*	Water

Source: TPWD (2024d); USFWS (2014).

3.5.2.4 Endangered, Threatened, and Rare Fish and Wildlife Species

Table 3-10 lists those fish and wildlife species considered by the USFWS to be endangered, threatened, or candidate species within a geographic range that includes Leon and Houston County (USFWS, 2024a; USFWS, 2024b). Three birds, one amphibian, and one clam species are federally listed: piping plover (*Charadrius melodus*, Threatened), red-cockaded woodpecker (*Dryobates borealis*, Threatened), Rufa red knot (*Calidris canutus rufa*, Threatened), Houston

Table 3-10: Federally and State Listed Endangered, Threatened, and Candidate Fish and Wildlife Species with Potential for Occurrence within the Study Area

Common Name	Scientific Name	Listing Status [1, 2]		Potential to Occur within Study Area
		Federal	State	
Alligator snapping turtle	*Macrochelys temminckii*	Proposed T	T	Yes
Bachman's sparrow	*Peucaea aestivalis*	None	T	No
Bald eagle	*Haliaeetus leucocephalus*	D	SGCN	Yes
Houston toad	*Bufo houstonensis*	E	E	No
Interior least tern	*Sterna antillarum athalassos*	D	E	Yes
Monarch butterfly	*Danaus plexippus*	C	None	Yes
Paddlefish	*Polyodon spathula*	None	T	No
Piping plover	*Charadrius melodus*	T	T	No
Rafinesque's big-eared bat	*Corynorhinus rafinesquii*	None	T	No
Red-cockaded woodpecker	*Dryobates borealis*	T	E	No
Rufa red knot	*Calidris canutus rufa*	T	T	No
Sandbank pocketbook	*Lampsilis satura*	None	T	No
Southern hickorynut	*Obovaria arkansasensis*	None	T	No
Swallow-tailed kite	*Elanoides forficatus*	None	T	No
Texas fawnsfoot	*Truncilla macrodon*	T	T	Yes
Texas heelsplitter	*Potamilus amphichaenus*	Proposed E	T	Yes
Texas horned lizard	*Phrynosoma cornutum*	None	T	No
Texas pigtoe	*Fusconaia askewi*	None	T	Yes
Tricolored bat	*Perimyotis subflavus*	Proposed E	T	Yes
Trinity pigtoe	*Fusconaia chunii*	None	T	No
White-faced ibis	*Plegadis chihi*	None	T	Yes
Wood stork	*Mycteria americana*	None	T	No

Source: TPWD (2024f); TPWD (2024h); USFWS (2024a); USFWS (2024b).

[1] USFWS listing codes: C = Candidate; D = Delisted; E = Endangered; T = Threatened; None = No federal status

[2] TPWD listing codes: E = Endangered; SGCN = Species of Greatest Conservation Need (i.e., rare species with no regulatory listing status); T = Threatened; None = No state status

toad (*Bufo houstonensis*, Endangered), Texas fawnsfoot (*Truncilla macrodon*, Threatened). One species, the monarch butterfly (*Danaus plexippus*), is a federal candidate species under consideration for protection. One mammal species, the tricolored bat (*Perimyotis subflavus*, Proposed Endangered), one reptile species, the alligator snapping turtle (*Macrochelys temminckii*, Proposed Threatened), and one clam species, the Texas heelsplitter (*Potamilus amphichaenus*, Proposed Endangered) are also federally proposed species under consideration for protection.

Only those species listed as endangered or threatened by the USFWS are afforded federal protection under the ESA. There is no USFWS-designated critical habitat within the study area for any federally protected species. An additional 14 bird species (American golden plover [*Pluvialis dominica*], American kestrel [*Falco sparverius paulus*], bald eagle [*Haliaeetus leucocephalus*], chimney swift [*Chaetura pelagica*], chuck-will's-widow [*Antrostomus carolinensis*], eastern whip-poor-will [*Antrostomus vociferus*], Henslow's sparrow [*Centronyx henslowii*], Kentucky warbler [*Geothlypis formosa*], lesser yellowlegs [*Tringa flavipes*], little blue heron [*Egretta caerulea*], pectoral sandpiper [*Calidris melanotos*], prairie loggerhead shrike [*Lanius ludovicianus excubitorides*], prothonotary warbler [*Protonotaria citrea*], and red-headed woodpecker [*Melanerpes erythrocephalus*]) are not federally listed species but are protected during migration under the Migratory Bird Treaty Act (MBTA) (U.S., 1918).

Table 3-10 also lists the fish and wildlife species considered by the TPWD to be endangered or threatened species within a geographic range that includes Leon and Houston Counties (TPWD, 2024c; TPWD, 2024f). In addition to the species listed by the USFWS, four additional bird species (Bachman's sparrow [*Peucaea aestivalis*], swallow-tailed kite [*Elanoides forficatus*], white-faced ibis [*Plegadis chihi*], and wood stork [*Mycteria americana*]), one fish species (paddlefish [*Polyodon spathula*]), one mammal species (Rafinesque's big-eared bat [*Corynorhinus rafinesquii*]), four additional clam species (sandbank pocketbook [*Lampsilis satura*], southern hickorynut [*Obovaria arkansasensis*], Texas pigtoe [*Fusconaia askewi*], and Trinity pigtoe [*Fusconaia chunii*]), and one additional reptile species (Texas horned lizard [*Phrynosoma cornutum*]) are state listed as threatened by the TPWD. While the Bald eagle has been delisted

by the USFWS, it is listed by the TPWD as a rare SGCN species. Texas Parks and Wildlife Code protects state-listed threatened and endangered species from capture, trap, take, or killing.

It should be noted that inclusion in the table does not imply that a species is known to occur in the study area but only acknowledges the potential for occurrence. The estimate of likelihood of a species to occur within the study area is based on an analysis of the habitat available and the known habitat preference for each species.

Descriptions of these listed threatened, endangered, and candidate species and likelihood of occurrence within the study area are provided below.

Alligator snapping turtle. The alligator snapping turtle (*Macrochelys temminckii*) is a federal proposed threatened species. Perennial water is required by the alligator snapping turtle, and this species is most often found within the deep-water portions of rivers, lakes, creeks, canals, oxbows, and swamps. Suitable habitat for the alligator snapping turtle occurs within and near Keechi Creek and the Trinity River within the study area. There is a TPWD TXNDD record of occurrence within five miles of the study area (TPWD, 2024h). However, the proposed transmission line project is not expected to permanently affect the occurrence of the alligator snapping turtle within the study area.

Bachman's sparrow. Bachman's sparrow (*Peucaea aestivalis*) is a state-listed threatened bird that nests on the ground against grass tufts or under low shrubs. Bachman's sparrow inhabits open pine woods with scattered bushes and grassy understory in the Pineywoods region and remnant grasslands in Post Oak Savannah region. eBird (2024), iNaturalist (2024), and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on Bachman's sparrows.

Bald eagle. The bald eagle (*Haliaeetus leucocephalus*) was federally delisted as a threatened or endangered species. However, it is listed as a rare SGCN species by the TPWD. Bald eagles are often found primarily near rivers and large lakes. Their preferred habitat includes tall trees or cliffs near water. They communally roost and hunt live prey,

scavenge, and pirate food from other birds. There have been recent observations of bald eagles in Leon and Houston Counties (eBird, 2024; TPWD, 2024h). However, the proposed transmission line project is not expected to permanently affect the occurrence of bald eagles within the study area.

Houston toad. The endangered Houston toad (*Bufo houstonensis*) is a small, greenish-brown speckled amphibian that depends on the forests of loblolly pine (*Pinus taeda*) and various hardwood trees and sandy soils it inhabits for migrating, hibernating, and feeding (USFWS, 2024d). Potential habitat for Houston toad was not observed within the study area. The TPWD TXNDD (2024h) and iNaturalist (2024) show no observation of Houston toads within Leon and Houston Counties. It is not likely that the proposed transmission line project will have an effect on Houston toads.

Interior least tern. The inland subspecies of the least tern (*Sterna antillarum athalassos*) is only listed when it occurs more than 50 miles from the coastline and was federally delisted as a threatened or endangered species. However, it is listed as a state endangered species by the TPWD. This subspecies prefers sand and gravel bars along streams or rivers for nesting habitat and forages for small fish and crustaceans. It has also been found to use man-made structures such as inland beaches, wastewater treatment plants, and gravel mines. There are no TPWD TXNDD (2024h) records of occurrence within five miles of the study area. However, the Trinity River runs through the study area and may create potential stopover sites and nesting habitat for the interior least tern; therefore, there is potential for this species to occur within the study area (TPWD, 2024l). However, the proposed transmission line project is not expected to permanently affect the occurrence of interior least terns within the study area.

Monarch butterfly. The monarch butterfly (Danaus plexippus) is a federal candidate species. In temperate climates like Texas, monarchs undergo long-distance migration. In the fall, monarchs begin migrating to their respective overwintering sites. This migration can take monarchs distances of over 3,000 kilometers and last for over two months. In

early spring, surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again (USFWS, 2024d). Based on migration data, the study area is located within the designated migration corridor for the monarch butterfly (TPWD, 2024c). It is not likely that the proposed transmission line project will have an effect on migration of monarch butterflies.

Paddlefish. The paddlefish (*Polyodon spathula*) is a state-listed threatened freshwater fish that occurs in every major river drainage from the Trinity River basin eastward. The paddlefish prefer large, free-flowing rivers but will frequent impoundments with access to spawning sites. iNaturalist (2024) and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on paddlefish.

Piping plover. The threatened piping plover (*Charadrius melodus*) is a small shorebird that inhabits coastal beaches and tidal flats (Haig and Elliott-Smith, 2004). From September to March, piping plovers are typically found along the Gulf coast shoreline using beaches, sandflats, tidal mudflats, dunes, and dredge islands as loafing and foraging areas (Haig and Elliott-Smith, 2004). The TPWD TXNDD (2024h) and eBird (2024) show no observation of piping plovers within Leon and Houston Counties. Potential habitat for piping plover was not observed within the study area. It is not likely that the proposed transmission line project will have an effect on migration of piping plovers.

Rafinesque's big-eared bat. Rafinesque's big-eared bat (*Corynorhinus rafinesquii*) is a state-listed threatened species historically found in lowland pine and hardwood forests with large, hollow trees. Rafinesque's big-eared bat roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures. iNaturalist (2024) and TPWD TXNDD (2024h) data show no observations reported within the study area. It

is not likely that the proposed transmission line project will have an effect on Rafinesque's big-eared bats.

Red-cockaded woodpecker. The threatened red-cockaded woodpecker (*Dryobates borealis*) is a relatively small, black and white bird with a ladder back and black crown. Red-cockaded woodpeckers inhabit mature pine forests and excavate cavities exclusively in living pine trees (USFWS, 2024d). Potential habitat for red-cockaded woodpecker was not observed within the study area. eBird (2024), iNaturalist (2024), and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on red-cockaded woodpeckers.

Rufa red knot. The threatened Rufa red knot (*Calidris canutus rufa*) is a medium-sized, stocky, short-necked sandpiper with a short, straight bill. During migration and winter in Texas, Rufa red knots may be found feeding in small groups on sandy, shell-lined beaches, bay flats, and lagoons (Oberholser, 1974). It is a moderately common migrant species along the coast, and more rarely inland, primarily in the eastern half of the state (USFWS, 2024d). There have been no recorded observations of Rufa red knots in Leon and Houston Counties (eBird, 2024; TPWD, 2024h). No potential habitat for the Rufa red knot was observed within the study area. It is not likely that the proposed transmission line project will have an effect on migration of Rufa red knots.

Sandbank pocketbook. The sandbank pocketbook (*Lampsilis satura*) is a state-listed threatened freshwater mussel. Sandbank pocketbooks occur in small streams to large rivers in slow to moderate current in sandy mud to sand and gravel substrate. iNaturalist (2024) and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on the sandbank pocketbook mussel.

Southern hickorynut. The southern hickorynut (*Obovaria arkansasensis*) is a state-listed threatened freshwater mussel found in the Neches, Sabine, and Cypress river basins.

Southern hickorynuts occur in clay, sand, and medium sized gravel substrates with low to moderate current. iNaturalist (2024) and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on the southern hickorynut.

Swallow-tailed kite. The swallow-tailed kite (*Elanoides forficatus*) is a state-listed threatened migratory bird that nests high in tall tree in clearing or on forest woodland edge, usually in pine, cypress, or various deciduous trees. Swallow-tailed kites can be found in lowland forested regions, marshes, and along rivers, lakes, and ponds. eBird (2024), iNaturalist (2024), and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on swallow-tailed kites.

Texas fawnsfoot. The threatened Texas fawnsfoot (*Truncilla macrodon*) is a Texas-endemic freshwater mussel species that occurs in the Colorado, Brazos, and Trinity River basins of central Texas. The Texas fawnsfoot is found in flowing, medium to large-sized streams with substrates of mud, sand and gravel and are often found in bank habitats or occasionally backwater, riffle and point bar habitats (USFWS, 2024d). Potential habitat for Texas fawnsfoot was observed within the study area. iNaturalist (2024) and TPWD TXNDD (2024h) data show no observations reported within the study area. The proposed transmission line project is not expected to permanently affect the occurrence of Texas fawnsfoot within the study area.

Texas heelsplitter. The Texas heelsplitter (*Potamilus amphichaenus*) is a proposed endangered freshwater mussel with a thin, smooth, elliptical shell and a straight hinge line (USFWS, 2024b). The Texas heelsplitter is restricted to the Sabine, Neches, and Trinity rivers of Texas (TPWD, 2024k) and occurs in substrates consisting of firm mud, sand, or finer gravels bottoms, in still to moderate flows (Howells, 2014). There are multiple TPWD TXNDD records of occurrences within and near the study area (TPWD, 2024h). However,

the proposed transmission line project is not expected to permanently affect the occurrence of the Texas heelsplitter within the study area.

Texas horned lizard. The Texas horned lizard (*Phrynosoma cornutum*) is a state-listed threatened terrestrial reptile. Their preferred habitats include open areas with sparse vegetation, including grass, prairie, cactus, scattered brush, or scrubby trees. They burrow into soil, enter rodent burrows, or hide under rocks when inactive. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicates that the Texas horned lizard has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on Texas horned lizards.

Texas pigtoe. The Texas pigtoe (*Fusconaia askewi*) is a state-listed threatened freshwater mussel that occurs in small streams to large rivers, usually in water with at least some current. The Texas pigtoe inhabits various substrates but is most often found in sand, gravel, and cobble. TPWD TXNDD (2024h) data show observations reported within the study area. However, the proposed transmission line project is not expected to permanently affect the occurrence of the Texas pigtoe mussel within the study area.

Tricolored bat. The tricolored bat (*Perimyotis subflavus*) is a federal proposed endangered species. Tricolored bats are one of the smallest bats native to North America. During the spring, summer, and fall, tricolored bats primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees. Commonly found roosting in caves in winter, they can also be found roosting in large numbers in culverts (Leivers, et al., 2019). Leon County is within the year-round active range of the tricolored bat (TPWD, 2024c). iNaturalist (2024) data show some observations reported near the study area. However, the proposed transmission line project is not expected to permanently affect the occurrence of tricolored bats within the study area.

Trinity pigtoe. The Trinity pigtoe (*Fusconaia chunii*) is a state-listed threatened freshwater mussel. The Trinity pigtoe is found in a variety of habitats but most commonly in riffles with sand, gravel, and cobble substrates. iNaturalist (2024) and TPWD TXNDD (2024h)

data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on the Trinity pigtoe mussel.

White-faced ibis. The white-faced ibis (*Plegadis chihi*) is a state-listed threatened bird species that prefers freshwater marshes, sloughs, and irrigated rice fields as habitat. They nest in marshes, low trees, on the ground in bulrushes or reeds, or on floating mats. iNaturalist (2024) and eBird (2024) data show some observations reported near the study area. However, the proposed transmission line project is not expected to permanently affect the occurrence of the white-faced ibis within the study area.

Wood stork. The wood stork (*Mycteria americana*) is a state-listed threatened migratory bird species that breeds in Mexico and nests in large tracts of baldcypress (*Taxodium distichum*) or red mangrove (*Rhizophora mangle*). The wood stork forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water and usually roosts communally in tall snags. eBird (2024), iNaturalist (2024), and TPWD TXNDD (2024h) data show no observations reported within the study area. It is not likely that the proposed transmission line project will have an effect on wood storks.

The TPWD also protects rare SGCN species within Texas (TPWD, 2024f). **Table 3-11** lists the SGCN species of fish and wildlife with the potential to occur within the study area. Correspondence from the TPWD (2024c) identified no other rare SGCN species of fish or wildlife that have been documented within, or in proximity to, the study area. Conservation efforts during construction activities are recommended to minimize habitat disturbance for these rare species. Descriptions of these rare SGCN species and likelihood of occurrence within the study area are provided below.

Bank swallow. The bank swallow (*Riparia riparia*) is a small swallow with a chunky body, large head, relatively short, pointed wings, and a slightly forked tail. Bank swallows breed in open lowland areas near bodies of water. iNaturalist (2024) and eBird (2024) data indicate that the bank swallow has been observed near the study area. However, it is not

Table 3-11: Rare Fish and Wildlife Species with Potential for Occurrence within the Study Area

Common Name	Scientific Name	Listing Status [1, 2]		Potential to Occur within Study Area
		Federal	State	
Bank swallow	*Riparia riparia*	None	SGCN	Yes
Blackbelted crayfish	*Procambarus nigrocinctus*	None	SGCN	No
Blackspot shiner	*Notropis atrocaudalis*	None	SGCN	Yes
Brewer's blackbird	*Euphagus cyanocephalus*	None	SGCN	Yes
Chestnut-collared longspur	*Calcarius ornatus*	None	SGCN	No
Common garter snake	*Thamnophis sirtalis*	None	SGCN	No
Common grackle	*Quiscalus quiscula*	None	SGCN	Yes
Common nighthawk	*Chordeiles minor*	None	SGCN	Yes
Deertoe	*Truncilla truncata*	None	SGCN	No
Eastern box turtle	*Terrapene carolina*	None	SGCN	Yes
Eastern spotted skunk	*Spilogale putorius*	None	SGCN	No
Fawnsfoot	*Truncilla donaciformis*	None	SGCN	No
Franklin's gull	*Leucophaeus pipixcan*	None	SGCN	Yes
Gulf Coast waterdog	*Necturus beyeri*	None	SGCN	No
Gulf mapleleaf	*Tritogonia nobilis*	None	SGCN	No
Henslow's sparrow	*Centronyx henslowii*	None	SGCN	Yes
Hoary bat	*Lasiurus cinereus*	None	SGCN	No
Lilliput	*Toxolasma parvum*	None	SGCN	No
Little spectaclecase	*Leaunio lienosus*	None	SGCN	Yes
Loggerhead shrike	*Lanius ludovicianus*	None	SGCN	Yes
Louisiana fatmucket	*Lampsilis hydiana*	None	SGCN	No
Mapleleaf	*Quadrula quadrula*	None	SGCN	No
Mississippi silvery minnow	*Hybognathus nuchalis*	None	SGCN	No
Mottled duck	*Anas fulvigula*	None	SGCN	Yes
Mountain lion	*Puma concolor*	None	SGCN	No
Neches crayfish	*Procambarus nechesae*	None	SGCN	No
Northern bobwhite	*Colinus virginianus*	None	SGCN	Yes

Source: TPWD (2024f); TPWD (2024h); USFWS (2024a); USFWS (2024b).

[1] USFWS listing codes: None = No federal status

[2] TPWD listing codes: SGCN = Species of Greatest Conservation Need (i.e., rare species with no regulatory listing status)

Table 3-11: Rare Fish and Wildlife Species with Potential for Occurrence within the Study Area (continued)

Common Name	Scientific Name	Listing Status [1, 2]		Potential to Occur within Study Area
		Federal	State	
Pimpleback	*Cyclonaias pustulosa*	None	SGCN	No
Pistolgrip	*Tritogonia verrucosa*	None	SGCN	No
Plains spotted skunk	*Spilogale interrupta*	None	SGCN	No
Pondmussel	*Sagittunio subrostratus*	None	SGCN	No
Prairie skink	*Plestiodon septentrionalis*	None	SGCN	No
Pygmy rattlesnake	*Sistrurus miliarius*	None	SGCN	Yes
Sabine shiner	*Notropis sabinae*	None	SGCN	No
Sanderling	*Calidris alba*	None	SGCN	No
Seminole bat	*Lasiurus seminolus*	None	SGCN	Yes
Slender glass lizard	*Ophisaurus attenuatus*	None	SGCN	Yes
Snowy plover	*Charadrius nivosus*	None	SGCN	No
Southeastern myotis bat	*Myotis austroriparius*	None	SGCN	No
Southern crawfish frog	*Lithobates areolatus areolatus*	None	SGCN	Yes
Spotted dusky salamander	*Desmognathus conanti*	None	SGCN	No
Spotted sucker	*Minytrema melanops*	None	SGCN	No
Sprague's pipit	*Anthus spragueii*	None	SGCN	Yes
Strecker's chorus frog	*Pseudacris streckeri*	None	SGCN	No
Tapered pondhorn	*Uniomerus declivis*	None	SGCN	No
Western box turtle	*Terrapene ornata*	None	SGCN	No
Western burrowing owl	*Athene cunicularia hypugaea*	None	SGCN	No
Western chicken turtle	*Deirochelys reticularia miaria*	None	SGCN	Yes
Willet	*Tringa semipalmata*	None	SGCN	Yes
Wilson's warbler	*Cardellina pusilla*	None	SGCN	Yes
Woodhouse's toad	*Anaxyrus woodhousii*	None	SGCN	No
Yellow rail	*Coturnicops noveboracensis*	None	SGCN	No

Source: TPWD (2024f); TPWD (2024h); USFWS (2024a); USFWS (2024b).

[1] USFWS listing codes: None = No federal status

[2] TPWD listing codes: SGCN = Species of Greatest Conservation Need (i.e., rare species with no regulatory listing status)

likely that the proposed transmission line project will permanently affect the occurrence of the bank swallow within the study area.

Blackbelted crayfish. The blackbelted crayfish (*Procambarus nigrocinctus*) is endemic to the Neches River system. It occurs in moderately flowing small creeks, among rocks and accumulated debris. The study area is not within the Neches River basin, and iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the blackbelted crayfish has not been observed near the study area. It is not likely that the proposed transmission line project will have an effect on blackbelted crayfish.

Blackspot shiner. The blackspot shiner (*Notropis atrocaudalis*) is a small species of freshwater fish. The blackspot shiner usually inhabits the shallow water of sandy and rocky runs and pools of creeks and small to medium rivers. The TPWD TXNDD (2024h) data indicates that the blackspot shiner has been observed near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the blackspot shiner within the study area.

Brewer's blackbird. Brewer's blackbirds (*Euphagus cyanocephalus*) are small, long-legged birds with long tails. Brewer's Blackbirds can be found in open habitats, such as coastal scrub, grasslands, riversides, meadows, as well as lawns, golf courses, parks, and city streets. iNaturalist (2024) and eBird (2024) data indicate that Brewer's blackbird has been observed near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of Brewer's blackbirds within the study area.

Chestnut-collared longspur. The chestnut-collared longspur (*Calcarius ornatus*) is a small ground-feeding bird that primarily eats seeds. It breeds in prairie habitats in Canada and the northern United States and winters to the south in the United States and Mexico. iNaturalist (2024), eBird (2024), and the TPWD TXNDD (2024h) data indicate that the chestnut-collared longspur has not been observed in or near the study area. It is not likely

that the proposed transmission line project will have an effect on chestnut-collared longspurs.

Common garter snake. The common garter snake (*Thamnophis sirtalis*) is a small, dark brown to black snake that typically has three light stripes running along the length of its body. Common garter snakes tend to prefer moist, grassy environments and are common in suburban and urban areas with ample cover. iNaturalist (2024), eBird (2024), and the TPWD TXNDD (2024h) data indicate that the common garter snake has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on common garter snakes.

Common grackle. The common grackle (*Quiscalus quiscula*) is taller and longer tailed than a typical blackbird, with a longer, more tapered bill and a glossy-iridescent body. Common grackles can be found in human landscapes, using scattered trees for nesting and open ground for foraging. Typical natural habitats include open woodland, forest edge, grassland, meadows, swamps, marshes, and palmetto hammocks. iNaturalist (2024) and eBird (2024) data indicate that the common grackle has been observed in and near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the common grackle within the study area.

Common nighthawk. The common nighthawk (*Chordeiles minor*) is a well-camouflaged aerial foraging bird. Common nighthawks inhabit open forests and grasslands, building nests on unsheltered ground. iNaturalist (2024) and eBird (2024) data indicate that the common nighthawk has been observed near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the common nighthawk within the study area.

Deertoe. The deertoe (*Truncilla truncata*) is an obligate mussel primarily found in rivers with moderate to swift currents and gravel substrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the deertoe has not been observed in or near the study

area. It is not likely that the proposed transmission line project will have an effect on deertoe mussels.

Eastern box turtle. Eastern box turtles (*Terrapene Carolina*) 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 enter pools of shallow water in summer. TPWD TXNDD (2024h) data indicate that the eastern box turtle has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the eastern box turtle within the study area.

Eastern spotted skunk. The eastern spotted skunk (*Spilogale putorius*) is a generalist that prefers wooded, brushy areas. Eastern spotted skunks can also be found in open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the eastern spotted skunk has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the eastern spotted skunk.

Fawnsfoot. The fawnsfoot (*Truncilla donaciformis*) is a mussel found in east Texas from the Neches River drainage east to the Sabine River and north to the Red River drainage. The fawnsfoot has been reported in streams, rivers, lakes, and reservoirs. In riverine habitats, it occurs in riffles or runs with moderate to swift current and in areas with no current such as banks and backwaters. The fawnsfoot is found in firm mud, sand, gravel, and cobble substrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the fawnsfoot has not been observed in or near the study area. It is not likely that the proposed transmission line project will impact the fawnsfoot.

Franklin's gull. Franklin's gull (*Leucophaeus pipixcan*) is a small migratory bird. It breeds in central provinces of Canada and adjacent states of the northern United States. It is a migratory bird, wintering in Argentina, the Caribbean, Chile, and Peru. The birds breed in colonies near prairie lakes with the nest constructed on the ground, or sometimes floating. eBird (2024) data indicates that the Franklin's gull has been observed in or near

the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the Franklin's gull within the study area.

Gulf Coast waterdog. The Gulf Coast waterdog (*Necturus beyeri*) is an aquatic salamander associated with permanent flowing water within forested habitats, from small streams to large rivers. The Gulf Coast waterdog is frequently associated with slow moving, sandy bottomed spring fed streams with abundant log jams and leaf litter beds. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Gulf Coast waterdog has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Gulf Coast waterdog.

Gulf mapleleaf. The Gulf mapleleaf (*Tritogonia nobilis*) is a freshwater mussel reported in streams, rivers, lakes, and reservoirs. In riverine habitats, it is often found nearshore, in backwaters, or in riffles in still to moderate currents with mud, sand, gravel, or cobble substrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Gulf mapleleaf has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Gulf mapleleaf.

Henslow's sparrow. Henslow's sparrows (*Centronyx henslowii*) migrate to east Texas in the winter. Individuals can be found in weedy fields with bare ground for running and walking. eBird (2024) data indicates that the Henslow's sparrow has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the Henslow's sparrow within the study area.

Hoary bat. The hoary bat (*Lasiurus cinereus*) lives in forests of the eastern U.S. and in arid deserts of the Southwest, but the hoary bat is most abundant in the forests and croplands of the Plains states and in forests of the Pacific Northwest. Diverse forest habitats with a mixture of forest and small, open areas that provide edges are ideal for this species. During summer, they prefer tree roosts that are in edge habitats close to feeding grounds. Hoary and red bats sometimes use the same roosts on different days and prefer nearly identical roosts for rearing young. iNaturalist (2024) and the TPWD TXNDD (2024h) data

indicate that the hoary bat has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on hoary bats.

Lilliput. The lilliput (*Toxolasma parvum*) is a small, freshwater mussel found in small streams to large rivers, oxbows, sloughs, lakes, ponds, canals, borrow pits, and reservoirs. The lilliput primarily occurs in slow currents with mud and sand substrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the lilliput has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on lilliput mussels.

Little spectaclecase. The little spectaclecase (*Leaunio lienosus*) is a freshwater mussel found in streams and rivers in still to moderate currents with mud, sand, or gravel substrates. The little spectaclecase is usually found in bank and backwater habitats or depositional areas but may occur in main-channel habitats such as riffles. iNaturalist (2024) data indicate that the little spectaclecase has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the little spectaclecase within the study area.

Loggerhead shrike. The loggerhead shrike (*Lanius ludovicianus*) is a thick-bodied songbird. Loggerhead shrikes inhabit open country with short vegetation and well-spaced shrubs or low trees and are often seen along mowed roadsides with access to fence lines and utility poles. eBird (2024) data indicate that the loggerhead shrike has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the loggerhead shrike within the study area.

Louisiana fatmucket. The Louisiana fatmucket (*Lampsilis hydiana*) is a freshwater mussel found in streams, rivers, oxbows, lakes, canals, and reservoirs. Louisiana fatmuckets occur in still to moderate currents with sand, mud, and gravel substrates. In riverine systems, Louisiana fatmuckets are found primarily in nearshore habitats such as banks, backwaters, and oxbows. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate

that the Louisiana fatmucket has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on Louisiana fatmucket mussels.

Mapleleaf. The mapleleaf (*Quadrula quadrula*) is a freshwater mussel that occurs in streams, rivers, lakes, and reservoirs. In riverine habitats, mapleleafs may be found in main-channel habitats such as riffles or runs with sand, gravel, and cobble substrates and moderate to swift currents. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the mapleleaf has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the mapleleaf.

Mississippi silvery minnow. The Mississippi silvery minnow (*Hybognathus nuchalis*) is a freshwater fish found in eastern Texas streams, from the Brazos River eastward and northward to the Red River. The Mississippi silvery minnow prefers moderate current with silty, muddy, or rocky substrate. In Texas, adults are likely to inhabit smaller tributary streams. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Mississippi silvery minnow has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Mississippi silvery minnow.

Mottled duck. The mottled duck (*Anas fulvigula*) is a brown duck with a buff head and yellow bill with a distinctive black spot at the gape. Mottled ducks inhabit estuaries, ponds, lakes, and secondary bays. iNaturalist (2024) and eBird (2024) data indicate that the mottled duck has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the mottled duck within the study area.

Mountain lion. The mountain lion (*Puma concolor*) is a large, slender cat with a smallish head and noticeably long tail. Mountain lions are generally found in remote mountains, canyonlands, or hilly areas with good cover. They are carnivores that prey on a variety of animals, including deer, wild hogs, rabbits, jackrabbits, javelinas, and rodents. iNaturalist

(2024) and the TPWD TXNDD (2024h) data indicate that the mountain lion has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on mountain lions.

Neches crayfish. The Neches crayfish (*Procambarus nechesae*) is crustacean that inhabits simple burrows in temporary or semi-permanent pools in roadside ditches. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Neches crayfish has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Neches crayfish.

Northern bobwhite. The northern bobwhite (*Colinus virginianus*) is a ground-dwelling bird in the New World quail family. Northern bobwhites occur in croplands, grasslands, pastures, fallow fields, grass-brush rangelands, open pinelands, open mixed pine-hardwood forests, and habitat mosaics. iNaturalist (2024), and eBird (2024) data indicate that the northern bobwhite has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the northern bobwhite within the study area.

Pimpleback. The pimpleback (*Cyclonaias pustulosa*) is a freshwater mussel found in small streams to large rivers. The pimpleback inhabits riffles and runs with flowing water to backwaters and pools. Pimplebacks are often found in substrates comprising sand, gravel, and cobble. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the pimpleback has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on pimpleback mussels.

Pistolgrip. The pistolgrip (*Tritogonia verrucosa*) is a freshwater mussel found in streams, rivers, lakes, and reservoirs. Pistolgrips are most often found in main-channel habitats with moderate 2024h and sand, gravel, or cobble substrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the pistolgrip has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on pistolgrip mussels.

Plains spotted skunk. The plains spotted skunk (*Spilogale interrupta*) is a generalist that prefers wooded, brushy areas and tallgrass prairie. Plains spotted skunks can be found in pen fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the plains spotted skunk has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the plains spotted skunk.

Pondmussel. The pondmussel (*Sagittunio subrostratus*) is a freshwater mussel found in smaller streams and rivers, ponds, lakes, reservoirs, and canals. In riverine habitats, the pondmussel typically occurs in backwaters, pools, sloughs, and oxbows with little to no current and substrates of mud or sand. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the pondmussel has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on pondmussels.

Prairie skink. The prairie skink (*Plestiodon septentrionalis*) is a medium-sized, tan lizard with black stripes. The prairie skink can occur in any native grassland habitat across the Rolling Plains, Blackland Prairie, Post Oak Savanna and Pineywoods ecoregions. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the prairie skink has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the prairie skink.

Pygmy rattlesnake. The pygmy rattlesnake (*Sistrurus miliarius*) occurs in a variety of wooded habitats from bottomland coastal hardwood forests to upland savannas. The species is frequently found in association with standing water. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the pygmy rattlesnake has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the pygmy rattlesnake within the study area.

Sabine shiner. The Sabine shiner (*Notropis sabinae*) is a freshwater fish that inhabits small streams and large rivers of eastern Texas from San Jacinto drainage northward along the Gulf Coast to the Sabine River Basin. The Sabine shiner prefers shallow water and is closely

restricted to substrate of fine, silt-free sand in small creeks and rivers with slight to moderate current. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Sabine shiner has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Sabine shiner.

Sanderling. The sanderling (*Calidris alba*) is a migratory bird that nests in the Arctic and winters on beaches throughout North, Central, and South America. Sanderlings can also be found less frequently on mud flats and shores of lakes or rivers. iNaturalist (2024), eBird (2024), and the TPWD TXNDD (2024h) data indicate that the sanderling has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on sanderlings.

Seminole bat. The Seminole bat (*Lasiurus seminolus*) roosts in Spanish moss (*Tillandsia usneoides*) during winter and spring. Habitats include pine, mixed pine-hardwood, and hardwood forests of uplands and bottomlands, particularly pine-dominated forests, including mature pine and pine-hardwood corridors in managed pine forest landscapes. iNaturalist (2024) data indicates that the Seminole bat has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the Seminole bat within the study area.

Slender glass lizard. The slender glass lizard (*Ophisaurus attenuatus*) is a terrestrial lizard often found in habitats with sandy soil. Slender glass lizards inhabit open grasslands, prairie, woodland edges, open woodlands, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds. iNaturalist (2024) data indicates that the slender glass lizard has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the slender glass lizard within the study area.

Snowy plover. The snowy plover (*Charadrius nivosus*) is a small, migrating shorebird that is formerly an uncommon breeder in the Texas panhandle. The snowy plover winters on the coast in large algal flats. iNaturalist (2024), eBird (2024), and the TPWD TXNDD

(2024h) data indicate that the snowy plover has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the snowy plover.

Southeastern myotis bat. The southeastern myotis bat (*Myotis austroriparius*) that roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the southeastern myotis bat has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on southeastern myotis bats.

Southern crawfish frog. The southern crawfish frog (*Lithobates areolatus areolatus*) is a terrestrial and aquatic amphibian. Terrestrial habitat includes grasslands, pastures, and prairies. The preferred aquatic habitat of the southern crawfish frog is ephemeral wetlands. The TPWD TXNDD (2024h) data indicates that the southern crawfish frog has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the southern crawfish frog within the study area.

Spotted dusky salamander. The spotted dusky salamander (*Desmognathus conanti*) is a salamander endemic to the United States. Spotted dusky salamanders can be found in small, clear, spring fed streams with sandy substrate bordered with ferns and moss as well as murky, stagnant water bodies in cypress swamps, baygalls, and flood plains in bottomland forests. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the spotted dusky salamander has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the spotted dusky salamander.

Spotted sucker. The spotted sucker (*Minytrema melanops*) is a freshwater fish found primarily in east Texas streams from the Red to the Brazos river basins. Spotted suckers are typically found in clear creeks with firm substrates. iNaturalist (2024) and the TPWD

TXNDD (2024h) data indicate that the spotted sucker has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the spotted sucker.

Sprague's pipit. Sprague's pipit (*Anthus spragueii*) is a migrating songbird that winters in the southwestern United States and Mexico. Habitat during migration and winter consists of pastures and weedy fields, including grasslands with dense herbaceous vegetation or grassy agricultural fields. eBird (2024) data indicates that Sprague's pipit has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the Sprague's pipit within the study area.

Strecker's chorus frog. Strecker's chorus frog (*Pseudacris streckeri*) is a terrestrial and aquatic, nocturnal tree frog. Strecker's chorus frog prefers sandy substrates and can be found in wooded floodplains and flats, prairies, cultivated fields and marshes. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Strecker's chorus frog has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Strecker's chorus frog.

Tapered pondhorn. The tapered pondhorn (*Uniomerus declivis*) is a freshwater mussel that occurs in streams, rivers, oxbows, marshes, swamps, lakes, canals, ponds, and reservoirs in still to moderate currents with mud, sand, or gravel substrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the tapered pondhorn has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the tapered pondhorn.

Western box turtle. The western box turtle (*Terrapene ornata*) is a "dry land" turtle and may be found far from bodies of water. The western box turtle is usually found in open habitats like pastures, prairies, and open woodlands. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the western box turtle has not been observed in or near

the study area. It is not likely that the proposed transmission line project will have an effect on the western box turtle.

Western burrowing owl. The western burrowing owl (*Athene cunicularia hypugaea*) is found in the western half of North America. Typical habitat consists of open grasslands, especially prairie, plains, and savanna. Preferred habitat is typified by shorter vegetation accompanied by abandoned small mammal burrows, which the owl modifies for its own use. This species rarely creates its own burrows and is thus associated with known habitat for prairie dog, ground squirrel, fox, and similar ground-dwelling mammals. eBird (2024) and the TPWD TXNDD (2024h) data indicate that the western burrowing owl has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the western burrowing owl.

Western chicken turtle. The western chicken turtle (*Deirochelys reticularia miaria*) is an aquatic and terrestrial species of turtle. The western chicken turtle uses aquatic habitats in the late winter, spring and early summer and terrestrial habitats the remainder of the year. Western chicken turtles prefer aquatic habitats of highly vegetated shallow wetlands with gentle slopes while preferred terrestrial habitats are not well known. iNaturalist (2024) data indicates that the western chicken turtle has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the western chicken turtle within the study area.

Willet. The willet (*Tringa semipalmata*) is a migrating shorebird that breeds in the northwestern United States and Canada. Preferred habitat of willets includes marshes, tidal mudflats, beaches, lake margins, mangroves, tidal channels, river mouths, coastal lagoons, and sandy or rocky shores. iNaturalist (2024) and eBird (2024) data indicate that the willet has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the willet within the study area.

Wilson's warbler. Wilson's warbler (*Cardellina pusilla*) is a small bird with a bright yellow belly and olive back. Wilson's warblers prefer forests and scrubby areas along streams during migration and lowland thickets near streams during nonbreeding seasons. eBird (2024) data indicate that Wilson's warbler has been observed in or near the study area. However, it is not likely that the proposed transmission line project will permanently affect the occurrence of the Wilson's warbler within the study area.

Woodhouse's toad. The Woodhouse's toad (*Anaxyrus woodhousii*) is a medium-sized toad native to the United States and Mexico. This species is typically found in lowland riparian corridors and wooded land beside streams and rivers. Woodhouse's toad is nocturnal and feeds on insects and other small invertebrates. iNaturalist (2024) and the TPWD TXNDD (2024h) data indicate that the Woodhouse's toad has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on the Woodhouse's toad.

Yellow Rail. The yellow rail (*Coturnicops noveboracensis*) is a small, well-camouflaged marsh bird. Yellow rails inhabit freshwater emergent wetlands, grass or sedge marshes and wet meadows during breeding season. During winter and migration, yellow rails will utilize a variety of open habitats, from rice paddies to dry hayfields. iNaturalist (2024), eBird (2024), and the TPWD TXNDD (2024h) data indicate that the yellow rail has not been observed in or near the study area. It is not likely that the proposed transmission line project will have an effect on yellow rail.

3.6 COMMUNITY VALUES AND COMMUNITY RESOURCES

The term "community values" is included as a factor for the consideration of transmission line certification under Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code. This term may be interpreted as a shared appreciation of an area or other natural or human resource by a national, regional, or local community.

The PUCT's CCN application requires consideration of values and resources important to a local community, such as an assessment of the following:

- Habitable structures within 300 feet of the centerline of the proposed project;
- Amplitude modulation radio (AM radio), frequency modulation (FM radio), microwave, and other electronic installations in the area;
- FAA-registered airstrips, private airstrips, and heliports located in the area;
- Irrigated pasture or croplands utilizing center-pivot or other traveling irrigation systems;
- Approvals or permits required from other governmental agencies; and
- Comments received from community leaders and members of the public.

In addition to the above-listed items, FNI evaluated the proposed project for community resources that may be of importance to a community as a whole. FNI has defined the term "community resources" as an area or other natural or human resource recognized by a national, regional, or local community. Examples of a community resource include a park or recreation area, a historical or archeological site, or a scenic vista. As previously discussed, FNI mailed consultation letters to various local elected and appointed officials to identify and collect information regarding community values and community resources. The above-listed community values and community resources are discussed in the appropriate sections of this document.

3.7 LAND USE

3.7.1 Urban and Residential Areas

The study area is situated approximately 12 miles to the west-northwest of the City of Crockett in Leon and Houston Counties, Texas. Both Leon and Houston County are sparsely populated with some rural residential and agricultural land uses. In Leon County, there are approximately 1,597 farms and 59,974 acres of cropland. In Houston County, there are approximately 1,411 farms and 96,553 acres of cropland (NASS, 2022). Rural residential and agricultural development is concentrated along the major roadway corridor in the study area, SH 7, and several small county roads. The study area is not located within the city limits or extraterritorial jurisdiction of any

local municipality. FNI solicited information regarding environmental and/or land use constraints within the study area from Leon County, Houston County, Leon County ISD, Houston County ISD, and various regional, state, and federal regulatory agencies. Consultation letters and agency responses are available for review in **Appendix A.**

Several of these responses are noted within the discussion in **Section 3.0** and/or **Section 4.0** of this report relevant to resource-specific comments made by the agency (e.g., the THC regarding cultural resources, the USACE regarding Clean Water Act permitting, and the TPWD and the USFWS regarding wildlife).

For responses that addressed potential land use constraints in general, the following list provides a summary of each:

- The U.S. DoD (2024) indicated that the transmission line project as proposed in Leon County will have minimal impact on military operations in the area.
- The TxDOT Bryan District (2024a) provided no comment on land use or environmental constraints. There are no planned TxDOT projects in the study area.
- The TxDOT Lufkin District (2024b) confirmed the proposed project area will be outside of the Lufkin District and completely within the Bryan District. There is a bridge replacement project underway on SH 7 at the Trinity River to the south of the study area.
- The FEMA Region VI (2024a) replied indicating no comment regarding land use or environmental constraints and recommended coordination with the local floodplain manager. If federally funded, FEMA requests the project follow Executive Order 11988 and Executive Order 11990.
- The Texas GLO (2024) provided no comment regarding land use or environmental constraints but recommended coordination with the GLO upon route approval to determine if an easement from the agency may be required.
- The RRC (2024a) provided no additional information regarding land use or environmental constraints.

- Centerville ISD (2024) indicated that they did not have knowledge of land development projects for the study area.
- Leon County Judge Ryder (2024) indicated that he did not have knowledge of land development projects for the study area.
- The office of State Representative Angelia Orr (2024) indicated that they did not have knowledge of land development projects for the study area.
- The USDA Texas Rural Development Office (2024b) indicated that they did not have knowledge of land development projects for the study area.

3.7.2 Recreation Areas

A review of federal, state, and local websites and maps, as well as a reconnaissance survey, identified no parks or recreation areas within the study area. A review of the National Park Service (NPS) website identified one historic trail system, the El Camino Real De Los Tejas National Historic Trail. The historic trail system represents the common trade routes for the Spanish colonization of Texas and northwestern Louisiana through East Texas. The path of the historic trail system crosses the southern portion of the study area (NPS, 2024); however, no physical trail system is present within the study area, and no publicly owned lands are associated with this trail system. All properties within the study area are privately owned.

No other NPS parks, wild and scenic rivers, national monuments, national recreation areas, national preserves, national battlefields, or other national historic sites open to the public are located within the study area (NPS, 2024).

There are no TPWD parks located within the study area (TPWD, 2024i). Conservation easements recorded in the National Conservation Easement Database (NCED) (USGS, 2024a) were reviewed for the study area. A conservation easement, owned by Ducks Unlimited that encompasses 264 acres, is located within the study area to the south of SH 7 (USGS, 2024a). The Busch Slough Wildlife Management Association also overlaps with the study area (TPWD, 2024i).

3.7.3 Agriculture

The NASS 2022 Census of Agriculture identified forage as the top primary crop by acreage area in Leon and Houston Counties. In terms of statewide significance, Leon and Houston County crop sales or livestock inventory do not rank substantially among other Texas counties for those categories (NASS, 2022). Leon and Houston County agricultural data is provided in **Table 3-12**.

3.7.4 Industry

Leon County has been producing oil and natural gas for decades, with over 2,875 drilled wells on approximately 546 active production leases. From 1993 to 2024, Leon County oil production totaled more than thirty-eight million barrels. Houston County has been producing natural gas for decades with approximately 2,297 drilled wells on approximately 159 active production leases. From 1993 to 2024, Houston County oil production totaled more than twenty-eight barrels (Texas Drilling, 2024).

Oil and natural gas production is sparse in the study area with approximately 49 recorded well locations identified in the RRC databases (RRC, 2024b). The number of records is evenly distributed throughout the study area. A total of 13 RRC-regulated pipelines cross the study area. Field reconnaissance supports that this land use constraint is not very active within the study area. Based on a review of the RRC databases (RRC, 2024b), one property within the study area was identified as a registered liquefied petroleum gas (propane) site. The RRC provided no additional information regarding land use or environmental constraints (RRC, 2024a).

3.7.5 Aesthetics

"Aesthetics" is included as a factor for consideration in the evaluation of transmission facilities in Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code. For the purpose of this study, the term "aesthetics" is utilized by FNI to address the subjective perception of natural beauty in a landscape. This evaluation attempts to define and measure the study area's scenic qualities.

Table 3-12: Agricultural Data for Leon and Houston Counties

Statistical Category	Leon County Data	Houston County
Market Value of Products Sold (in $ millions)		
Crop Sales	$8.8 million	$12.5 million
Livestock Sales	$224.7 million	$77.5 million
Total Sales	$233.5 million	$90 million
Top Crop Types and Livestock Inventory		
1st Crop Type and Acreage	Forage (hay/haylage), all – 36,064 acres	Forage (hay/haylage), all – 54,548 acres
2nd Crop Type and Acreage	Corn for grain – 172 acres	Cotton, all – 1,504 acres
3rd Crop Type and Acreage	Peaches, all – 163 acres	Vegetables harvested, all – 1,254 acres
4th Crop Type and Acreage	Pecans, all – 108 acres	Watermelons – 1,197 acres
5th Crop Type and Acreage	Vegetables harvested, all – 56 acres	Corn for grain – (Data withheld)
1st Livestock Type and Number of Animals	Broilers and other meat-type chickens – 6,281,264	Broilers and other meat-type chickens – 1,059,460
2nd Livestock Type and Number of Animals	Cattle and calves – 87,738	Cattle and calves – 108,126
3rd Livestock Type and Number of Animals	Goats – 761	Goats – 724

Source: NASS (2022).

Consideration of the visual environment includes a determination of aesthetic values (where the major potential effect of a project on the resource is considered visual) and recreational values (where the location of a transmission line could potentially affect the scenic enjoyment of the area).

FNI considered the following aesthetic values in this study that combine to give an area its aesthetic identity:

- Topographical variation (hills, valleys, etc.);
- Prominence of water in the landscape (rivers, lakes, etc.);
- Vegetation variety (woodlands, prairies, etc.);

- Diversity of scenic elements;
- Degree of human development or alteration; and
- Overall uniqueness of the scenic environment compared with the larger region.

The study area's landscape is dominated by gently rolling to nearly level, open shrubland and prairie. Elevations range from 150 to 250 feet above msl (USGS, 2022a; USGS, 2022b; USGS, 2022c). Rangeland is the primary land use for most of the study area. The public road network is sparse. Instead, the study area is dominated by residential private roads.

A review of the NPS website identified no wild and scenic rivers, national parks, national monuments, or national battlefields within the study area. One historic trail system, the El Camino Real De Los Tejas National Historic Trail was identified on the NPS website. The historic trail system represents the common trade routes for the Spanish colonization of Texas and northwestern Louisiana through East Texas. The path of the historic trail system crosses the southern portion of the study area (NPS, 2024); however, no physical trail system is present within the study area, and no publicly owned lands are associated with this trail system. All properties within the study area are privately owned. A review of the National Scenic Byways Program and the America's Byways listing revealed no designated scenic byways in the study area (Federal Highway Administration [FHA], 2024; Scenic Texas, 2024).

3.7.6 Transportation and Aviation

The existing transportation system within the study area includes one major highway, SH 7, and local primary and secondary roads. The TxDOT Bryan District (2024a) provided no comment on land use or environmental constraints. The TxDOT Lufkin District (2024b) confirmed the proposed project area will be outside of the Lufkin District and completely within the Bryan District. There is a bridge replacement project underway on SH 7 at the Trinity River to the south of the study area.

No active railroads are present in the study area. Both Leon and Houston County have multiple railroad services (Texas State Historical Association [TSHA], 2020a; TSHA, 2020b).

FNI conducted a review of the following resources to identify airstrips in the vicinity of the study area: the FAA Southwest Region Airport Directory (FAA, 2024), the TxDOT Airport Directory (TxDOT, 2024c), airport runway and facilities data from AirNav, LLC (AirNav, 2024), recent aerial photography (USDA, 2022), and field reconnaissance. No FAA-registered public or military airfields of any type were identified within 20,000 feet of the study area. No private airstrips were identified within 10,000 feet of the study area. No heliports were identified within 5,000 feet of the study area. No proposed aviation projects were identified during the information gathering process. The nearest aviation facility, W C Ranch Airport, is a private airfield located approximately 30,000 feet (5.6 miles) to the northeast of the study area.

3.7.7 Communication Towers

The review of the Federal Communications Commission (FCC, 2024) database and field observations identified one registered communication tower within the study area as shown on **Figure 3-1** in **Appendix B**. The review included cellular phone communication towers, microwave towers, AM radio transmitters, FM radio transmitters, and other similar electronic installations. Towers of Texas Site Development, Inc. had a registration for a 97.5-foot communication tower within the study area. The communication tower registration has been inactive with a cancelled status since 2014 (FCC, 2024). No active communication towers, microwave towers, AM radio transmitters, or FM radio transmitters were identified within the study area (FCC, 2024).

3.8 CULTURAL RESOURCES

A records examination for known archeological and historical sites was made to help determine the likelihood of finding historic and prehistoric archeological sites within the study area. This research was conducted utilizing the THC Texas Archeological Sites Atlas (TASA). This database contains published and unpublished data on cultural resources surveys, districts and properties listed in or determined eligible for listing in the National Register of Historic Places (NRHP), Recorded Texas Historic Landmarks (RTHLs), State Antiquities Landmarks (SALs), Official Texas Historical Markers (OTHMs), cemeteries, and previously recorded archeological sites, including any archeological sites listed in or eligible for listing in the NRHP (THC, 2024b).

3.8.1 Cultural History

The study area is located in the Post Oak Savanna, a part of the larger Prairie-Savanna Archeological Region in the Eastern Planning Region of Texas (TPWD, 2024g). The cultural history of the Prairie-Savanna Archeological Region is typically divided into four primary prehistoric periods, followed by one historic period: the Paleoindian Period (circa 12,000 to 8,000 Before Present [B.P.]), the Archaic Period (8,000 to 2,000 B.P.), the Woodland Period (2,000 B.P. to 1,200 B.P.), the Late Prehistoric Period (1,200 B.P. to 250 B.P.), and the Historic Period (250 - 50 B.P.) (Perttula, 2004). These periods are defined by distinct patterns of material culture, which are reflected in the archeological record (Prikryl, 1993).

3.8.1.1 Paleoindian Period (circa 12,000 to 8,000 years B.P.)

The earliest evidence of human occupation in the region dates to around 11,500 to 11,000 years ago, marked by Clovis projectile points. These points link the area to broader Paleoindian traditions across the Southern Great Plains (Holliday, 1997). Paleoindian sites are typically located near river corridors, creek terraces, and lowland floodplains, which provide water and abundant resources.

Clovis groups relied on a broad range of resources, including smaller game such as deer, turkey, raccoon, and rabbit, as well as aquatic resources like fish and turtles. This diverse subsistence strategy was vital as the climate shifted to warmer, drier conditions. Tools from this period include lanceolate points (Clovis, Folsom, Plainview), scrapers, and notched tools, crafted from local materials such as chert and quartzite. Evidence suggests that these groups engaged in trade networks to acquire distant raw materials (Prikryl, 1993). Their small, flexible bands likely moved in response to seasonal migration routes, adapting to the availability of resources, with social organization focused on kinship ties and collective survival (Collins, 1995; Prewitt, 1981).

3.8.1.2 Archaic Period (8,000 to 2,000 B.P.)

The Archaic period saw significant shifts in subsistence, technology, and settlement patterns, marked by a diversification in diet following the disappearance of large megafauna. Groups

adapted to a warmer, drier climate by incorporating more small game and plant foods (Prikryl, 1993) into their diet. Evidence from sites like the Boyer Site indicates long-term habitation, seasonal occupation patterns, and a mixed economy of hunting and plant processing. Lithic tools from this period include bifacial and unifacial points, scrapers, grinding stones, and manos and metates (Perttula, 2016).

The Archaic period also saw the rise of semi-permanent settlements, with small shelters and base camps near river corridors and creek terraces. By the end of this period, there was an increased focus on plant use, with possible domestication of local species such as sunflower and squash. Trade networks emerged, with obsidian and shell beads indicating inter-group exchanges (Hester, 1995).

3.8.1.3 Woodland Period (2,000 to 1,200 B.P.)

The Woodland period was characterized by cultural and technological advancements influenced by warmer and drier environmental conditions. This era saw a shift toward more sedentary lifestyles supported by agricultural developments, including the domestication of plants (Fields, 2005). The introduction of ceramics improved food storage and preparation, facilitating permanent settlements. Sites like the Boyer Site provide evidence of early ceramic vessels, signaling a transition toward long-term habitation and more complex material culture.

Domesticated crops such as sunflower, squash, and eventually maize supplemented traditional hunting and gathering practices, providing more stable food sources (Fields, 2005). Archeological evidence from sites like the Boyd and Boyer Sites suggests a growing reliance on both wild and domesticated plant foods, with tools like grinding stones indicating increased plant food processing. Settlement patterns shifted toward permanent villages near rivers and creeks, with durable shelters marking a move to a more settled way of life (Hester, 1995).

Trade networks expanded during this period, facilitating the exchange of goods such as obsidian, shells, and copper, as well as ceramic styles and agricultural tools, which influenced cultural development across the region (Fields, 2005). These innovations laid the foundation for more complex societies in subsequent periods.

3.8.1.4 Late Prehistoric Period (1,200 to 250 B.P.)

The Late Prehistoric period saw significant cultural and technological advancements, particularly with the height of Caddo culture in East Texas (Perttula, 2004). Maize agriculture, along with beans, squash, and sunflower, supported the growth of permanent or semi-permanent villages. These agricultural practices were complemented by hunting, fishing, and the gathering of wild plant foods, creating a diverse diet. Settlements were often located near rivers, which were essential for irrigation and fishing.

Archeological sites, including the Boyer Site, reveal planned villages with multifamily dwellings and communal spaces for food storage and ceremonies (Fields, 2005). The presence of ceremonial centers and extensive trade networks, evidenced by materials such as obsidian, shells, and copper, reflects significant regional interactions and cultural exchange. Leon County was inhabited by the Deadose Indians, a band of the Bidais that spoke Caddoan language (TSHA, 2020b). Caddo pottery, known for its decorative designs, played a key role in daily life and rituals, symbolizing the artistic sophistication and cultural identity of the Caddo people (Perttula, 2004). These advancements laid the foundation for complex social structures and economies in the region (Fields, 2005; Hester, 1995).

3.8.1.5 Historic Period (250 to 50 B.P.)

The Historic Period of the Post Oak Savanna is marked by the interactions between Indigenous cultures and European explorers and settlers. In the 18th century, Spanish expeditions established missions and presidios in the region. The local Indigenous groups during this period included the Bidai, Tonkawa, and Atakapa (THC, 2024b). These communities, reliant on hunting, gathering, and horticulture, experienced significant disruptions due to introduced diseases and shifting alliances influenced by Spanish, French, and later Anglo-American colonization.

Although Spanish settlements were limited in this region, their activities laid the groundwork for future territorial claims and resource exploitation. By the 19th century, Anglo-American settlers had supplanted the Spanish presence, establishing farms, ranches, and infrastructure that reshaped the ecological and cultural landscape. Archeological discoveries, including mission-

related artifacts and trade goods, emphasize the interactions between Indigenous and European material cultures (Perttula, 2004).

3.8.2 Records Review

3.8.2.1 Previous Archeological Investigations

Review of the TASA data (THC, 2024b) revealed six previous surveys within or crossing the study area. Several additional previous cultural resources investigations have been conducted in and around Leon and Houston Counties. Four surveys were conducted in the 1970s and 1980s for the USACE or the USDA SCS. Two surveys were conducted in 2007 for the Katy Pipeline.

3.8.2.2 Previously Recorded Archeological Sites

Based on the review of the TASA data (THC, 2024b) and the response from TARL (2025), three previously recorded archeological sites have been recorded within the study area. They are associated with three of the previously conducted archeological surveys. One site (identified as Site 41LN215) recorded in 1986 is described as a prehistoric campsite with burials heavily disturbed by private landowner's digging. Further work was recommended, pending landowner cooperation. The second site (identified as Site 41LN10) is described as a village and burial site impacted by cultivation. No recommendations were provided. The third site (identified as Site 41LN9) is described as a village site; fragments of pottery, flint, and chert were found in a roadside ditch. No recommendations were provided. The TASA does not show all sites that may exist within an area, but only those sites that have been formally recorded (THC, 2024b). Due to the lack of systematic surveys, it is possible unknown archeological sites could be present, but not yet documented, in the study area.

3.8.2.3 Historic Sites

A literature and records review of data from the TASA (THC, 2024b) was conducted to locate previously recorded historic resources within the study area. Resources include historic properties listed in, or eligible for listing in, the NRHP, RTHLs, SALs, Historic Texas Cemeteries, and OTHMs. The THC (2024a) and the TARL (2025) were also consulted for published and

unpublished data regarding historic cemetery locations, as well as historic properties listed on or determined eligible for listing on the NRHP.

Historic sites tend to be located near historic transportation routes, streams, springs, wells, and windmills, and commonly consist of aboveground structures, structural elements, or may only be represented by buried (archeological) historic artifacts. Historic sites generally exhibit greater surface visibility because either they are not buried as deeply as prehistoric sites, or they are not buried at all. Historic site types in the region include missions, town sites, farmsteads, ranches, cemeteries, stone walls, mills, lime kilns, and industrial sites.

The records review revealed one previously recorded historic site within the study area (TARL, 2025; THC, 2024b). The site (identified as Site 41H086) was recorded in 1976 and is described as a Euro-American site dating from 1900 to 1926. It includes the remaining concrete lock and dam structures built by the USACE in the Trinity River. The site was not recommended for listing in the NRHP.

Two cemeteries are recorded within the study area, Shiloh Community Cemetery and Mount Pilgrim Cemetery (TARL, 2025; THC, 2024b). Limited information is available for the cemeteries. No other historic properties, RTHLs, SALs, or OTHMs were documented within the study area.

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4.0 EVALUATION OF THE PROPOSED ROUTE

The evaluation presented in this section addresses impacts to the environment in consideration of the requirements of Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code, PUCT Procedural Rules Section 22.52(a)(4), PUCT Substantive Rules Section 25.101 (including the PUCT's policy of prudent avoidance), a reconnaissance survey, and the information and responses obtained from local officials and regional, state, and federal agencies.

Measurements for the majority of the environmental factors were obtained from the USDA National Agriculture Imagery Program (NAIP) aerial photography, which was ortho-rectified to National Map Accuracy Standards with a pixel resolution of 60 centimeters (or approximately two feet) and a horizontal accuracy of six meters (or approximately 20 feet) of photo-identifiable ground control points for true ground location (USDA, 2022).

FNI professionals with expertise in different environmental disciplines (e.g., geology/soils, hydrology, terrestrial ecology, wetland ecology, land use/aesthetics, and archeology) evaluated the proposed route based upon environmental conditions present along the route. Each professional independently analyzed the route. Evaluation of the proposed route presented in this section involved the inventory and tabulation of data related to multiple environmental and land use evaluation factors. **Table 4-1** (at the end of this chapter) summarizes the impacts of the proposed route identified during this evaluation.

4.1 IMPACTS ON PHYSIOGRAPHY AND GEOLOGY

Construction of the proposed project would have no significant effect on the physiographic or geologic features/resources of the area. The erection of the structures would require the removal and/or minor disturbance of small amounts of surface and near-surface materials but would have no measurable impact on the geologic resources or features along the proposed route. Several fault lines surround the study area, including a normal fault located approximately eight miles to the west of the proposed alignment and approximately four miles long, a cluster of normal faults located approximately 12 miles to the north of the proposed alignment ranging from

approximately four to six miles long, and a cluster of normal faults located approximately seven miles to the northeast of the proposed alignment ranging from three to 14 miles long (BEG, 2024). No faults were noted within the study area, and no geologic hazards are anticipated. It is not anticipated that the proposed route will have an impact on the physiographic or geologic features/resources of the area.

4.2 IMPACTS ON SOILS

4.2.1 Soil Associations

The construction and operation of transmission lines normally create very few long-term adverse impacts on soils. The major potential impacts upon soils from transmission line construction would be erosion and soil compaction. The potential for soil erosion is generally greatest during the initial clearing of the ROW until vegetation cover re-establishes.

To provide adequate space for construction activities, to improve reliability, and to minimize corridor maintenance problems, most woody vegetation would be removed from the ROW of the proposed project. In these areas, only the leaf litter and a small amount of herbaceous vegetation would remain, and both would be disturbed by the movement of heavy equipment during construction, service, and maintenance activities.

The most important factor in controlling soil erosion associated with construction activity is to revegetate areas as soon as practical following construction. Natural succession would quickly revegetate the majority of the ROW. Critical areas, such as steep slopes and areas of shallow topsoil, may require erosion control blankets and additional seeding to maintain soil stability.

The ROW will be inspected both during and after construction to ensure that problem erosion areas are identified. In addition, Oncor will develop a Storm Water Pollution Prevention Plan (SWPPP), if required, which will detail measures to minimize impacts associated with potential soil erosion and downstream sedimentation, as well as measures to be taken following construction to revegetate disturbed areas. Other than potential construction-related erosion

(mitigated per SWPPP, if required), soil impacts are anticipated to be insignificant and limited to the physical occupation of small areas at the base of support structures.

4.2.2 Prime Farmland

Approximately 2,080 acres of the study area soils are classified as prime farmland soils, and 520 acres of the study area soils are classified as farmland of statewide importance (USDA, 1987; USDA, 1991; USDA, 2024a). No center-pivot irrigation systems or cropland with mobile irrigation systems are crossed by the proposed route. Other than potential construction-related erosion (mitigated per SWPPP, if required), soil impacts to prime farmland of statewide importance, both with and without irrigation, are anticipated to be insignificant and limited to the physical occupation of small areas at the base of support structures.

4.3 IMPACTS ON WATER RESOURCES

4.3.1 Surface Water Features and Floodplains

The construction of the proposed transmission line would have minimal adverse impacts on surface water resources (e.g., rivers, streams, open water lakes, wetlands) in the study area. Any creek or stream crossed by the proposed project would be spanned by the proposed transmission line, and no supporting structures would be placed within the streambed of any surface drainage. The main potential impacts to surface waters and floodplains from major construction projects are siltation resulting from soil erosion and pollution from spillage of petroleum products (e.g., fuel, lubricants, etc.) or other chemicals. Clearing of vegetation could result in increased erosion resulting in slightly higher than normal sediment yields being delivered to area waterways following heavy rainfall. However, these impacts are expected to be short-term and minor based on the relatively small area to be disturbed at any particular time, the short duration of the construction activities, the preservation of stream-side vegetation where practical, the efforts of Oncor to control runoff from construction areas through the use of best management practices (BMPs), and implementation of the SWPPP, if required.

As accounted in **Table 4-1**, the proposed route crosses Upper Keechi Creek. As discussed in **Section 3.4.1**, the Upper Keechi Creek is listed as an ecologically significant stream segment (TPWD, 2024b). The proposed route was selected to limit paralleling and crossing streams to minimize habitat fragmentation. Where the proposed route crosses Upper Keechi Creek or surface water features, these locations were selected to minimize further fragmentation within the area.

In addition, several different types of wetlands and surface water features occur within the study area, including emergent wetlands (approximately 234 acres), forested/shrub wetlands (approximately 1,114 acres), freshwater ponds (approximately 104 acres), lakes (approximately 201 acres), and streams and rivers (approximately 2,549 acres). The proposed route crosses riparian vegetation and potential wetland habitat (approximately 3,517 linear feet) as summarized in **Table 4-1.**

The USACE regulates the discharge of dredged and fill material into waters of the U.S., including wetlands, under Section 404 of the Clean Water Act. The proposed project may require a permit under Section 404 regulations including specific authorization under Nationwide Permit (NWP) 57 for Electric Utility Line and Telecommunications Activities (effective date March 15, 2021) (USACE, 2024). NWP 57 authorizes the construction, maintenance, or repair of utility lines (including overhead transmission lines), associated foundations, access roads, and substations, in all jurisdictional water features. Generally, transmission lines are designed to span stream or wetland crossings in most instances, thereby minimizing impacts to waters of the U.S.

The USACE Fort Worth District responded to the solicitation of information and assigned Project Number SWF-2024-00525 to the proposed transmission project. Further correspondence, if necessary, should be directed to the Regulatory Division (USACE, 2024). NWP 57 specifies certain conditions which necessitate filing a pre-construction notification (PCN) to the USACE and written approval before construction activities may begin, including impacts to greater than one tenth of an acre of waters of the U.S. As mentioned previously, transmission lines are designed to span

stream or wetland crossings in most instances, thereby minimizing the need for a Section 404 permit.

Upon receiving PUCT approval, Oncor will conduct field verification to delineate waters of the U.S. and wetlands impacted by the proposed transmission line project to determine the appropriate level of coordination with the USACE under the Section 404 program, as requested in the agency correspondence letter from the USACE (2024). If wetlands are cleared during construction for the proposed project, there should be no change in pre-construction contours or local drainage patterns, and wetlands should eventually re-establish within the ROW. Consistent with the USACE (2024) and the TPWD guidance (2024c), the location of the proposed project minimizes impacts to waterways, associated floodplains, riparian corridors, playa features, and wetlands, and maintains buffers to these features by minimizing fragmentation and utilizing/paralleling existing disturbed corridors where available.

Oncor will implement a SWPPP, if required, and will seek to minimize impacts to surface waters during construction of the proposed project. Oncor will also comply with any compensatory mitigation requirements that may be required as part of the Section 404 permitting process. From a water resources perspective, the proposed project should have no significant impacts on surface water.

According to the FEMA flood insurance rate maps, the proposed route lies within the 100-year floodplains of the Trinity River and Upper Keechi Creek (FEMA, 2001a; FEMA, 2001b; FEMA, 2001c; FEMA, 2001d; FEMA, 2001e). When locating transmission line structures within a floodplain, the structures would be designed and constructed so as not to impede the flow of water or create any hazard during flooding. Also, if support structures are to be located within floodplains, Oncor would coordinate in advance with the appropriate county floodplain administrators. Construction of the proposed project should not have significant impacts on the function of floodplains, nor adversely affect adjacent or downstream properties.

4.3.2 Groundwater Resources/Aquifers

The construction, operation, and maintenance of the proposed project are not expected to adversely affect the 15 identified water wells or groundwater resources underlying the study area or its vicinity. The amount of recharge area disturbed by construction is minor compared with the total amount of recharge area available for the groundwater systems in the region. No measurable alteration of aquifer recharge capacity would occur, and the likelihood of groundwater contamination would be minimal. The impact of the proposed transmission line on groundwater resources would be negligible because the transmission line would be constructed above ground rather than buried.

The main potential impact on groundwater resources from any construction project is pollution resulting from the accidental spillage of petroleum or other chemical products. Use of industry standard best management practices during construction for proper control and handling of any petroleum or other chemical products would be implemented, and therefore, the project would have minimal impacts on groundwater.

4.4 IMPACTS ON ECOLOGY

4.4.1 Vegetation

4.4.1.1 Terrestrial Vegetation

The primary impact to terrestrial vegetation resulting from site preparation and construction of the proposed project would be the removal of existing woody vegetation from the areas required for the transmission line ROW. **Table 4-1** presents the linear extent of different land cover types crossed by the proposed route. The proposed route may require some clearing of woody vegetation, which is predominantly associated with the riparian areas along the Upper Keechi Creek and Trinity River corridors and other smaller drainages scattered throughout the study area. As shown in **Table 4-1**, the primary terrestrial vegetation crossed by the proposed route is classified rangeland pasture consisting of herbaceous floodplains and mixedgrass prairie. The clearing of these vegetation communities could cause some degree of habitat fragmentation.

However, the only vegetation cover lost would be that which is occupied by the base of the transmission line support structures.

Consistent with project-specific recommendations from the TPWD regarding the prevention of habitat fragmentation, construction within the ROW will be performed in such a manner as to minimize adverse impacts to vegetation and to retain existing ground cover wherever possible (TPWD, 2024c). All brush and undergrowth within the ROW will be removed. Soil and plant conservation practices will be undertaken, where possible, to protect native vegetation and ensure a successful restoration program for disturbed areas, emphasizing native species with consideration given to landowner preferences. Erosion and stream sedimentation would be controlled as required by procedures set forth in the SWPPP, if required.

4.4.1.2 Aquatic/Hydric Vegetation

Based on photointerpretation of aerial imagery (USDA, 2022), review of USGS topographic maps (USGS, 2022a; USGS, 2022b; USGS, 2022c), and review of USFWS NWI maps (USFWS, 2024c), the approximate impacts to waters of the U.S. associated with the proposed route were measured in linear feet. Potential waters of the U.S., including wetlands, occurring along the proposed route are categorized as riparian habitat, but not all riparian areas may be considered jurisdictional by the USACE under Section 404 of the Clean Water Act. Most of the areas categorized as riparian are associated with the Upper Keechi Creek and Trinity River corridors and other associated stream segments. Delineation of potentially jurisdictional waters of the U.S. would require a detailed site-specific examination of vegetation, hydrology, and soils. The proposed route crosses riparian vegetation and potential wetland habitat (approximately 3,517 linear feet) as summarized in **Table 4-1**.

Generally, the transmission line would be designed to span areas where wetland vegetation occurs, thereby avoiding the need for a Section 404 permit. Given the presence of minimal apparent wetland vegetation along the proposed route, authorization of project construction pursuant to Section 404 is anticipated. Upon receiving PUCT approval, Oncor will conduct field verification to delineate waters of the U.S. and wetlands impacted by the proposed transmission

line project to determine the appropriate level of coordination with the USACE under the Section 404 program. Additional field verification may be required to document the absence of waters of the U.S. under the Section 404 program. If wetlands cannot be avoided and need to be cleared during construction for the proposed project, there would be no change in pre-construction contours or local drainage patterns, and wetlands would eventually re-establish within the ROW.

4.4.1.3 Commercially or Recreationally Important Plant Species

Commercially important vegetation within the study area includes forage and row crops. The proposed route does cross agricultural fields used for row crop and rangeland used by wildlife and livestock for forage. Small amounts of these areas may be temporarily affected during the construction phase. However, once construction is complete, impacts to these resources should not be significant. Additionally, soil and plant conservation practices will be undertaken to protect native vegetation, where possible, and ensure a successful restoration program for disturbed areas emphasizing native species.

4.4.1.4 Endangered, Threatened, and Rare Plant Species

According to the USFWS IPaC and the TPWD TXNDD for Leon and Houston County, two endangered or threatened plant species have the potential to occur within the study area or along the proposed route (USFWS, 2024b; TPWD, 2024h). No designated critical habitat for any endangered or threatened vegetation species occurs along the proposed route (USFWS, 2024b).

For all listed endangered or threatened plant species and otherwise rare plant species, the TPWD advised that precautions should be taken if any endangered, threatened, or rare species included on county rare species lists are known to occur in the study area or have been documented in the recent past (TPWD, 2024f). While none of the listed endangered or threatened plant species or rare SGCN species listed in **Table 3-5** are likely to be impacted by construction and operation of the proposed transmission line project, upon receiving PUCT approval, Oncor will conduct field surveys to evaluate the presence of listed endangered or threatened plant species and rare SGCN plant species that may be present along the proposed alignment.

4.4.2 Fish and Wildlife

4.4.2.1 Terrestrial Wildlife

The primary impact of construction activities on wildlife would result from vegetation clearing and associated ground disturbances during the construction phase of the project. The impacts of transmission lines on wildlife can be divided into short- and long-term impacts. Short-term impacts result in physical disturbance usually during construction and maintenance activities. Increased noise, activity levels during construction and maintenance, dust, and emissions from combustion engines may temporarily displace wildlife along the edges of the proposed transmission line ROW. These activities could also temporarily disturb breeding, foraging, and nesting behaviors of species inhabiting the areas adjacent to the ROW; however, these effects are expected to be minimal. Although the normal behavior of many wildlife species may be temporarily altered during construction of the proposed transmission line project, permanent effects due to noise, activity levels, dust, and emissions are not expected. Long-term impacts are primarily due to habitat modification and the addition of permanent, man-made structures. In general, the primary impact of construction activities on wildlife would result from vegetation clearing and associated disturbances. The net effect on local wildlife from the short-term and long-term impacts is anticipated to be minor given the narrow footprint of transmission line corridors.

Any required clearing and other construction-related activities would directly and/or indirectly affect most animals that reside in, or pass through, the transmission line ROW. Some small, low-mobility species, including several species of amphibians, reptiles, and mammals, have the potential to be killed by heavy construction and maintenance machinery. If ROW clearing and construction occur during the breeding season, impacts may occur to the young of many species, including nestling and fledgling birds. Impacts to nesting birds may require mitigating measures to ensure compliance with the MBTA (U.S., 1918). Fossorial animals (i.e., those that live underground) such as mice, moles, and gophers may be similarly impacted as a result of soil compaction caused by heavy machinery. Larger or more mobile species such as birds, deer,

rabbits, and foxes may avoid clearing and construction activities and be temporarily displaced to adjacent areas outside of the ROW.

After construction is completed and grasses, forbs, and shrubs can recover, many forms of wildlife are anticipated to reoccupy the ROW area. Periodic vegetation maintenance within the ROW may temporarily cause some negative impacts to wildlife habitat. Maintenance clearing activities during the breeding season may destroy some nests and broods. With the increase in sunlight penetration to a previously dense shrub/tree stratum, more perennial forbs and grasses would be expected to germinate. Such edge habitats are preferred by many species, such as the eastern cottontail rabbit, white-tailed deer, and northern bobwhite quail. Species like white-tailed deer, which require open areas, as well as dense cover, may also use the ROW. Wildlife in the immediate area may experience a loss of available vegetation for foraging during construction and may be forced to move to adjacent areas to find food; however, the prevalence of similar habitats in adjacent areas and regrowth of vegetation in the ROW following construction would minimize the effects of this loss.

Transmission line structures could benefit some bird species, particularly raptors, by providing resting and hunting perches, especially in open, treeless habitats (Avian Power Line Interaction Committee [APLIC], 2006). Resident raptors within the study area, such as the American kestrel and the red-tailed hawk, often utilize the support structures as hunting or resting perches. By such benefits, transmission lines have increased raptor populations in some areas of the U.S. (APLIC, 2006). The danger of electrocution to birds would be insignificant because the distance between conductors, or between conductor and ground wire on 138 kV transmission lines, is greater than the wingspan of any bird in the area (i.e., greater than 8 feet). It is Oncor's standard practice to install devices at appropriate locations to deter bird landings on the insulator between the conductor and structure. This standard practice is consistent with agency-recognized guidelines for minimizing bird collision risks (APLIC, 2006; APLIC, 2012).

Transmission lines (both structures and wires) could present a hazard to flying birds, particularly migrants, and especially near crossings of water features. Collisions tend to increase in frequency

during the fall when migrating flocks are denser, and flight altitudes are lower in association with cold air masses, fog, or inclement weather. Studies indicate that higher rates of mortality exist during periods when poor light and weather conditions persist (Bevanger and Broseth, 2004; Electric Power Research Institute, 1993). This is important to note, given that most migratory species will continue to migrate regardless of weather conditions (Gauthreaux, 1971). Overall wire strikes are greatly reduced during bright daylight hours (Pandey et al., 2008). Species at higher risk for wire strikes are those that fly in fast-moving and/or tight flocks and larger-bodied birds with more awkward flight characteristics (Winning and Murray, 1997; Rusz et al., 1986). For resident birds and birds during periods of non-migration, those most prone to collision are often the most common raptors in a given area because of a greater number of repeated flights across power lines, particularly when in pursuit of prey (APLIC, 2006). Nevertheless, resident birds and those in an area for an extended period may learn the location of power lines and become less susceptible to wire strikes (Janss, 2000).

The proposed route crosses shrub-dominated rangeland pasture and riparian areas and therefore may potentially impact wildlife. However, these impacts are anticipated to be temporary and minimal. The greatest potential impact to wildlife from the proposed project would result from the clearing of brushland pasture habitat, from clearing the ROW within 100 feet of streams, and from clearing or crossing riparian areas and wetlands. Direct impacts to wildlife and habitat fragmentation will be greatly reduced by utilizing or paralleling existing ROW to the greatest practical extent.

4.4.2.2 Fish and Aquatic Wildlife

Potential impacts to fish and aquatic wildlife by transmission line construction activities involve mainly the effects of increased erosion and sedimentation within the Trinity River, Upper Keechi Creek, and other smaller tributaries scattered throughout the study area. Land clearing and/or construction activities may result in suspended solids entering streams traversed by the transmission line, which in turn may negatively affect many aquatic organisms that require relatively clear water for feeding and reproduction (Bonner and Wilde, 2002). The proposed

route would span Upper Keechi Creek, tributaries of Upper Keechi Creek, tributaries of the Trinity River, and other small drainages, and erosion controls would be utilized to minimize any impacts to aquatic systems, if necessary.

In evaluating impacts to aquatic systems, factors taken into consideration include the number of potential wetlands crossed, the amount of ROW within 100 feet of streams, the number of stream crossings, and the amount of open water crossed. Although streams and wetlands can usually be spanned by the transmission line, increased sedimentation and turbidity could result during rainfall events. A route parallel to and near to a stream could have a similar effect.

Vegetation clearing and building of temporary access roads during construction could result in increased sedimentation from erosion, increased suspended solids loading, or accidental petroleum spills directly into a stream. The primary aquatic ecosystems that could be directly affected by the proposed project are Upper Keechi Creek, the Trinity River, and their associated named and unnamed tributaries. Increases in siltation may impact aquatic organisms by clogging gills, smothering, and decreasing the rate of foraging success in fish species (Bonner and Wilde, 2002). Additionally, fish that require relatively clear water for feeding and reproduction may be negatively impacted. Reduced water quality due to runoff caused by direct mechanical damage from workers, equipment clearing of riparian vegetation, or siltation from erosion in newly disturbed areas can decrease the rate of photosynthesis in aquatic plants and affect dissolved oxygen levels (Kjelland et al., 2015). Particularly sensitive areas include gravelly areas, riffles, and sandy bottom habitats in the various creek drainages. The blanketing of these areas by fine sediments could eliminate habitats important for fish spawning, resident benthic invertebrates, nymphal dragonflies, mayflies and caddisflies, and freshwater mussels (Harrison et al., 2007).

These potential impacts would be largely, if not completely, avoided by appropriate construction techniques. The construction of temporary access roads and the installation of culverts would be minimized, or, if necessary, would be constructed in a manner to prevent damage or erosion to the ROW and/or adjacent property or environmentally sensitive areas such as wetlands. Oncor and its contractors would exercise care to avoid affecting aquatic life when using chemical

herbicides to control vegetation within the ROW. Herbicide use would comply with rules and guidelines established in the Federal Insecticide, Fungicide, and Rodenticide Act, and with the Texas Department of Agriculture regulations. The proposed transmission line route would cross Upper Keechi Creek, tributaries of Upper Keechi Creek, and tributaries of the Trinity River, in a perpendicular fashion such that the water bodies would be spanned. Additionally, the majority of wetland vegetation that would be crossed by the transmission line would be spanned. Minimal direct impacts to aquatic resources in the study area are anticipated. Implementation of the SWPPP, if required, would minimize potential impacts from soil erosion and siltation near aquatic habitats and wetland vegetation.

4.4.2.3 Commercially or Recreationally Important Fish and Wildlife Species

Construction of the proposed route is not anticipated to have adverse impacts on commercially or recreationally important fish and wildlife species occurring within the study area. Game and recreational species are highly mobile, and it would be anticipated that these species would leave the immediate vicinity during initial construction phases. These species may experience a loss of forage vegetation during and after construction; however, the prevalence of similar habitats in adjacent areas would minimize the effect of the loss. Additionally, much of the ROW would be available to wildlife species for forage after completion of construction-related activities.

4.4.2.4 Endangered, Threatened, and Rare Fish and Wildlife Species

According to TPWD (2024f) and USFWS (2024a), there are five federally endangered or threatened species listed for Leon and Houston Counties, including the Houston toad, piping plover, Texas fawnsfoot, red-cockaded woodpecker, and Rufa red knot, which have the potential to occur within the study area. Three federally proposed endangered or threatened species (tricolored bat, alligator snapping turtle, and Texas heelsplitter) also have potential to occur or have proposed critical habitat within the study area. Also, the federally delisted bald eagle and the federal candidate species (monarch butterfly) have the potential to occur in the study area. Eleven additional state listed threatened species (Bachman's sparrow, paddlefish, Rafinesque's big-eared bat, sandbank pocketbook, Southern hickorynut, swallow-tailed kite, Texas horned

lizard, Texas pigtoe, Trinity pigtoe, white-faced ibis, and wood stork) have the potential to occur in the study area. It is not anticipated that the proposed route will have an impact on these federally listed, proposed, or candidate threatened or endangered species.

Piping plovers and Rufa red knots are primarily coastal migrants. Preferred habitat for these species, which includes brackish bays, tidal mud flats, marshes, and dunes, are not found within the study area (USFWS, 2024a). While there is a chance that birds may use Upper Keechi Creek, the Trinity River, or their named and unnamed tributaries wet habitat or fields within the study area as a stopover on their migratory route, it is very unlikely that these species would be affected by the transmission line project. There have been no iNaturalist (2024) or eBird (2024) observations for the five federally listed species within the study area. TPWD TXNDD (2024h) shows no official observations in or near the study area. Suitable habitat for the Texas fawnsfoot was observed within the study area; however, impacts to Upper Keechi Creek and the Trinity River are not anticipated from the project, and thus no impacts to the Texas fawnsfoot are anticipated from the proposed project or proposed route. Because suitable habitat for the Houston toad, piping plover, red-cockaded woodpecker, and Rufa red knot were not observed within the study area, no impacts to these listed species are anticipated from the project or proposed route.

Bald eagles could use the Trinity River or Upper Keechi Creek within the study area for hunting purposes and potentially nest in large trees within the watershed. The TPWD TXNDD (2024h) identifies a known occurrence of a bald eagle nest within the study area. Even though the bald eagle has been delisted by the USFWS as a threatened or endangered species, bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) (U.S., 1940). As such, if a bald eagle or bald eagle nest is observed in proximity to the proposed route, coordination with the USFWS would occur to ensure impacts to the individual or nest could be avoided. It is not anticipated that the proposed route will have an impact on bald eagles.

TPWD (2024c) provided additional comment for the monarch conservation plan due to significant declines of North American migrating populations of the monarch butterfly (*Danaus plexippus*).

For disturbance within the monarch butterfly migration corridor, TPWD recommends inclusion of native milkweeds (*Asclepias spp.*) and nectar plants for revegetating the ROW, the avoidance of herbicides that affect floral resources, and the scheduling of vegetation maintenance to occur after pollinator plants have released their seeds. It is not anticipated that the proposed route will have an impact on the migration of the monarch butterfly.

TPWD (2024c) provided additional comment for the tricolored bat since Leon County is considered to be an active year-round range for the tricolored bat. TPWD recommends minimizing tree clearing and avoiding tree clearing from May 1 through July 15 (the pupping season) and from December 15 through February 1 (the winter torpor period). It is not anticipated that the proposed route will have an impact on tricolored bats.

TPWD (2024c) provided additional comment for the alligator snapping turtle because Upper Keechi Creek and the Trinity River provide suitable habitat and TPWD TXNDD (2024h) data show a known occurrence within five miles of the study area in Upper Keechi Creek. TPWD recommends scheduling any unavoidable construction of permanent or temporary crossings within suitable habitat from July through October, avoiding terrestrial construction activities near suitable habitat from May 1 through June 30, minimizing clearing of mature trees within the riparian zone, and avoiding or replacing logs, cutbanks, rootballs, or similar in-water structures within suitable habitat. It is not anticipated that the proposed route will have an impact on alligator snapping turtles.

For all listed and otherwise rare wildlife species, TPWD advised that precautions should be taken if any endangered, threatened, or rare animal species included on county rare species lists are known to occur in the study area or have been documented in the recent past (TPWD, 2024f). While none of the federal- or state-listed threatened, endangered, or candidate species or rare SGCN species listed in **Table 3-10** and **Table 3-11**, respectively, are likely to be impacted by construction and operation of the proposed transmission line project, upon receiving PUCT approval, Oncor will conduct field surveys to evaluate the presence of federal- or state-listed

threatened, endangered, candidate, or rare fish and wildlife species and preferred habitat that may be present along the proposed alignment.

4.5 SUMMARY OF NATURAL RESOURCES IMPACTS

Several natural resource areas have been evaluated to determine the relative ecological impacts of the proposed route. For this proposed project, these areas primarily included potential impacts to vegetation and wildlife. Although the proposed route has the potential for temporary or minor impact to natural resources, the proposed route for the proposed project is not anticipated to have any significant impacts to the natural resources of the area.

4.6 IMPACTS ON COMMUNITY VALUES AND COMMUNITY RESOURCES

Impacts on community resources can be classified into two areas: (1) direct effects, which are those effects that would occur if the location and construction of a transmission line results in the removal of a valued resource or loss of public access to a valued resource; and (2) indirect effects, or those effects that would result from a loss in the enjoyment or use of a resource due to the characteristics (primarily aesthetic) of the proposed transmission line, structures, or ROW.

Impacts on community resources, whether direct or indirect, can be more accurately gauged as they affect recreation areas, recreational resources, or the visual environment of an area (aesthetics). The sections that follow discuss impacts to community values and community resources.

4.7 IMPACTS ON LAND USE

Land use impacts from transmission line construction are determined by the amount of land (of whatever use) displaced by the actual ROW and by the compatibility of electric transmission line ROW with adjacent land uses. During construction, temporary impacts to land uses within the ROW could occur due to the movement of workers and materials through the area. Noise and dust from construction, as well as disruption of traffic flow, may also temporarily affect residents and businesses in the area immediately adjacent to the ROW. Coordination between Oncor, its

contractors, and landowners regarding access to the ROW and construction scheduling should minimize these disruptions. Most existing land uses may continue during construction.

The primary factors considered to measure potential land use impacts from the proposed project include overall route length, proximity to habitable structures, length parallel to existing corridors (including apparent property boundaries), and potential impacts to park/recreation areas.

4.7.1 Urban and Residential Areas

Important measures of potential land use impacts include the number and proximity of habitable structures located near the proposed route. FNI determined that no habitable structures were located within 300 feet of the centerline of the proposed route through the interpretation of aerial photography (USDA, 2022) and verification during the reconnaissance survey, where practical. The aerial photography (USDA, 2022) used to determine the distance of habitable structures within 300 feet of the centerline of the proposed route has a horizontal accuracy of approximately 20 feet. To account for this level of accuracy, FNI verified the absence of habitable structures within a measured distance of 320 feet of the proposed route centerline.

PUCT Substantive Rules Section 25.101(b)(3)(B) requires, among other things, that the PUCT consider whether a new transmission line route parallels existing compatible ROW, property lines, or other natural or cultural features along a route. The total length of the proposed route parallel to existing compatible corridors (including apparent property boundaries) is 10,605 feet, or 20.1 percent of the total route length. The length parallel to compatible corridors includes paralleling roadways, existing transmission lines, and apparent property boundaries. Given the general isolation of the study area from urban centers, the proposed project should have minimal impacts on urban or residential development.

4.7.2 Recreation Areas

As noted at the bottom of **Table 4-1**, parks and recreation areas are identified as parks and recreation areas owned by a governmental body or an organized group, club, or church. Potential

impacts to recreation areas include the disruption or preemption of recreational activities. One historic trail system, the El Camino Real De Los Tejas National Historic Trail, was identified on the NPS website (NPS, 2024). The historic trail system represents the common trade routes for the Spanish colonization of Texas and northwestern Louisiana through East Texas. The path of the historic trail system crosses the proposed route (NPS, 2024); however, no physical trail system is present within the study area, and no publicly owned lands are associated with this trail system. All properties crossed by the proposed route are privately owned. The proposed route for the proposed project is not anticipated to have any significant impacts to parks or recreation areas.

4.7.3 Agriculture

Impacts to agricultural lands can generally be ranked by degree of potential impact, with the least potential impacts occurring in areas where grazing is the primary use (pasture or rangeland) and the highest degree of potential impact occurring to cultivated cropland. The total length of the proposed route across cropland is 2,137 feet, as indicated in **Table 4-1**. The total length of the proposed route across rangeland pasture is 41,818 feet, as summarized in **Table 4-1**. Given that cropland is not a common land use for most of the study area, minimal impacts to agricultural resources are anticipated as a result of the proposed project. Since Oncor will not fence the ROW or otherwise separate the ROW from adjacent lands, existing land uses may be resumed following construction. There should be no long-term or significant displacement of farming or grazing activities. No traveling irrigation systems or other aboveground mechanical components (e.g., windmills, water troughs) were identified near the proposed route. The proposed route for the proposed project is not anticipated to have any significant impacts to agriculture in the area.

4.7.4 Industry

Impacts to oil and natural gas production were evaluated for the proposed route. Oil and natural gas production is sparse in the area with approximately 49 recorded well locations evenly distributed throughout the area (RRC, 2024b). Some large (greater than 8-inch diameter) and small (equal to or less than 8-inch diameter) pipelines are located within 300 feet of the proposed route centerline. No significant adverse impacts to oil and gas facilities from the proposed project

are anticipated. None of the proposed route is located within industrial property used for oil or natural gas production, as summarized in **Table 4-1**. The proposed route for the proposed project is not anticipated to have any significant impacts to industrial activities in the area.

4.7.5 Aesthetics

Aesthetic impacts, or impacts on visual resources, exist when the ROW, lines, and/or structures of a transmission line system create an intrusion into, or substantially alter the character of, the existing view. The significance of the impact is directly related to the quality of the view in the case of natural scenic areas. In the case of valued community resources and recreation areas, the significance of the impact is related to the importance of the existing setting in the use and/or enjoyment of an area.

Construction of the proposed project could have both temporary and permanent aesthetic effects. Temporary impacts would include views of the actual assembly and erection of the structures. Where heavily vegetated areas are cleared, the brush and debris could have an additional temporary impact on the local visual environment. Permanent aesthetic impacts from the proposed project would involve the views of the structures and lines.

To evaluate aesthetic impacts, a reconnaissance survey was conducted to determine whether the proposed project would be visible from publicly accessible areas. These areas included those of potential community value, community resources, public recreation areas, and federal and state highways that cross the study area. Measurements were made to estimate the length of the proposed route that would fall within recreation areas or major highway foreground visual zone (i.e., one-half mile, unobstructed by topography, structures, or vegetation). This determination of the visibility of the transmission line from various points was calculated from USGS topographic maps (USGS, 2022a; USGS, 2022b; USGS, 2022c) and recently flown aerial photography (USDA, 2022).

The proposed route is not within the foreground visual zone of public parks and/or recreation areas. One historic trail system, the El Camino Real De Los Tejas National Historic Trail, was identified on the NPS website (NPS, 2024). The historic trail system represents the common trade

routes for the Spanish colonization of Texas and northwestern Louisiana through East Texas. The path of the historic trail system crosses the proposed route (NPS, 2024); however, no physical trail system is present within the study area, and no publicly owned lands are associated with this trail system. All properties crossed by the proposed route are privately owned. The proposed route for the proposed project is not anticipated to have any significant impacts to parks or recreation areas.

The length of the proposed route parallel to, and thus within the one-half mile foreground visual zone of SH 7, a TxDOT-maintained roadway, is 4,963 feet, as identified in **Table 4-1**. No other potential aesthetic impacts were identified during FNI's evaluation.

4.7.6 Transportation and Aviation

Potential impacts to transportation could include temporary disruption of traffic and conflicts with proposed roadway and/or utility improvements and may include slightly increased traffic during construction of the proposed project. However, such impacts are usually temporary and short-term.

Typical transmission line structure heights would be approximately 90 to 120 feet above ground surface, depending on the terrain, as described in **Section 1.3.1**. According to FAA Regulations (14 Code of Federal Regulations (CFR) Part 77), notification of the construction of the proposed project is required if structure heights exceed the height of an imaginary surface extending outward and upward at a slope of: 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of a public or military airport having at least one runway longer than 3,200 feet in length; 50 to 1 for a horizontal distance of 10,000 feet from the nearest runway of a public or military airport where all runways are less than 3,200 feet in length; or 25 to 1 for a horizontal distance of 5,000 feet for heliports.

FNI's review of federal and state aviation/airport maps and directories, aerial photography (USDA, 2022) interpretation, and a reconnaissance survey identified no FAA-registered public or military facilities within the FAA criteria, including: no FAA-registered public or military airport with a runway greater than 3,200 feet in length within 20,000 feet of the proposed route; no

FAA-registered public or military airport with a runway less than 3,200 feet in length within 10,000 feet of the proposed route; no private airstrip within 10,000 feet of the proposed route; and no heliport within 5,000 feet of the proposed route. The nearest aviation facility, W C Ranch Airport, is a private airfield located approximately 30,000 feet (5.6 miles) to the northeast of the study area. No impacts to aviation facilities are anticipated as a result of the proposed project.

4.7.7 Communication Towers

No communication towers are located within the study area, and therefore, the proposed project is not within 2,000 feet of communication tower. No commercial AM radio transmitters were identified within the study area, and therefore, the proposed project is not located within 10,000 feet of any AM radio transmitter. No FM radio transmitters were identified in the study area, and therefore, the proposed project is not within 2,000 feet of any FM radio transmitter. No impacts to communications signals are anticipated as a result of the proposed project.

4.8 IMPACTS ON CULTURAL RESOURCES

Construction activities associated with the proposed project have the potential to adversely impact cultural resources through changes in the quality of the archeological, historical, or cultural characteristics that qualify a property to meet the criteria of eligibility of the NRHP. These impacts occur when an undertaking alters the integrity of location, design, setting, materials, construction, or association that contribute to a resource's significance in accordance with the NRHP criteria.

As discussed in 36 CFR Part 800, adverse impacts on the NRHP or eligible properties may occur under conditions that include, but are not limited to, destruction or alteration of all or part of a property, isolation from or alteration of the property's surrounding environment (setting), or introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.

Impacts may be direct or indirect. Direct impacts typically occur during construction. Indirect impacts include those caused by construction that occur later in time or are farther removed but

are foreseeable. These impacts may include alterations in the pattern of land use, changes in population density, or accelerated growth rates, all of which may have an impact on properties with historical, architectural, archeological, or cultural significance.

The preferred form of mitigation for direct or indirect impacts on cultural resources is avoidance. An alternative form of mitigation of direct impacts can be developed for archeological and historical sites with the implementation of a program of detailed data retrieval. Additionally, relocation may be possible for some historic structures. Indirect impacts on historical properties and landscapes can be lessened through careful design considerations and landscaping.

One of the methods utilized to assess an area for potential prehistoric cultural resources is the identification of High Probability Areas (HPAs). Locations that are usually identified as HPAs for the occurrence of prehistoric sites include water crossings, stream confluences, drainages, alluvial terraces, wide floodplains, upland knolls, and other areas where lithic resources could be found. When defining HPAs, a distance relationship to a water resource (about 1,000 feet) is set that would encompass landforms that may have attracted past human activity and are therefore deemed appropriate for the presence of cultural resource sites.

As a formal cultural resources survey has not been conducted for the proposed route, the possibility of affecting unknown archeological sites exists. Correspondence from the THC indicated that the entirety of the study area has never been formally surveyed for archeological resources, and no known historic resources have been documented within the study area (THC, 2024a). The THC further indicates that the study area is near "natural perennial water sources and previously recorded archeological resources" (THC, 2024a).

4.8.1 Historical Summary

There are no historic sites that have been recorded in the NRHP for Leon or Houston Counties (THC, 2024b). Correspondence from the THC indicated that no known historic resources have been documented within the study area (THC, 2024a). One previously surveyed historic site, which was not listed in the NRHP, is located within the banks of the Trinity River and is not crossed by the proposed route.

Of the two historical cemeteries identified within the study area (THC, 2024b), one cemetery, Mount Pilgrim Cemetery, was identified within 1,000 feet of the proposed route centerline. The Mount Pilgrim Cemetery is located 850 feet to the northwest from the proposed route centerline at the proposed project endpoint (the proposed Leon Solar POI). No OTHMs were identified within 1,000 feet of the proposed route centerline (THC, 2024b). Given the small footprint of the proposed transmission line structures along the proposed route, it is anticipated that the proposed project will have minimal impacts on historical resources.

4.8.2 Archeological Summary

Three previously recorded archeological sites were identified within the study area. One of the previously recorded archeological sites was identified within 1,000 feet of the proposed transmission line route. The archeological site (identified as Site 41LN10) is located approximately 300 feet to the east of the proposed route centerline. Consequently, the proposed route centerline was reviewed for its proximity to HPAs. HPAs typically consist of areas that contain deep soils and lie within nearly 1,000 feet of natural water sources. The majority of the study area contains deep soils. The proposed transmission route crosses multiple surface water features and is near the Trinity River. Cemeteries and previously recorded archeological and historic sites occur within the study area. Therefore, the study area contains HPAs for the occurrence of cultural resource sites. The total length of the proposed route where it crosses HPAs is approximately 46,202 feet, as summarized in **Table 4-1**. Given the small footprint of the proposed transmission line structures along the proposed route, it is anticipated that the proposed project will have minimal impacts on cultural resources.

In a response letter received from the THC (2024a), the THC required an archeological survey. A cultural resources survey will be conducted in accordance with the pre-approved research design developed by Oncor and THC for new transmission line studies before construction begins on this proposed project. Any cultural resources discovered during this initial survey will be mitigated in consultation with the THC, as appropriate. In the event Oncor or its contractors encounter any archeological artifacts or other cultural resources during construction of the proposed project,

Oncor will cease work in the immediate vicinity of the resource and report the discovery to the THC. However, it is anticipated that the proposed project will have no substantial impacts on cultural resources.

Table 4-1: Environmental Data for Route Evaluation

	Proposed Route
Length of proposed route (feet)	52,800
Length of proposed route (miles)	10
Length of route parallel to existing transmission lines	0
Length of route parallel to railroads	0
Length of route parallel to existing public roads/highways	675
Length of route parallel to pipelines[1]	420
Length of route parallel to apparent property boundaries	10,605
Total length of route parallel to existing compatible rights-of-way	10,605
Number of habitable structures within 300 feet of the route centerline[2]	0
Number of parks or recreation areas within 1,000 feet of the route centerline	0
Length of the route across parks/recreation areas[3]	0
Length of route through commercial/industrial areas (oil and natural gas sites)	0
Length of the route across cropland/hay meadow	2,137
Length across rangeland pasture (including herbaceous floodplain and mixedgrass prairie)	41,818
Length of route across agricultural cropland with mobile irrigation systems	0
Length of route across upland woodlands	0
Length of route across potential riparian woodlands and emergent wetlands	3,517
Number of stream crossings by the route	9
Length of route parallel to streams (within 100 feet)	896
Length across lakes or ponds (open waters)	6
Number of known rare/unique plant locations within the ROW	0
Length of route through known habitat of endangered or threatened species[4]	0
Number of recorded cultural resource sites crossed by the route[5]	0
Number of recorded cultural resource sites within 1,000 feet of the route centerline[5]	2
Length of route across areas of high archeological/historical site potential	46,202
Number of private airstrips within 10,000 feet of the route centerline	0
Number of FAA-registered airports with at least one runway more than 3,200 feet in length within 20,000 feet of route centerline	0
Number of FAA-registered airports with no runway greater than 3,200 feet in length within 10,000 feet of the route centerline	0
Number of heliports located within 5,000 feet of the route centerline	0
Number of commercial AM radio transmitters located within 10,000 feet of the route centerline	0
Number of FM radio, microwave, and other electronic installations within 2,000 feet of the route centerline	0
Number of U.S. or State Highway crossings by the route	0
Number of Farm-to-Market, county roads, or other street crossings by the route	2
Estimated length of ROW within foreground visual zone of U.S. and State Highways	4,963
Estimated length of ROW within foreground visual zone of park/recreation areas	0

Note: All length measurements are provided in feet, unless otherwise stated. All linear measurements were obtained from Texas National Agriculture Imagery Program ortho imagery flown in 2022 (USDA, 2022). The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 6 meters or approximately +/- 20 feet.

[1] Not included in length of route parallel to existing compatible rights-of-way.
[2] Structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools.
[3] Defined as parks and recreation areas owned by a governmental body or an organized group, club, or church.
[4] Defined as USFWS critical habitat.
[5] Recorded cultural resource sites are defined as those sites recognized and recorded by the THC (e.g., historical cemetery or recorded archeological site).

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5.0 LIST OF PREPARERS

FNI prepared this Environmental Assessment for Oncor for the proposed project. **Table 5-1** provides a list of the project team members with primary responsibilities for the preparation of this document.

Table 5-1: List of Preparers

Role	Name	Title
Project Manager	Kimberly Buckley, PG	Environmental Scientist Principal/Vice President
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APPENDIX A
AGENCY CORRESPONDENCE

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APPENDIX A. AGENCY CORRESPONDENCE

U.S. Department of Agriculture Natural Resources Conservation Service

U.S. Department of Defense Military Aviation and Installation Assurance Siting Clearinghouse

U.S. Fish and Wildlife Service

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October 17, 2024

Contact Name
Title
Name of Organization
Street Address
City, State Zip

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Mr./Ms. Contact Name:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

Freese and Nichols, Inc. is preparing an Environmental Assessment (EA) for a single proposed route to support an application for a Certificate of Convenience and Necessity (CCN) from the Public Utility Commission of Texas (PUCT). Freese and Nichols is currently in the process of gathering data on the existing environment and identifying environmental land use constraints within the project study area that will be used in the creation of an environmental and land use constraints map.

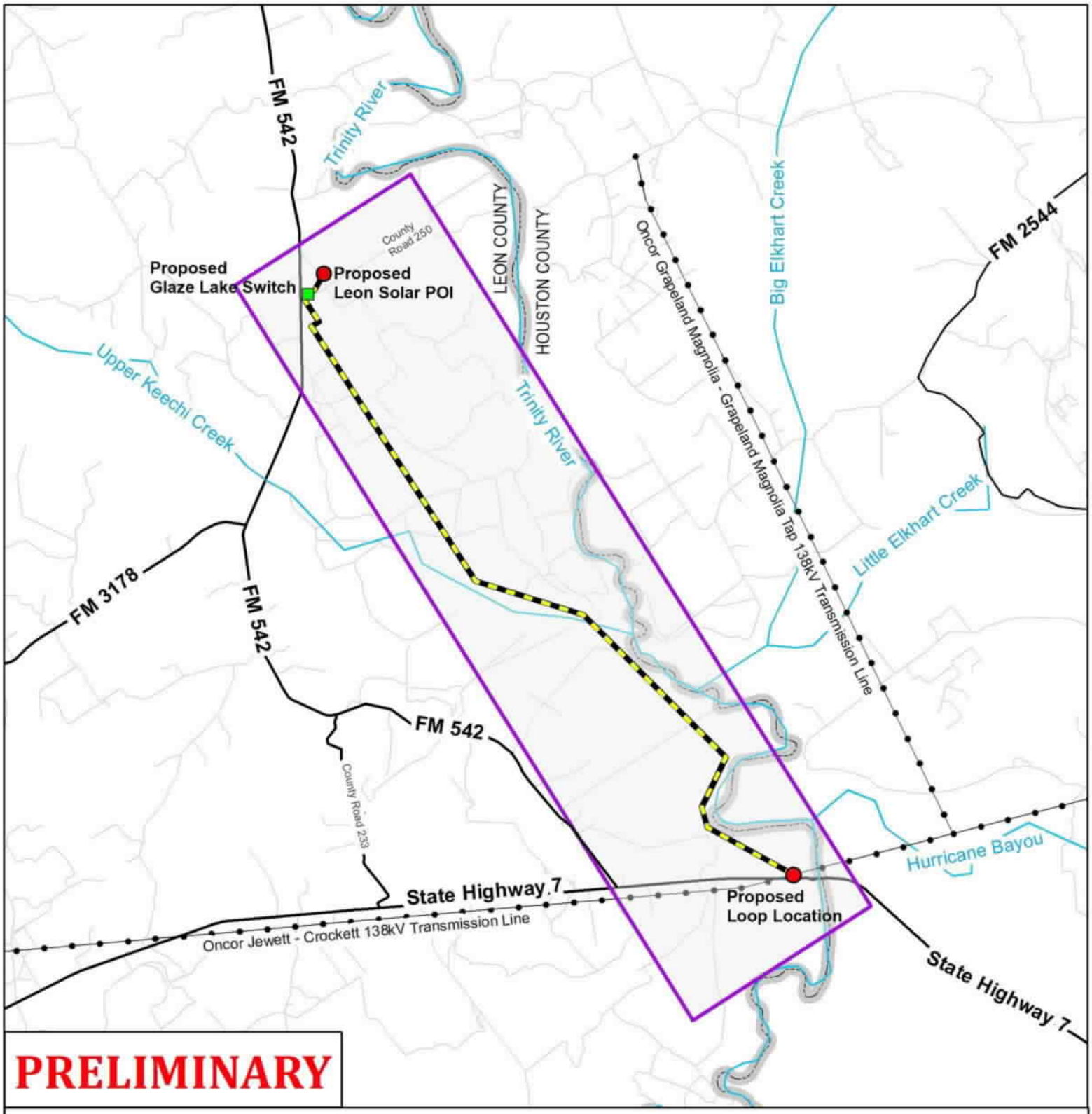
Freese and Nichols is requesting that your office provide environmental and land use constraints information regarding existing or planned land development projects, county projects, or other areas of interest to Name of Organization within the project study area. Your comments will be an important consideration in the assessment of impacts. Upon certification for the proposed project, Oncor will determine the need for other approvals and/or permits. If your jurisdiction has approvals and/or permits that would apply to this project, please identify them in response to this inquiry. If permits are required from your office, Oncor will contact your office following route certification.

Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley
Project Manager

Attachment



PRELIMINARY

GLAZE LAKE SWITCH 138kV LOOP TRANSMISSION LINE PROJECT

ONCOR

FREESE AND NICHOLS

0 0.5 1 2 Miles

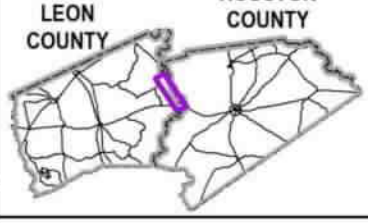
Note:
Data is for display purposes only. All features and boundaries have been approximated from public resources.

N W E S

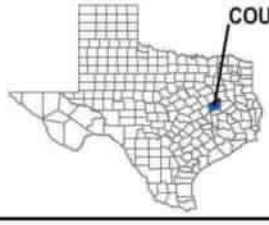
Legend

- Proposed End Points
- Proposed Glaze Lake Switch
- Proposed Transmission Line
- Study Area
- Existing Transmission Line
- Major Roads
- Minor Roads
- County Line
- Major Rivers and Creeks

Extent Map



Vicinity Map



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October 17, 2024

Michael Parks
Executive Director
Brazos Valley Council of Governments
PO Drawer 4128
Bryan, Texas 77805

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Executive Director Parks:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

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Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley
Project Manager

Attachment

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October 17, 2024

Jan Morris
Deputy Director
Brazos Valley Council of Governments
PO Drawer 4128
Bryan, Texas 77805

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Deputy Director Morris:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

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Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley
Project Manager

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October 17, 2024

Roger Sheridan
Deputy Director
Brazos Valley Council of Governments
PO Drawer 4128
Bryan, Texas 77805

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Deputy Director Sheridan:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

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Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley
Project Manager

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October 17, 2024

The Honorable Lonnie Hunt
Executive Director
Deep East Texas Council of Governments
1405 Kurth Drive
Lufkin, Texas 75904

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Executive Director Hunt:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

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Freese and Nichols is requesting that your office provide environmental and land use constraints information regarding existing or planned land development projects, county projects, or other areas of interest to the Deep East Texas Council of Governments within the project study area. Your comments will be an important consideration in the assessment of impacts. Upon certification for the proposed project, Oncor will determine the need for other approvals and/or permits. If your jurisdiction has approvals and/or permits that would apply to this project, please identify them in response to this inquiry. If permits are required from your office, Oncor will contact your office following route certification.

Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley

Kimberly Buckley
Project Manager

Attachment

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October 17, 2024

Lacy Sargent
Executive Assistant
Deep East Texas Council of Governments
1405 Kurth Drive
Lufkin, Texas 75904

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Executive Assistant Sargent:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

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Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley

Kimberly Buckley
Project Manager

Attachment

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October 17, 2024

Tony Bryant
Manager (Acting)
FAA Southwest Region
10101 Hillwood Parkway
Fort Worth, Texas 76177

Re: Oncor Electric Delivery Company Proposed Glaze Lake Switch 138kV Loop Transmission Line Project
Leon County, Texas

Dear Acting Manager Bryant:

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 138 kilovolt (kV) transmission line in Leon County from a proposed loop location along Oncor's existing Jewett – Crockett 138kV Transmission Line and through the proposed Glaze Lake Switch, to serve a customer's facilities at the proposed Leon Solar Point of Interconnection (POI). The proposed loop location is located along Oncor's existing Jewett – Crockett 138kV Transmission Line approximately 2.1 miles east of the intersection of State Highway (SH) 7 and Farm to Market Road (FM) 542. The proposed Glaze Lake Switch is located approximately 0.13 miles northeast of the intersection of FM 542 and County Road 250. The proposed Leon Solar POI is located approximately 0.4 miles northeast of the proposed Glaze Lake Switch. Please refer to the attached map depicting these project locations and study area.

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Freese and Nichols is requesting that your office provide environmental and land use constraints information regarding existing or planned land development projects, county projects, or other areas of interest to FAA Southwest Region within the project study area. Your comments will be an important consideration in the assessment of impacts. Upon certification for the proposed project, Oncor will determine the need for other approvals and/or permits. If your jurisdiction has approvals and/or permits that would apply to this project, please identify them in response to this inquiry. If permits are required from your office, Oncor will contact your office following route certification.

Thank you for your assistance with this transmission line project. If you have any questions or require additional information, please contact me at (817) 735-7332 or kmb@freese.com. Your earliest reply is appreciated.

Sincerely,
FREESE AND NICHOLS, INC.

Kimberly Buckley
Project Manager

Attachment