

**SPECIES ANALYSIS SPREADSHEET: Project Information Sheet**

<b>Project Name:</b>	Glade Road
<b>CSJ(s):</b>	0902-90-117, 0902-90-061
<b>TxDOT District:</b> (Click dropdown arrow to select a District from List)	Fort_Worth
<b>County(ies):</b> (Click dropdown arrow to select each county)	Tarrant
<b>Prepared by:</b> (Full Name)	Clint Wardlow and Ryan Blankenship; Cox McLain Environmental Consulting, Inc.
<b>Date Completed:</b> (m/d/yyyy)	12/1/2020

*TxDOT ENV Spreadsheet Template date: October 8, 2020.*

**DRAFT**

**SPECIES ANALYSIS SUMMARY**  
**Project Name: Glade Road**  
**CSJ(s): 0902-90-117, 0902-90-061**

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/Absence survey conducted?
Tarrant	Birds	Black Rail	<i>Laterallus jamaicensis</i>	Black rails are year-round residents of the central and upper coast and migrants in the eastern part of the state. The species nests in salt, brackish, and freshwater marshes, pond borders, wet meadows, and wetlands with hydrophytic grass species. Water depth is an important and key habitat component, as the species typically is found where water is less than two to four centimeters deep. Other significant habitat factors may include vegetation density, distance to open water, and water regime stability. Nesting typically occurs in the highest sections of the marsh, which have mesic to hydric soils and are flooded by only the highest tides. Nests are built in areas with saturated or shallowly flooded soils and dense vegetation on damp ground, on mat of previous year's dead grasses, or over shallow water. In salt or brackish marshes, typical habitat includes dense stands of cordgrasses ( <i>Spartina</i> sp.), spikegrasses ( <i>Distichlis</i> sp.), and needlerush ( <i>Juncus</i> sp.), or, in more upland saltbush communities along marsh edges. Typical freshwater habitat includes species such as cattail ( <i>Typha</i> ) and bulrush ( <i>Scirpus</i> sp.). Non-breeding habitat is thought to be similar to breeding habitat.	N	No salt, brackish, or freshwater marshes, pond borders, wet meadows, or wetlands with hydrophytic grass species occur within the project area.	T	No effect	T	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Birds	Least Tern - Migratory	<i>Sternula (=Sterna) antillarum</i>	The interior population (subspecies <i>athalassos</i> ) of the Least Tern nests on bare or sparsely vegetated sand, shell, and gravel beaches, sandbars, islands, and salt flats associated with inland rivers and reservoirs. It occasionally nests on man-made structures such as sand and gravel pits or gravel rooftops. Preferred habitat includes sand and gravel bars within a wide unobstructed river channel, or open flats along shorelines of lakes and reservoirs. Colony sites can move annually, depending on landscape disturbance and vegetation growth at established colonies. It is known to nest at three reservoirs along the Rio Grande River, on the Canadian River in the northern Panhandle, and along the Red River.	N/A	The list of federally threatened and endangered species indicates that based on the project location within the migratory route, effects to Least Tern only need be considered for wind energy projects. The project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Least Tern is not expected to regularly occur and any use of this habitat would be incidental.	E	No effect	E	No impact	The project is not a wind energy project within the migratory route and does not contain suitable breeding and wintering habitat for the Least Tern.	N

**SPECIES ANALYSIS SUMMARY**  
**Project Name: Glade Road**  
**CSJ(s): 0902-90-117, 0902-90-061**

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

**SPECIES ANALYSIS SUMMARY**  
**Project Name: Glade Road**  
**CSJ(s): 0902-90-117, 0902-90-061**

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/Absence survey conducted?
Tarrant	Birds	White-faced Ibis	<i>Plegadis chihi</i>	The species is found in the Western Gulf Coastal Plains ecoregion of Texas. Preferred habitat includes freshwater wetlands, marshes, ponds, rivers, irrigated land, and sloughs, but it occasionally forages in brackish or saltwater marshes. It nests in marshes in low trees, on the ground in bulrushes ( <i>Scirpus</i> sp.) or reeds, or on floating mats.	N	The project area is not located within the Gulf Coastal Plains ecoregion of Texas. No marshes, ponds, irrigated land, sloughs, or brackish or saltwater marshes occur within the project area. Although two small freshwater wetlands occur within the project area, they are too small for this species to utilize.	—	N/A	T	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Birds	Whooping Crane	<i>Grus americana</i>	The species breeds in Canada and winters on the Texas coast at Aransas National Wildlife Refuge. During migration it typically stops to rest and feed in open bottomlands of large rivers and marshes but, like other waterbirds, it may also utilize flooded croplands, playas, large wetlands associated with lakes, small ponds, and various other aquatic features. Typical migration habitat includes sites with good horizontal visibility, water depth of 30 centimeters or less, and minimum wetland size of 0.04 hectare for roosting.	N	No large open bottomlands, flooded croplands, playas, or large wetlands occur within the project area.	E	No effect	E	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Mammals	Black Bear	<i>Ursus americanus</i>	Once widespread throughout the state, both subspecies of American black bear ( <i>Ursus americanus eremicus</i> and <i>U. a. amblyceps</i> ) have been restricted to west Texas, primarily in or near the larger mountain ranges such as the Chisos and Guadalupe Mountains, but occasionally in the Edwards Plateau region. Preferred habitat consists of desert scrub, chaparral, and juniper-oak or pinyon-oak woodlands. Optimal brushy and forest habitats consist of moderate to high density and canopy cover, high species diversity, rugged topography, and low human population.	N	The project area is surrounded by areas of high human population, and no desert scrub, chaparral or pinyon-oak woodlands occur within the project area. Although oak-juniper woodlands occur within the project area, these are too small in size to be suitable habitat for this species.	—	N/A	T	No impact	No suitable habitat occurs within the project area.	N

**SPECIES ANALYSIS SUMMARY**  
**Project Name: Glade Road**  
**CSJ(s): 0902-90-117, 0902-90-061**

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/Absence survey conducted?
Tarrant	Mollusks	Louisiana Pigtoe	<i>Pleurobema riddellii</i>	Freshwater mussel currently found in the Sabine, Neches, and Trinity River basins in Texas. The species occurs in streams to medium-sized rivers with moderate flow. In Texas, the species has only been documented occurring in relatively shallow lotic waters with preferable substrate being sand and sand with gravel and silt. It is not generally known to tolerate impoundments.	Y	Perennial water bodies within the Trinity River Basin with mud and sand bottoms occur within the project area.	—	N/A	T	No impact	Although suitable habitat occurs within the project area, a presence/absence survey was conducted in October 2020. No individuals of this species were collected or relocated from the survey area.	Y
Tarrant	Mollusks	Sandbank Pocketbook	<i>Lampsilis satura</i>	A freshwater mussel that is currently limited to the Upper Trinity, Neches, Sabine, and San Jacinto River basins in Texas. The species occurs in flowing small to large rivers with gravel, gravel-sand, and sand substrates. It has been observed in littoral areas with snags, gravel, or sand substrate with slow to moderate currents, as well as lotic waters in substrates of sand, silty sand, and sand and clay mixture.	Y	Perennial water bodies within the Trinity River Basin with mud and sand bottoms occur within the project area.	—	N/A	T	No impact	Although suitable habitat occurs within the project area, a presence/absence survey was conducted in October 2020. No individuals of this species were collected or relocated from the survey area.	Y
Tarrant	Mollusks	Texas Heelsplitter	<i>Potamilus ampichaenus</i>	A freshwater mussel currently known from the Trinity, Neches, and Sabine River basins. The species occurs in small streams to medium rivers with sand or mud substrate. It is found in flowing water but not in riffles or shoals. It prefers quiet waters and can be found in reservoirs.	Y	Perennial water bodies within the Trinity River Basin with mud and sand bottoms occur within the project area.	—	N/A	T	No impact	Although suitable habitat occurs within the project area, a presence/absence survey was conducted in October 2020. No individuals of this species were collected or relocated from the survey area.	Y
Tarrant	Reptiles	Alligator Snapping Turtle	<i>Macrochelys temminckii</i>	Occurs in East Texas where it inhabits perennial water bodies such as the deep water of rivers, canals, lakes, and oxbows, along with swamps, bayous, and ponds near deep running water. Preferred habitat is usually in water with a mud bottom and abundant aquatic vegetation, but the species may use sand-bottomed creeks.	Y	Perennial water bodies with mud and sand bottoms and aquatic vegetation occur within the project area.	—	N/A	T	May impact	Suitable habitat occurs within the project area.	N

**SPECIES ANALYSIS SUMMARY**  
**Project Name: Glade Road**  
**CSJ(s): 0902-90-117, 0902-90-061**

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Federal Status	Effect/Take Determination for Federally Listed Species	State Status	Impact Determination for State-Listed Species	Explanation for Effect/Take and/or Impact Determination	Presence/Absence survey conducted?
Tarrant	Reptiles	Texas Horned Lizard	<i>Phrynosoma cornutum</i>	The species is found in semi-arid open areas with scattered vegetation comprised of bunchgrass, cacti, yucca, mesquite, acacia, juniper, or other woody shrubs and small trees commonly found in loose sandy or loamy soils.	N	No semi-arid open areas with scattered vegetation composed of bunchgrass, cacti, yucca, mesquite, acacia, or juniper occur within the project area. Additionally no red harvested ants (the species' preferred food source) were observed within the project area.	—	N/A	T	No impact	No suitable habitat occurs within the project area.	N

**DRAFT**

SPECIES ANALYSIS SUMMARY (SGCN)

Project Name: Glade Road

CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Amphibians	Strecker's chorus frog	<i>Pseudacris streckeri</i>	Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.	Y	Wooded floodplains occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Amphibians	Woodhouse's toad	<i>Anaxyrus woodhousii</i>	Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.	Y	Floodplain forests and grasslands occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Birds	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds.	N	The project area is not located near large rivers or lakes.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Birds	Franklin's gull	<i>Leucophaeus pipixcan</i>	This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.	N	The project area is not located near the Gulf coast. No lake shores or islands occur within the project area. Although wetlands occur within the project area, they are too small to be considered suitable habitat for this species.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Birds	Mountain Plover	<i>Charadrius montanus</i>	Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous.	N	No high plains, shortgrass prairie, shortgrass plains, or dirt plowed fields occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Birds	Western Burrowing Owl	<i>Athene cunicularia hypugaea</i>	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows.	Y	Open grasslands and abandoned burrows occur within the project area.	No impact	Although suitable habitat occurs within the project area, the habitat is restricted to small slivers of grassland that are artificially created/associated with natural gas pipeline easements that are maintained and free of woody debris. The species is highly unlikely to use these areas as habitat.	N
Tarrant	Insects	American bumblebee	<i>Bombus pensylvanicus</i>	Habitat description is not available at this time.	N	A habitat determination cannot be made due to no habitat description being available at the time of this evaluation.	No impact	An impact determination cannot be made due to no habitat description being available at the time of this evaluation.	N
Tarrant	Insects	Comanche harvester ant	<i>Pogonomyrmex comanche</i>	Habitat description is not available at this time.	N	A habitat determination cannot be made due to no habitat description being available at the time of this evaluation.	No impact	An impact determination cannot be made due to no habitat description being available at the time of this evaluation.	N

SPECIES ANALYSIS SUMMARY (SGCN)

Project Name: Glade Road

CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Mammals	American badger	<i>Taxidea taxus</i>	Generalist. Prefers areas with soft soils that sustain ground squirrels for food. When inactive, occupies underground burrow. Young are born in underground burrows.	Y	Mammal burrows and soft soils were observed within the project area.	No impact	Although suitable habitat occurs within the project area, the habitat is restricted to small slivers of grassland that are artificially created/associated with natural gas pipeline easements that are maintained and free of woody debris. The species are highly unlikely to use these areas as habitat.	N
Tarrant	Mammals	big brown bat	<i>Eptesicus fuscus</i>	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.	Y	Wooded and riparian areas occur within the project area. The bridge located at Big Bear Creek provides potentially suitable summer roosting and winter hibernacula for the species since it contains vertical cracks, crevices, and expansion joints. The bridge class culverts located at the unnamed tributary to Big Bear Creek do not provide suitable summer roosting and winter hibernacula for the species since they do not contain vertical cracks, crevices, or expansion joints and are too short to maintain thermal properties necessary for roosting bats.	May impact	Suitable habitat occurs within the project area.	N

DRAFT

SPECIES ANALYSIS SUMMARY (SGCN)

Project Name: Glade Road

CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Mammals	big free-tailed bat	<i>Nyctinomops macrotis</i>	Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore.	Y	The bridge located at Big Bear Creek provides potentially suitable summer roosting and winter hibernacula for the species since it contains vertical cracks, crevices, and expansion joints. The bridge class culverts located at the unnamed tributary to Big Bear Creek do not provide suitable summer roosting and winter hibernacula for the species since they do not contain vertical cracks, crevices, or expansion joints and are too short to maintain thermal properties necessary for roosting bats.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	black-tailed prairie dog	<i>Cynomys ludovicianus</i>	Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups.	N	No flat, short grasslands with sparse vegetation of sufficient size to be considered suitable habitat occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Mammals	cave myotis bat	<i>Myotis velifer</i>	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow ( <i>Hirundo pyrrhonota</i> ) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.	Y	Wooded and riparian areas occur within the project area. The bridge located at Big Bear Creek provides potentially suitable summer roosting and winter hibernacula for the species since it contains vertical cracks, crevices, and expansion joints. The bridge class culverts located at the unnamed tributary to Big Bear Creek do not provide suitable summer roosting and winter hibernacula for the species since they do not contain vertical cracks, crevices, or expansion joints and are too short to maintain thermal properties necessary for roosting bats.	May impact	Suitable habitat occurs within the project area.	N

Prepared Date: 12/1/2020

## SPECIES ANALYSIS SUMMARY (SGCN)

Project Name: Glade Road

CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Mammals	eastern spotted skunk	<i>Spilogale putorius</i>	Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges and woodlands. Prefer wooded, brushy areas and tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.	Y	Woodlands, fence rows, and wooded, brushy areas occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	long-tailed weasel	<i>Mustela frenata</i>	Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.	Y	Fence rows, upland woods and forest edges occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.	Y	Floodplain forests and wooded areas occur within the project area. The bridge located at Big Bear Creek provides potentially suitable summer roosting and winter hibernacula for the species since it contains vertical cracks, crevices, and expansion joints. The bridge class culverts located at the unnamed tributary to Big Bear Creek do not provide suitable summer roosting and winter hibernacula for the species since they do not contain vertical cracks, crevices, or expansion joints and are too short to maintain thermal properties necessary for roosting bats.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	mink	<i>Neovison vison</i>	Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.	Y	Wooded riparian zones and a floodplain occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	mountain lion	<i>Puma concolor</i>	Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains and riparian zones.	N	No rugged mountains occur within the project area. Although riparian zones occur within the project area, they are surrounded by dense human populations and infrastructure.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Mammals	southern short-tailed shrew	<i>Blarina carolinensis</i>	Found in East Texas pine forests and agricultural land. May favor areas with abundant leaf litter and fallen logs (Baumgardner et al. 1992). Nest sites are probably under logs, stumps and other debris.	N	No East Texas pine forests or agricultural land occurs within the project area.	No impact	No suitable habitat occurs within the project area.	N

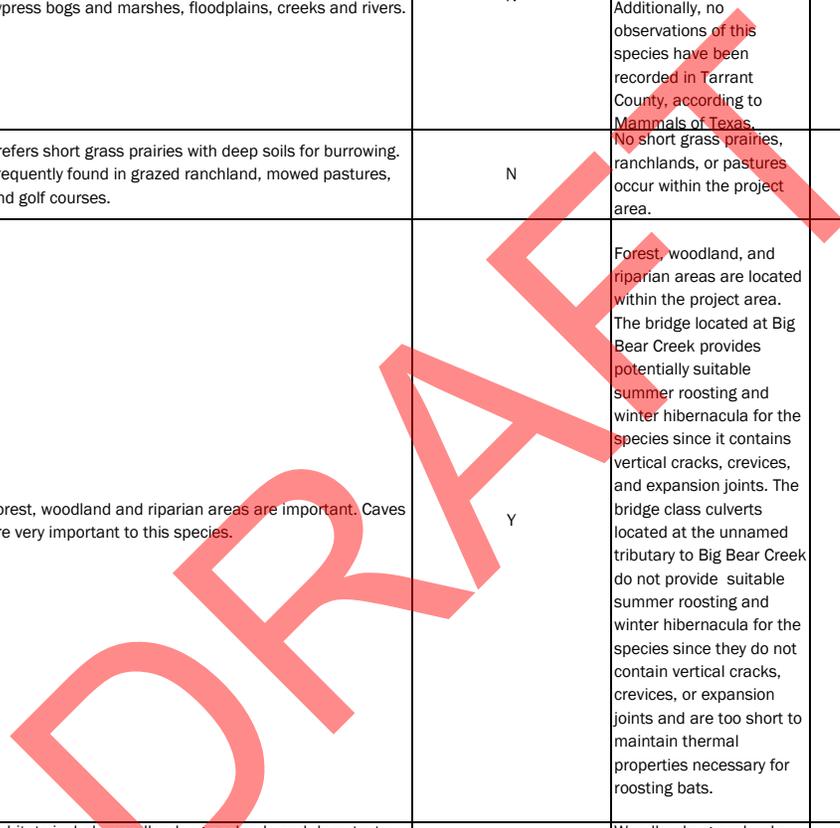
Prepared Date: 12/1/2020

SPECIES ANALYSIS SUMMARY (SGCN)

Project Name: Glade Road

CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Mammals	swamp rabbit	<i>Sylvilagus aquaticus</i>	Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.	N	Although lowlands near water, floodplains and creeks occur within the project area, no marshy, flooded areas occur within the project area. Additionally, no observations of this species have been recorded in Tarrant County, according to Mammals of Texas.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Mammals	thirteen-lined ground squirrel	<i>Ictidomys tridecemlineatus</i>	Prefers short grass prairies with deep soils for burrowing. Frequently found in grazed rangeland, mowed pastures, and golf courses.	N	No short grass prairies, rangelands, or pastures occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Mammals	tricolored bat	<i>Perimyotis subflavus</i>	Forest, woodland and riparian areas are important. Caves are very important to this species.	Y	Forest, woodland, and riparian areas are located within the project area. The bridge located at Big Bear Creek provides potentially suitable summer roosting and winter hibernacula for the species since it contains vertical cracks, crevices, and expansion joints. The bridge class culverts located at the unnamed tributary to Big Bear Creek do not provide suitable summer roosting and winter hibernacula for the species since they do not contain vertical cracks, crevices, or expansion joints and are too short to maintain thermal properties necessary for roosting bats.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	western hog-nosed skunk	<i>Conepatus leuconotus</i>	Habitats include woodlands, grasslands and deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. <i>Telmalestes</i>	Y	Woodlands, grasslands and wooded, brushy areas occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Mammals	woodland vole	<i>Microtus pinetorum</i>	Include grassy marshes, swamp edges, old-field/pine woodland ecotones, tallgrass fields; generally sandy soils.	N	No grassy marshes, swamp edges, old field/pine woodland ecotones, or tallgrass fields occur within the project area.	No impact	No suitable habitat occurs within the project area.	N



SPECIES ANALYSIS SUMMARY (SGCN)  
 Project Name: Glade Road  
 CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Reptiles	eastern box turtle	<i>Terrapene carolina</i>	Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.	Y	Forests and forest-open area ecotones occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Reptiles	massasauga	<i>Sistrurus tergeminus</i>	Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.	N	No shortgrass prairies, mixed grass prairies, or draws/floodplains in arid landscapes occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Reptiles	slender glass lizard	<i>Ophisaurus attenuatus</i>	Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.	Y	Open grasslands, woodlands, woodland edges, and areas near streams occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Reptiles	smooth softshell	<i>Apalone mutica</i>	Aquatic: Large rivers and streams; in some areas also found in lakes and impoundments (Ernst and Barbour 1972). Usually in water with sandy or mud bottom and few aquatic plants. Often basks on sand bars and mudflats at edge of water. Eggs are laid in nests dug in high open sandbars and banks close to water, usually within 90 m of water (Fitch and Plummer 1975).	Y	Large streams with sandy and mud bottoms and aquatic vegetation occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Reptiles	Texas garter snake	<i>Thamnophis sirtalis annectens</i>	Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams or marshes. Damp soils and debris for cover are thought to be critical.	Y	Streams, damp soils and debris for cover occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Reptiles	timber (canebrake) rattlesnake	<i>Crotalus horridus</i>	Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.	Y	Floodplains, deciduous woodlands, and riparian zones with dense ground cover occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Reptiles	western box turtle	<i>Terrapene ornata</i>	Terrestrial: Ornate or western box turtles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.	Y	Open woodlands, slow, shallow streams, and mammal burrows occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Plants	earleaf false foxglove	<i>Agalinis auriculata</i>	Known in Texas from one late nineteenth century specimen record labeled -Benbrook-; in Oklahoma, degraded prairies, floodplains, fallow fields, and borders of upland sterile woods; in Arkansas, blackland prairie; Annual; Flowering August - October	Y	Floodplains, borders of upland woods, and blackland prairie occur within the project area. Additionally, the species has been vouchered in Tarrant County, according to the USDA NRCS.	No impact	Although suitable habitat may be present, field investigations of the entire project area were conducted during flowering season (September 2020) and no observations of the species were made.	N
Tarrant	Plants	Engelmann's bladderpod	<i>Physaria engelmannii</i>	Grasslands and calcareous rock outcrops in a band along the eastern edge of the Edwards Plateau, ranging as far north as the Red River (Carr 2015).	N	No calcareous rock outcrops or related soils occur within the project area.	No impact	No suitable habitat occurs within the project area.	N

## SPECIES ANALYSIS SUMMARY (SGCN)

Project Name: Glade Road

CSJ(s): 0902-90-117, 0902-90-061

County	Taxon	Common Name	Scientific Name	Habitat	Suitable Habitat Present?	Explanation for determination regarding suitable habitat	Impact Determination for SGCNs	Explanation for Impact Determination	Presence/ Absence survey conducted?
Tarrant	Plants	Glen Rose yucca	<i>Yucca necopina</i>	Grasslands on sandy soils and limestone outcrops; flowering April-June	N	No grasslands on sandy soils or limestone outcrops occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Plants	Hall's prairie clover	<i>Dalea hallii</i>	In grasslands on eroded limestone or chalk and in oak scrub on rocky hillsides; Perennial; Flowering May-Sept; Fruiting June-Sept	N	Grasslands occur within the project area however the soils are not eroded limestone or chalk.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Plants	Osage Plains false foxglove	<i>Agalinis densiflora</i>	Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct	N	No grasslands on shallow, gravelly calcareous soils, prairies or dry limestone soils occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Plants	Reverchon's scurfpea	<i>Pediomelum reverchonii</i>	Mostly in prairies on shallow rocky calcareous substrates and limestone outcrops; Perennial; Flowering Jun-Sept; Fruiting June-July	N	No prairies on shallow rocky calcareous substrates or limestone outcrops occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Plants	Shinner's sedge	<i>Carex shimmersii</i>	Occurs in ditches and swales in prairie landscapes (Carr 2015).	N	No prairie landscapes occur within the project area.	No impact	No suitable habitat occurs within the project area.	N
Tarrant	Plants	Texas milk vetch	<i>Astragalus reflexus</i>	Grasslands, prairies, and roadsides on calcareous and clay substrates; Annual; Flowering Feb-June; Fruiting April-June	Y	Grasslands and roadsides on clay substrates occur within the project area.	May impact	Suitable habitat occurs within the project area.	N
Tarrant	Plants	Topeka purple-coneflower	<i>Echinacea atrorubens</i>	Occurring mostly in tallgrass prairie of the southern Great Plains, in blackland prairies but also in a variety of other sites like limestone hillsides; Perennial; Flowering Jan-June; Fruiting Jan-May	N	No tallgrass prairies, blackland prairies or limestone hillsides occur.	No impact	No suitable habitat occurs within the project area.	N

Prepared Date: 12/1/2020

**SPECIES ANALYSIS SUMMARY NOTES**

Common Name	Scientific Name	Notes
Ashy Dogweed	<i>Thymophylla tephroleuca</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Jim Hogg.
Attwater's Greater Prairie-chicken	<i>Tympanuchus cupido attwateri</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Fort Bend, Wharton.
Barton Springs Salamander	<i>Eurycea sosorum</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Williamson.
Bee Creek Cave Harvestman	<i>Texella reddelli</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Williamson.
Big Bend Gambusia	<i>Gambusia gaigei</i>	
Black Bear	<i>Ursus americanus</i>	
Black Lace Cactus	<i>Echinocereus reichenbachii</i> var. <i>albertii</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Duval, Nueces.
Black Rail	<i>Laterallus jamaicensis</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Anderson, Aransas, Archer, Austin, Bastrop, Baylor, Bee, Bell, Borden, Bosque, Brazoria, Brazos, Briscoe, Brown, Burleson, Caldwell, Calhoun, Callahan, Cameron, Chambers, Childress, Clay, Coke, Coleman, Collin, Colorado, Comanche, Cooke, Coryell, Cottle, Crosby, Dallas, Delta, Denton, DeWitt, Dickens, Eastland, Ellis, Erath, Falls, Fannin, Fayette, Fisher, Floyd, Foard, Fort Bend, Franklin, Freestone, Galveston, Garza, Goliad, Gonzales, Grayson, Grimes, Guadalupe, Hale, Hall, Hamilton, Hardeman, Harris, Haskell, Henderson, Hill, Hood, Hopkins, Houston, Howard, Hunt, Hutchinson, Jack, Jackson, Jefferson, Johnson, Jones, Karnes, Kaufman, Kenedy, Kent, King, Kleberg, Knox, Lamar, Lampasas, Lavaca, Lee, Leon, Liberty, Limestone, Lubbock, Lynn, Madison, Matagorda, McLennan, Milam, Mills, Mitchell, Montague, Montgomery, Motley, Navarro, Nolan, Nueces, Palo Pinto, Parker, Rains, Red River, Refugio, Robertson, Rockwall, Runnels, San Jacinto, San Patricio, Scurry, Shackelford, Somervell, Stephens, Stonewall, Swisher, Tarrant, Taylor, Throckmorton, Travis, Van Zandt, Victoria, Walker, Waller, Washington, Wharton, Wichita, Wilbarger, Williamson, Wilson, Wise, Wood, Young.
Brazos Heelsplitter	<i>Potamilus streckersoni</i>	Note: Not currently mapped by RTEST. See habitat description. Possible counties based on literature include: Young, Palo Pinto, Hood, Somervell, Bosque, Hill, Johnson
Carolinae Tryonia	<i>Tryonia oasiensis</i>	Note: Not currently mapped by RTEST. See habitat description. County location based on literature: Terrell
Comanche Springs Pupfish	<i>Cyprinodon elegans</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Pecos.
Eskimo Curlew	<i>Numenius borealis</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Cameron, Cooke, Galveston, Kendall, San Patricio, Washington.
False Spike	<i>Fusconaia (=Quadrula) mitchelli</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Bastrop, Blanco, Burnet, Caldwell, Comal, Concho, Dewitt,
Fountain Darter	<i>Etheostoma fonticola</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Caldwell, Gonzales, Guadalupe.
Geocarpon Minimum	<i>Geocarpon minimum</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Gregg, Palo Pinto

**SPECIES ANALYSIS SUMMARY NOTES**

Common Name	Scientific Name	Notes
Golden-cheeked Warbler	<i>Setophaga chrysoparia</i> (formerly <i>Dendroica chrysoparia</i> )	Note: This species is listed by TPWD but not by IPaC in the following county: Parker.
Gonzales Tryonia	<i>Tryonia circumstriata</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Terrell.
Great Hammerhead	<i>Sphyrna mokarran</i>	Note: Not currently mapped by RTEST. See habitat description.
Jollyville Plateau Salamander	<i>Eurycea tonkawae</i>	
Killer Whale	<i>Orcinus orca</i>	
Large-tooth Sawfish	<i>Pristis pristis</i>	
Louisiana Pigtoe	<i>Pleurobema riddellii</i>	
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	
North Atlantic Right Whale	<i>Eubalaena glacialis</i>	
Oceanic Whitetip Shark	<i>Carcharhinus longimanus</i>	
Opossum Pipefish	<i>Microphis brachyurus</i>	
Phantom Springsnail	<i>Cochliopa (=Pyrgulopsis) texana</i>	
Pillar Coral	<i>Dendrogyra cylindrus</i>	
Rafinesque's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	
Ocelot	<i>Leopardus (=Felis) pardalis</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Kinney, Uvalde.
Ouachita Rock Pocketbook	<i>Arcidens (=Arkansia) wheeleri</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Lamar, Red River.
Rio Grande Chub	<i>Gila pandora</i>	
Rio Grande Silvery Minnow	<i>Hybognathus amarus</i>	
San Marcos Gambusia	<i>Gambusia georgei</i>	
Sei Whale	<i>Balaenoptera borealis</i>	
Slender Rush-pea	<i>Hoffmannseggia tenella</i>	
Rio Grande Darter	<i>Etheostoma grahami</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Crockett, Kinney, Maverick, Terrell, Val Verde, Webb.
Spotfin Gambusia	<i>Gambusia krumholzi</i>	
San Marcos Salamander	<i>Eurycea nana</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Caldwell.
Sharpnose Shiner	<i>Notropis oxyrhynchus</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Austin, Bosque, Brazos, Burleson, Coke, Falls, Foard, Fort Bend, Garza, Hill, Limestone, McLennan, Milam, Mills, Robertson, San Saba, Travis, Waller, Washington, Wilbarger.
Texas Ayenia	<i>Ayenia limitaris</i>	
Texas Fatmucket	<i>Lampsilis bracteata</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Llano.
Spotted Bat	<i>Euderma maculatum</i>	Note: This species is listed by TPWD but not by IPaC in the following county: Brewster.
Texas Horned Lizard	<i>Phrynosoma cornutum</i>	
Texas Pigtoe	<i>Fusconaia askewi</i>	

SPECIES ANALYSIS SUMMARY NOTES

Common Name	Scientific Name	Notes
Texas Blind Salamander	<i>Eurycea rathbuni</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Blanco, Caldwell, Guadalupe.
Texas Fawnsfoot	<i>Truncilla macrodon</i>	Note: This species is listed by TPWD but not by IPaC in the following counties: Brazoria, Haskell, Jones, McLennan, Parker.

DRAFT

Taxon	Species (Common Name)	Reference 1	Reference 2	Reference 3	Reference 4
All	All Species	<a href="http://explorer.natureserve.org">NatureServe Explorer website http://explorer.natureserve.org</a>	<a href="https://tpwd.texas.gov/gis/rtest/">TPWD RTEST website https://tpwd.texas.gov/gis/rtest/</a> May 21, 2020 version retrieved June 20, 2020	<a href="https://ecos.fws.gov/">USFWS ECOS website https://ecos.fws.gov/</a> Retrieved August 16, 2019.	<a href="https://ecos.fws.gov/ipac/">USFWS IPAC website https://ecos.fws.gov/ipac/</a> Retrieved August 2019.
Birds	Black Rail	<a href="https://ebird.org/species/blkrai">https://ebird.org/species/blkrai</a>	<a href="https://www.allaboutbirds.org/guide/Black_Rail/id">https://www.allaboutbirds.org/guide/Black_Rail/id</a>		
Birds	Whooping Crane	<a href="https://www.allaboutbirds.org/guide/Whooping_Crane/lifehistory">https://www.allaboutbirds.org/guide/Whooping_Crane/lifehistory</a>			
Mammals	Black Bear	<a href="https://tpwd.texas.gov/landwater/land/habitats/trans_pecos/ningame/blackbear/">https://tpwd.texas.gov/landwater/land/habitats/trans_pecos/ningame/blackbear/</a>	<a href="https://tpwd.texas.gov/landwater/land/habitats/trans_pecos/ningame/blackbear/">https://tpwd.texas.gov/landwater/land/habitats/trans_pecos/ningame/blackbear/</a>		
Mollusks	Texas Heelsplitter	Howells, R.G., R.W. Neck, and H.D. Murray. 1996. Freshwater Mussels of Texas. Texas Parks and Wildlife Press: Austin, Texas. 218 pp.	<a href="http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&amp;loadTemplate=species_RptComprehensive.wmt&amp;selectedReport=RptComprehensive.wmt&amp;summaryView=tabular_report.wmt&amp;elKey=115372&amp;paging=home&amp;save=true&amp;startIndex=1&amp;nextStartIndex=1&amp;reset=false&amp;offPageSelectedElKey=115372&amp;offPageSelectedElType=species&amp;offPageYesNo=true&amp;post_processes=&amp;radiobutton=radiobutton&amp;selectedIndexes=115372">http://explorer.natureserve.org/servlet/NatureServe?sourceTemplate=tabular_report.wmt&amp;loadTemplate=species_RptComprehensive.wmt&amp;selectedReport=RptComprehensive.wmt&amp;summaryView=tabular_report.wmt&amp;elKey=115372&amp;paging=home&amp;save=true&amp;startIndex=1&amp;nextStartIndex=1&amp;reset=false&amp;offPageSelectedElKey=115372&amp;offPageSelectedElType=species&amp;offPageYesNo=true&amp;post_processes=&amp;radiobutton=radiobutton&amp;selectedIndexes=115372</a>		
Reptiles	Alligator Snapping Turtle	Dixon, J. R. 2013. Amphibians and Reptiles of Texas. Third Edition. Texas A&M University Press. College Station, Texas, USA.			
Reptiles	Texas Horned Lizard	<a href="https://tpwd.texas.gov/huntwild/wild/species/thlizard/">https://tpwd.texas.gov/huntwild/wild/species/thlizard/</a>			

DRAFT