



# Approved- Species Analysis

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1062-02-011: Farm-to-Market (FM) 2100 from Huffman-Cleveland Road North to State Highway (SH) 99  
(Realignment)

**SPECIES ANALYSIS SPREADSHEET: Project Information Sheet**

<b>Project Name:</b>	FM 2100: Huffman-Cleveland Road to Future SH 99 (-011)
<b>CSJ(s):</b>	1062-02-011
<b>TxDOT District:</b> (Click dropdown arrow to select a District from List)	Houston
<b>County(ies):</b> (Click dropdown arrow to select each county)	Harris
<b>Prepared by:</b> (Full Name)	Marissa Buschow, Cox   McLain Environmental Consulting, Inc.
<b>Date Completed:</b> (m/d/yyyy)	10/22/2021

*TxDOT ENV Spreadsheet Template date: July 14 2021.*

**SPECIES ANALYSIS SUMMARY**  
**Project Name: FM 2100: Huffman-Cleveland Road to Future SH 99 (-011)**  
**CSJ(s): 1062-02-011**

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?
Harris	Amphibians	Houston Toad	<i>Anaxyrus (Bufo) houstonensis</i>	The species inhabits areas with deep, friable, sandy soils that contain varying degrees of overstory vegetation. There is a very strong correlation between Houston toad sites and the occurrence of deep (>40 inches) sandy soils in more or less contiguous zones of greater than 20,000 acres. All existing, known Houston toad populations occur within two separate bands of geologic formations, which contain the deepest surface sands in the region. Within Bastrop County, these formations include the Sparta Sand, Weches Formation, Queen City Sand, Recklaw Formation, and Carrizo Sand. To the southeast in Lavaca, Austin, and Colorado counties lies the other band of Houston toad habitat, which includes the Willis and Goliad formations. Vegetative cover within Houston toad habitat usually contains some degree of forested vegetation. Loblolly pine ( <i>Pinus taeda</i> ) and post oak ( <i>Quercus stellata</i> ) are common overstory species.	N	Though sandy soils with canopy cover occur in the project area, the species is considered extirpated from Harris County and has not been recorded in the county since the 1970s.	E	No effect	E	No impact	The species' currently occupied range does not include Harris County.	N
Harris	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	Though herbaceous wetlands were observed in the project area during October 2021 site investigations, the wetlands did not contain suitable vegetation or hydric regime for foraging or nesting.	T	No effect	T	No impact	No suitable habitat is present in the project area.	N

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Harris	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 project area is outside the breeding and wintering range of this species. Although suitable stopover habitat may be present, Least Tern is not expected to regularly occur and any use of this habitat would be incidental.	—	N/A	E	No impact	The project area does not contain suitable breeding or wintering habitat for the Least Tern.	N
Harris	Birds	Piping Plover - Coastal	<i>Charadrius melodus (Coastal)</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	No coastal habitat or beaches are present in the project area.	T	No effect	T	No impact	No suitable habitat is present in the project area.	N
Harris	Birds	Red Knot - Coastal	<i>Calidris canutus rufa (Coastal)</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	No coastal habitat, marshes, or flooded fields are present in the project area.	T	No effect	T	No impact	No suitable habitat is present in the project area.	N

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Harris	Birds	Red-cockaded Woodpecker	<i>Picoides borealis</i>	The species is a year-round resident of the Piney Woods ecosystem of east Texas. Optimal habitat consists of pine forest with large, widely-spaced trees. It nests in cavities in mature (over 60 years old) longleaf pine ( <i>Pinus palustris</i> ), when it occurs, but will also utilize shortleaf ( <i>P. echinata</i> ) and loblolly pine ( <i>P. taeda</i> ). Relatively younger pines (over 30 years old) can be used for foraging. Nest cavities are excavated from living trees, taking 1 to 3 years to create. As a cooperative breeding species, nest cavities occur in clusters, with 1 to 20 cavity trees occurring over 3 to 60 acres. The clan home range is approximately 200 acres when not nesting.	N	Though loblolly pine stands were observed in the project area during October 2021 site investigations, the trees were not mature and widely-spaced and primarily occurred in small, isolated stands. No nest cavities or individuals of the species were observed.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N
Harris	Birds	Reddish Egret	<i>Egretta rufescens</i>	A year-round resident of the Texas Gulf Coast, the species inhabits saline, hypersaline, or brackish coastal habitats including barren sand or mud tidal flats, salt ponds, lagoons, and open mangrove communities. It occurs less frequently in other habitats such as coastal beaches, sparsely-vegetated freshwater marshes, and the shores of lakes and reservoirs. It nests on the ground or low in mangroves or other terrestrial vegetation (e.g. mesquite [ <i>Prosopis glandulosa</i> ], yucca [ <i>Yucca</i> sp.], or prickly-pear [ <i>Opuntia</i> sp.]) on natural islands or man-made dredge spoil islands, but it also occasionally nests on the coastal mainland. It forages in shallow water usually less than 15 centimeters deep.	N	No coastal habitat, sparsely-vegetated marshes, or lake shores are present in the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Birds	Swallow-tailed Kite	<i>Elanoides forficatus</i>	This migratory species breeds in the South Central Plains of east Texas and throughout the southeastern U.S. In Texas, breeding habitat occurs between sea level and 230 meters in elevation in bottomland forests, cypress swamps, pine glades, and freshwater marshes skirting large lakes. It nests near the tops of trees that are higher than the surrounding stand, often near a clearing or the edge of a forest or woodland. It prefers to nest in pines, but occasionally uses species such as bald cypress ( <i>Taxodium distichum</i> ), water oak ( <i>Quercus nigra</i> ), or cottonwood ( <i>Populus deltoides</i> ).	N	No bottomland forests, tall nesting trees, or large lakes are present in the project area. Incidental observations may occur due to the project area's proximity to Lake Houston and the San Jacinto River.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N

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Harris	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	Though freshwater wetlands were observed in the project area during October 2021 site investigations, they were primarily small, forested, or bounded by forest and unlikely to be used by the species. Incidental observations may occur.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Birds	White-tailed Hawk	<i>Buteo albicaudatus</i>	This year-round resident species occurs throughout the Western Gulf Coastal Plain ecoregion of Texas and less frequently farther inland in the East Central Texas Plains and South Texas Plains regions. Near the coast, preferred habitat includes prairies, cordgrass flats, and live oak scrub. Further inland it inhabits prairies, mesquite and oak savannas, and mixed savanna-chaparral. Breeding occurs within open savannas with short trees and shrubs, such as mesquite ( <i>Prosopis glandulosa</i> ), hackberry ( <i>Celtis laevigata</i> ), and oak ( <i>Quercus</i> sp.), with an average height of 12 feet and canopy diameter of 18 feet. Suitable coastal prairie habitat is similar to desirable range condition for cattle grazing.	N	No open savannas or coastal prairies were observed during October 2021 site investigations. Grasslands were limited to isolated highly disturbed areas.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	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 open bottomlands or marshes with appropriate horizontal visibility are present in the project area. The project is not located within the wintering range.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N

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Harris	Birds	Wood Stork	<i>Mycteria americana</i>	The species breeds in Mexico, and nesting sites have not been recorded in Texas since 1960. However, post-breeding migrants disperse into Texas in the summer. Foraging habitat includes freshwater prairie ponds, flooded pastures or fields, ditches, and other shallow standing water with an open canopy, occasionally including brackish wetlands. The species typically roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries).	N	Though a shallow pond was observed in the project area during October 2021 site investigations, the pond is adjacent to the Grand Parkway Infrastructure laydown yard with high traffic and construction activities. Incidental observations may occur due to the project area's proximity to Lake Houston.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Fishes	Dwarf Seahorse	<i>Hippocampus zosterae</i>	The dwarf seahorse is one of the smallest seahorse species and is found in seagrass beds, mangrove roots, and algal mats along the coasts of the Western Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. Preferred habitat includes bays, estuaries, and lagoons. Like many seahorse species, the dwarf seahorse is nocturnal, and feeds on brine shrimp, amphipods, crustaceans, and other small organisms. Seagrass beds are important components of their habitat because they use their prehensile taila to hold on to the vegetation to keep from being swept away by ocean currents.	N	No marine or coastal habitat is present in the project area.	C	No effect	—	N/A	No suitable habitat is present in the project area.	N
Harris	Fishes	Gulf Sturgeon	<i>Acipenser oxyrinchus desotoi</i>	This large fish species is the only sturgeon found off the Texas coast in the Gulf of Mexico. It is an anadromous species spending warm months in large coastal rivers to spawn and cooler months in the nearshore Gulf waters, estuaries, and bays. Sporadic occurrences have been recorded along the Texas and Mexico border, around the Rio Grande. Successful spawning requires optimum conditions in water temperature, flow, and pH, as well as preferred substata (gravel, bedrock, or boulders) for egg deposits. Juveniles will typically stay within the river for 2 to 3 years before swimming out to the estuaries. Species are indiscriminate benthivores, foraging and eating anything they suck off the substratum (crabs, shrimp, amphipods, polychaete worms, mollusks, small fish, etc.).	N	No coastal waters or perennial streams are present in the project area.	T	No effect	—	N/A	No suitable habitat is present in the project area.	N
Harris	Fishes	Nassau Grouper	<i>Epinephelus striatus</i>	The Nassau grouper inhabits reefs in the southern Gulf of Mexico and throughout the Caribbean Sea. It generally is found along the shoreline to depths of 100 meters. It can also be found in or near seagrass beds, cuts, rocks, pilings, and seawalls. Important nursery habitats are shallow-water sites with coral clumps covered with macroalgae.	N	No marine or coastal habitat is present in the project area.	T	No effect	—	N/A	No suitable habitat is present in the project area.	N

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Harris	Fishes	Smalltooth Sawfish	<i>Pristis pectinata</i>	This anadromous species historically occurred in waters from Texas to New York. There has been a dramatic population decrease, but it still occurs in U.S waters. The species has been documented at the Flower Garden Banks National Marine Sanctuary. Adult habitat includes inshore coastal waters, lagoons, river mouths, and estuaries, and juveniles inhabit fresh water systems that have connectivity to brackish or marine coastal systems. The species feeds on invertebrates and small fishes.	N	No perennial streams are present in the project area.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N
Harris	Fishes	Western Creek Chubsucker	<i>Erimyzon claviformis</i>	The species is widespread in east Texas from the Red to the San Jacinto Rivers. The species occurs in pools of clear headwaters, creeks, and small rivers with silt, sand, and gravel substrates, and occasionally in lakes. It is frequently found near submergent vegetation. Spawning occurs in river mouths or pools, riffles, lake outlets, or upstream creeks.	N	No perennial streams or lakes are present in the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Insects	Monarch Butterfly	<i>Danaus plexippus</i>	Found statewide. Adults are found in a variety of habitats including native prairies, pastures, open woodlands and savannas, desert scrub, roadsides, and other habitats with abundant nectar plants, including urbanized areas. Although adults may be present year round, they are primarily encountered between March and November, and are most commonly observed in the summer and fall during breeding and migration. Caterpillars are found on various species of the family Asclepiadaceae (occasionally treated as a subfamily of Apocynaceae). Common host plants in Texas include milkweeds ( <i>Asclepias</i> spp.) milkweed vines ( <i>Matelea</i> spp.), climbing milkweed ( <i>Funastrum</i> spp.), swallowworts ( <i>Cynanchum</i> spp.) and Anglepod ( <i>Gonolobus suberosus</i> ). Caterpillars are most frequently observed between April and September.”	Y	Nectar-producing vegetation was observed throughout the project area during October 2021 site investigations.	C	May affect	—	N/A	Suitable habitat is present in the project area and this project may affect the monarch butterfly. This project is not anticipated to be completed prior to the species being listed; however, consultation is not required for candidate species. The USFWS intends to propose listing the monarch in Fiscal Year 2024. If the monarch butterfly is proposed for listing during the life of this project, the impacts to monarch butterflies will be reevaluated to determine the appropriate course of action, which may include conference or consultation with USEWS.	

Prepared Date: 10/22/2021



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Harris	Mammals	Louisiana Black Bear	<i>Ursus americanus luteolus</i>	Historically, Louisiana black bear occurred in east Texas throughout the Western Gulf Coastal Plains ecoregion and as far west as the San Antonio River drainage basin. Habitat includes bottomland hardwood forest, brackish and freshwater marshes, salt domes, wooded spoil levees along canals, bayous, and agricultural fields. It generally requires areas with large tracts of inaccessible forest.	N	Though hardwood forest is present in the project area, it is highly accessible as it is near high traffic and development.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Mammals	Rafinesque's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	This species occurs in the bottomland pine and hardwood forests of east Texas. The species is known to roost in hollow trunks of bottomland hardwoods such as black gum ( <i>Nyssa sylvatica</i> ), southern magnolia ( <i>Magnolia grandiflora</i> ), and water tupelo ( <i>Nyssa aquatica</i> ). It also roosts in caves and man-made structures such as bridges, culverts, and abandoned buildings.	Y	Hardwood forests and man-made structures are present in the project area.	—	N/A	T	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	West Indian Manatee	<i>Trichechus manatus</i>	The West Indian Manatee is found throughout the Gulf of Mexico, Caribbean Sea, and Western Atlantic Ocean. The species utilizes marine, brackish, and freshwater systems in subtropical and tropical coastal areas throughout its range. Preferred habitat is near shore features with sea grass and eel grass beds and access to deep water channels. In the U.S. the species is rarely documented off the Louisiana and Texas Gulf Coast during warm water months; however, the winter range, due to low tolerances for cold water, is restricted to the southern Florida peninsula. Manatees are often attracted to accessible areas where industrial plants discharge large volumes of heated wastewater. During the summer, their range expands along the Atlantic Coast and Gulf Coast, traveling by shoreline and along channels.	N	No coastal habitat is present in the project area.	T	No effect	T	No impact	No suitable habitat is present in the project area.	N
Harris	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.	N	No perennial streams are present in the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	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.	N	No perennial streams are present in the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N

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Harris	Plants	Houston Daisy	<i>Rayjacksonia aurea</i>	The species is endemic to the Gulf Coastal Plain of Texas. The plant occurs on and around naturally barren or sparsely vegetated saline slick spots or pimple mounds on coastal prairies, usually on sandy to sandy loam soils, occasionally in pastures and on roadsides in similar soil types where mowing may mimic natural prairie disturbance regimes. This plant is an annual; flowering late September-November (-December).	Y	Sandy soils and regularly-mowed roadsides are present in the project area.	—	N/A	T	May impact	Suitable habitat is present in the project area.	N
Harris	Plants	Texas Prairie Dawn-flower	<i>Hymenoxys texana</i>	This annual herb is endemic to the upper Texas Gulf Coastal Plain. It occurs in grasslands within sparsely vegetated areas (slick spots) at the base of pimple mounds in association with poorly drained saline soils that are sticky when wet and powdery when dry.	N	No pimple mounds or slick spots are present in the project area.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N
Harris	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.	N	No perennial streams are present in the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Reptiles	Green Sea Turtle	<i>Chelonia mydas</i>	The green sea turtle inhabits tropical and subtropical seas throughout the world including the Gulf of Mexico. The species is commonly observed swimming and foraging in and along ship ports, jetties, bays, estuaries, lagoons, and marinas. This highly migratory marine species feeds in shallow waters with abundant sea grasses and algae, and builds nests on coastal beaches and sand dunes, including Padre Island in Texas, where waters are greater than 77 degrees Fahrenheit. While adult female nesting season is generally from April to September, the adult males rarely, if ever, come ashore once leaving the sand of their natal beach. The females will return to the same nesting beach and within close proximity of their previous nesting spot. Green sea turtles are abundant along the Texas coast during warm months and are known to be cold-stunned if exposed to prolonged cold-water (<50 degrees Fahrenheit). Juveniles are found year-round in nearshore and inshore waters of the gulf until reaching adulthood and sexual maturity, then migrate to new feeding grounds.	N	No marine or coastal habitat is present in the project area.	E	No effect	T	No impact	No suitable habitat is present in the project area.	N

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Harris	Reptiles	Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	This omnivorous sea turtle species is found worldwide occurring predominately offshore of mainland and island shelves, where coral reef formations are present. Nesting range for the continental United States only includes Florida. Nesting season is from April to November along sandy beaches and dunes where nesting females return to their natal site and eggs hatch approximately two months after nesting occurs. Small juveniles and adults forage in neritic waters comprised of coral reefs, sea grass, algal beds, mangrove bays or creeks, or mudflats where they feed on sea sponges, sea urchins, crustaceans, mollusks, marine algae, small fish, and jelly fish.	N	No marine or coastal habitat is present in the project area.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N
Harris	Reptiles	Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>	This species occurs in the western Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. The females come ashore to lay eggs during daylight in synchronized fashion in very large groups. Nesting season is from May to July along sandy beaches and dunes where nesting females return to their natal site and eggs hatch approximately two months after nesting occurs. A successful nesting population occurs on Padre Island National Seashore, and nesting is documented from Mustang Island, Texas to Vera Cruz, Mexico. Post-hatchling and juvenile habitat includes mats of sargassum algae where individuals rest, hide, and forage on invertebrates and small fish within the floating algal masses. Older juveniles (approximately more than 2 years old) return to nearshore areas of the northwestern Atlantic Ocean or the Gulf of Mexico to mature to adulthood. Adult males do not return to shore and most migrate annually between breeding and feeding grounds, while some stay near nesting beaches or breeding grounds.	N	No marine or coastal habitat is present in the project area.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N
Harris	Reptiles	Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	Leatherback sea turtles occur in the Pacific, Atlantic, and Indian Oceans from British Columbia and the British Isles to southern Africa, Argentina, and Australia. They prefer the open ocean and are rare visitors to the Gulf of Mexico. They are the largest species of sea turtles in the world and highly migratory. The first leatherback sea turtle nest in Texas since the 1930's was confirmed in 2008 at the Padre Island National Seashore near Corpus Christi, Texas. Florida and North Carolina also have evidence of nests within the continental United States. Females are known to nest at various beaches, typically at night, with a rare documented occurrence of nesting during the day in Florida. Eggs hatch approximately two months after nesting. Post-hatchling and juvenile habitat includes mats of sargassum algae where individuals rest, hide, and forage on soft invertebrates within the floating algal masses. Adults typically feed primarily on jelly fish and other invertebrates.	N	No marine or coastal habitat is present in the project area.	E	No effect	E	No impact	No suitable habitat is present in the project area.	N

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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?
Harris	Reptiles	Loggerhead Sea Turtle	<i>Caretta caretta</i>	The loggerhead sea turtle is the most abundant of all sea turtle species and is found worldwide, primarily in temperate and subtropical ocean waters. In the U.S. they inhabit the Atlantic and Gulf coasts from North Carolina to Alabama; however, small populations of this species can be found on the Texas barrier islands. Nesting occurs on sandy beaches and dunes from April to September where nesting females return to their natal sites. Juveniles are primarily found in nearshore waters along the coast in bays, estuaries, brackish waters of coastal lagoons and river mouths where water temperature is above 50 degrees Fahrenheit. Both juveniles and adults forage mainly on invertebrates such as mollusks, whelks, clams, sea urchins, jellyfish, and horseshoe crabs, and occasionally fish and plant material.	N	No marine or coastal habitat is present in the project area.	T	No effect	T	No impact	No suitable habitat is present in the project area.	N
Harris	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 are present in the project area.	—	N/A	T	No impact	No suitable habitat is present in the project area.	N
Harris	Marine Species	N/A	N/A	If the project occurs within or adjacent to coastal waters including, but not limited to bays, inlets, and estuaries, an analysis of marine species is required. Select "Y" in the "Suitable Habitat Present" column if this condition applies and proceed to the Marine Species tab in this spreadsheet. If this condition does not apply, select "N" in the "Suitable Habitat Present" column and no further analysis of marine species is required.	N	N/A	—	N/A	—	N/A	N/A	N/A

**SPECIES ANALYSIS SUMMARY NOTES**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Notes</b>
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**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Notes</b>
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.

Taxon	Species (Common Name)	Reference1	Reference 2	Reference 3	Reference 4
All	All Species	NatureServe Explorer website <a href="http://explorer.natureserve.org">http://explorer.natureserve.org</a>	TPWD RTEST website <a href="https://tpwd.texas.gov/gis/rtest/">https://tpwd.texas.gov/gis/rtest/</a> May 21, 2020 version retrieved June 20, 2020	USFWS ECOS website <a href="https://ecos.fws.gov/">https://ecos.fws.gov/</a> Retrieved August 16, 2019.	USFWS IPAC website <a href="https://ecos.fws.gov/ipac/">https://ecos.fws.gov/ipac/</a> Retrieved August 2019.
Amphibians	Houston Toad	Price, A.H. 2003. The Houston Toad in Bastrop State Park 1990 - 2002: A Narrative. Occasional Papers Wildlife Division, Texas Parks & Wildlife Department. 1:1-21.	Price, A.H. and J.H. Yantis. 1993. Houston toad ( <i>Bufo houstonensis</i> ) status survey. Final Report as required by the Endangered Species Act, Section 6, Endangered and Threatened Species Conservation. Texas Project No. E-1-4, Job No. 8. Texas Parks and Wildlife Department, Austin, Texas. 13 pp + figs.		
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	Red-cockaded Woodpecker	<a href="https://tpwd.texas.gov/huntwild/wild/species/rcw/">https://tpwd.texas.gov/huntwild/wild/species/rcw/</a>	<a href="https://txtbba.tamu.edu/species-accounts/red-cockaded-woodpecker/">https://txtbba.tamu.edu/species-accounts/red-cockaded-woodpecker/</a>		
Birds	Reddish Egret	<a href="https://nhpbs.org/natureworks/reddishegret.htm#3">https://nhpbs.org/natureworks/reddishegret.htm#3</a>	<a href="https://tpwd.texas.gov/huntwild/wild/species/reddishegret/">https://tpwd.texas.gov/huntwild/wild/species/reddishegret/</a>		
Birds	Swallow-tailed Kite	<a href="https://txtbba.tamu.edu/species-accounts/swallow-tailed-kite/">https://txtbba.tamu.edu/species-accounts/swallow-tailed-kite/</a>	<a href="https://www.audubon.org/field-guide/bird/swallow-tailed-kite">https://www.audubon.org/field-guide/bird/swallow-tailed-kite</a>		
Birds	Whooping Crane	<a href="https://www.allaboutbirds.org/guide/Whooping_Crane/lifehistory">https://www.allaboutbirds.org/guide/Whooping_Crane/lifehistory</a>			
Fishes	Dwarf Seahorse	Fedrizzi N, Stiassny ML, Boehm JT, Dougherty ER, Amato G, Mendez M. Population Genetic Structure of the Dwarf Seahorse ( <i>Hippocampus zosterae</i> ) in Florida. PLoS One. 2015;10(7):e0132308. Published 2015 Jul 22. doi:10.1371/journal.pone.0132308.			
Fishes	Nassau Grouper	Sadovy, Y. 1999. The Case of the Disappearing Grouper: <i>Epinephelus striatus</i> , the Nassau Group, in the Caribbean and Western Atlantic. Proceedings of the 45th Gulf and Caribbean Fisheries Institute.			
Fishes	Smalltooth Sawfish	Carlson, John K., Jason Osborn, J., Thomas Schmidt. 2007. Monitoring the recovery of smalltooth sawfish, <i>Pristis pectinata</i> , using standardized relative indices of abundance. Biological Conservation. 136(0), 195-202.	<a href="https://www.fishbase.se/summary/Pristis-pectinata">https://www.fishbase.se/summary/Pristis-pectinata</a>		
Fishes	Western Creek Chubsucker	<a href="https://www.fishbase.se/summary/66122">https://www.fishbase.se/summary/66122</a>			
Mammals	Louisiana Black Bear	<a href="https://www.fws.gov/southeast/wildlife/mammals/louisiana-black-bear/#habitat-section">https://www.fws.gov/southeast/wildlife/mammals/louisiana-black-bear/#habitat-section</a>			
Mammals	Rafinesque's Big-eared Bat	<a href="http://www.batcon.org/resources/media-education/species-profiles/detail/2249">http://www.batcon.org/resources/media-education/species-profiles/detail/2249</a>	<a href="https://www.fws.gov/refuge/trinity_river/wildlife/bats.html">https://www.fws.gov/refuge/trinity_river/wildlife/bats.html</a>		
Mammals	West Indian Manatee	U.S. Fish and Wildlife Service. 2001. Florida Manatee Recovery Plan ( <i>Trichechus manatus latirostris</i> ) – Third Revision. Southeast Region, U.S. Fish and Wildlife Service. Atlanta, Georgia. <a href="https://ecos.fws.gov/ecp0/profile/speciesProfile?spscode=A007">https://ecos.fws.gov/ecp0/profile/speciesProfile?spscode=A007</a>			
Plants	Houston Daisy	<a href="https://tpwd.texas.gov/gis/rtest/">https://tpwd.texas.gov/gis/rtest/</a>			
Plants	Texas Prairie Dawn-flower	<a href="https://tpwd.texas.gov/gis/rtest/">https://tpwd.texas.gov/gis/rtest/</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	Green Sea Turtle	<a href="https://tpwd.texas.gov/huntwild/wild/species/greentur/">https://tpwd.texas.gov/huntwild/wild/species/greentur/</a>	Valverde R.A., Holzwart K.R. 2017. Sea Turtles of the Gulf of Mexico. In: Ward C. (eds) Habitats and Biota of the Gulf of Mexico: Before the Deepwater Horizon Oil Spill. Springer, New York, NY.		
Reptiles	Hawksbill Sea Turtle	<a href="https://tpwd.texas.gov/huntwild/wild/species/seaturtle/">https://tpwd.texas.gov/huntwild/wild/species/seaturtle/</a>	<a href="https://www.iucnredlist.org/species/8005/12881238#habitat-ecology">https://www.iucnredlist.org/species/8005/12881238#habitat-ecology</a>		
Reptiles	Kemp's Ridley Sea Turtle	<a href="https://tpwd.texas.gov/huntwild/wild/species/ridley/">https://tpwd.texas.gov/huntwild/wild/species/ridley/</a>	<a href="https://www.iucnredlist.org/species/11533/3292342#habitat-ecology">https://www.iucnredlist.org/species/11533/3292342#habitat-ecology</a>		
Reptiles	Leatherback Sea Turtle	<a href="https://tpwd.texas.gov/huntwild/wild/species/lethback/">https://tpwd.texas.gov/huntwild/wild/species/lethback/</a>	<a href="https://www.iucnredlist.org/species/6494/43526147#habitat-ecology">https://www.iucnredlist.org/species/6494/43526147#habitat-ecology</a>		
Reptiles	Loggerhead Sea Turtle	<a href="https://srelherp.uga.edu/turtles/carcar.htm">https://srelherp.uga.edu/turtles/carcar.htm</a>	<a href="https://tpwd.texas.gov/huntwild/wild/species/logghead/">https://tpwd.texas.gov/huntwild/wild/species/logghead/</a>		
Reptiles	Texas Horned Lizard	<a href="https://tpwd.texas.gov/huntwild/wild/species/thlizard/">https://tpwd.texas.gov/huntwild/wild/species/thlizard/</a>			



SPECIES ANALYSIS SUMMARY (SGCN)  
 Project Name: FM 2100: Huffman-Cleveland Road to Future SH 99 (-011)  
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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?
Harris	Amphibians	southern crawfish frog	<i>Lithobates areolatus areolatus</i>	Terrestrial and aquatic: The terrestrial habitat is primarily grassland and can vary from pasture to intact prairie; it can also include small prairies in the middle of large forested areas. Aquatic habitat is any body of water but preferred habitat is ephemeral wetlands.	N	Although grassland areas are present in the project area, they consist of highly disturbed areas where woodlands have been cleared and grasses are regularly mowed for roadside/rural residential use. No prairie remnants are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Amphibians	spotted dusky salamander	<i>Desmognathus conanti</i>	This species occurs in association with aquatic habitats in forested areas. 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 support populations of this species.	N	No spring-fed streams, swamps, or bottomland forests are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	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 flats and wetlands with sandy substrates are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	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.	N	This species is not extant in Harris County.	No impact	The project area is not in the species' currently known range.	N
Harris	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	No tall trees or cliffs suitable for nesting near water are present in the project area. Incidental observations may occur due to the project area's proximity to Lake Houston and the San Jacinto River.	No impact	No suitable habitat is present in the project area.	N
Harris	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	No wetlands or lake shores suitable for roosting are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	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 prairies or bare fields are present in the project area. Grasslands in the project area are densely vegetated and disturbed.	No impact	No suitable habitat is present in the project area.	N

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Harris	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	N	No open grasslands or vacant lots are present in the project area. Open areas are limited to maintained lawns and densely vegetated early successional sites.	No impact	No suitable habitat is present in the project area.	N
Harris	Crustaceans	Houston burrowing crayfish	<i>Fallicambarus houstonensis</i>	All species in the genus <i>Fallicambarus</i> are primary burrowers. It is clearly a primary burrower with 100% of adult and subadult specimens known from excavated burrows. Large numbers of juveniles were collected from temporary pools (October through February).	Y	Crayfish burrows were observed throughout the project area during October 2021 site investigations.	May impact	Suitable habitat is present in the project area.	N
Harris	Fish	alligator gar	<i>Atractosteus spatula</i>	From the Red River to the Rio Grande (Hubbs et al. 2008); occurs in the Trinity River upstream of Lake Livingston. Found in rivers, streams, lakes, swamps, bayous, bays and estuaries typically in pools and backwater habitats. Floodplains inundated with flood waters provide spawning and nursery habitats.	N	No perennial streams are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Fish	Mississippi silvery minnow	<i>Hybognathus nuchalis</i>	Found in eastern Texas streams, from the Brazos River eastward and northward to the Red River; found in moderate current; silty, muddy, or rocky substrate. In Texas, adults likely to inhabit smaller tributary streams.	N	No perennial streams are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Fish	Sabine shiner	<i>Notropis sabiniae</i>	Inhabits small streams and large rivers of eastern Texas from San Jacinto drainage northward along the Gulf Coast to the Sabine River Basin; Habitat generalist with affinities for shallow, moving water and rarely found in pools and backwater areas; closely restricted to substrate of fine, silt free sand in small creeks and rivers having slight to moderate current.	N	No perennial streams are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Fish	saltmarsh topminnow	<i>Fundulus jenkinsi</i>	Occupies estuaries and the edges of saltmarsh habitats along the Gulf coast in salinities of 4-20 ppt in <i>Spartina</i> dominated tidal creeks and wetlands (Peterson & Ross 1991; Peterson & Turner 1994; Lopez et al. 2010; and Griffith 1974). Requires access to small interconnected tidal creeks for feeding and reproduction. Spawning occurs from March to August during high tide events (Robertson Thesis, 2016). Non-migratory.	N	No perennial streams or saltmarshes are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Fish	silverband shiner	<i>Notropis shumardi</i>	In Texas, found from Red River to Lavaca River; Main channel with moderate to swift current velocities and moderate to deep depths; associated with turbid water over silt, sand, and gravel.	N	No perennial streams are present in the project area.	No impact	No suitable habitat is present in the project area.	N

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Harris	Fish	southern flounder	<i>Paralichthys lethostigma</i>	This is an estuarine-dependent species that inhabits riverine, estuarine and coastal waters, and prefers muddy, sandy, or silty substrates (Reagan and Wingo 1985). Individuals can tolerate wide temperature (~5-35 °C) and salinity ranges (0-60 ppt). Southern Flounder spawn in offshore waters of the Gulf of Mexico from October to February (Reagan and Wingo 1985). The oceanic larval stage is pelagic and lasts 30-60 days. Metamorphosing individuals enter estuaries and migrate towards low-salinity headwaters, where settlement occurs (Burke et al. 1991, Walsh et al. 1999). The young fish enter the bays during late winter and early spring, occupying seagrass; some may move further into coastal rivers and bayous. Juveniles remain in estuaries until the onset of sexual maturation (approximately two years), at which time they migrate out of estuaries to join adults on the inner continental shelf. Adult southern flounder leave the bays during the fall for spawning in the Gulf of Mexico. They spawn for the first time when two years old at depths of 50 to 100 feet. Although most of the adults leave the bays and enter the Gulf for spawning during the winter, some remain behind and spend winter in the bays. Those in the Gulf will reenter the bays in the spring. The spring influx is gradual and does not occur with large concentrations that characterize the fall emigration.	N	No perennial streams or coastal waters are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Insects	American bumblebee	<i>Bombus pensylvanicus</i>	Habitat description is not available at this time.	N	Due to a lack of habitat description, an impact determination cannot be made.	No impact	No impact determination can be made.	N
Harris	Insects	bay skipper	<i>Euphyes bayensis</i>	Apparently tidal sawgrass marsh only, probably covers same range of salinity as saw grass, nectarivore (butterfly), herbivore (caterpillar), larval foodplant is so far unconfirmed but is probably sawgrass, diurnal; two well separated broods apparently peaking in late May and in September which suggests the larvae may well aestivate in summer and the next brood hibernate	N	No sawgrass marshes are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Mammals	big brown bat	<i>Eptesicus fuscus</i>	Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.	Y	Wooded areas are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	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	N	The species inhabits semi-arid regions and any individuals encountered in Harris County would be vagrant migrating individuals.	No impact	The project area is not in the species' typical occupied range.	N

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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?
Harris	Mammals	eastern red bat	<i>Lasiurus borealis</i>	Red bats are migratory bats that are common across Texas. They are most common in the eastern and central parts of the state, due to their requirement of forests for foliage roosting. West Texas specimens are associated with forested areas (cottonwoods). Also common along the coastline. These bats are highly mobile, seasonally migratory, and practice a type of wandering migration". Associations with specific habitat is difficult unless specific migratory stopover sites or wintering grounds are found. Likely associated with any forested area in East	Y	Wooded areas are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	eastern spotted skunk	<i>Spilogale putorius</i>	Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. <i>S.p. ssp. interrupta</i> found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.	Y	A variety of suitable terrestrial habitat is present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	hoary bat	<i>Lasiurus cinereus</i>	Hoary bats are highly migratory, high-flying bats that have been noted throughout the state. Females are known to migrate to Mexico in the winter, males tend to remain further north and may stay in Texas year-round. Commonly associated with forests (foliage roosting species) but are found in unforested parts of the state and lowland deserts. Tend to be captured over water and large, open flyways.	Y	Wooded areas are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	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	Upland woods are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	mountain lion	<i>Puma concolor</i>	Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.	N	No rugged mountains or riparian zones are present in the project area. Though the project transects a large forested area, the site is regularly disturbed by landowners and construction activities.	No impact	No suitable habitat is present in the project area.	N
Harris	Mammals	Muskrat	<i>Ondatra zibethicus</i>	Found in fresh or brackish marshes, lakes, ponds, swamps, and other bodies of slow-moving water. Most abundant in areas with cattail. Dens in bank burrow or conical house of vegetation in shallow vegetated water. It is primarily found in the Rio Grande near El Paso and in SE Texas in the Houston area.	N	No bodies of slow-moving water are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Mammals	Northern yellow bat	<i>Lasiurus intermedius</i>	Occurs mainly along the Gulf Coast but inland specimens are not uncommon. Prefers roosting in spanish moss and in the hanging fronds of palm trees. Common where this vegetation occurs. Found near water and forages over grassy, open areas. Males usually roost solitarily, whereas females roost in groups of several individuals.	Y	Wooded areas are present in the project area.	May impact	Suitable habitat is present in the project area.	N

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Harris	Mammals	southeastern myotis bat	<i>Myotis austroriparius</i>	Caves are rare in Texas portion of range; buildings, hollow trees are probably important. Historically, lowland pine and hardwood forests with large hollow trees; associated with ecological communities near water. Roosts in cavity trees of bottomland hardwoods, concrete culverts, and abandoned man-made structures.	Y	Wooded areas and man-made structures are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	swamp rabbit	<i>Sylvilagus aquaticus</i>	Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.	Y	Freshwater wetlands are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	tricolored bat	<i>Perimyotis subflavus</i>	Forest, woodland and riparian areas are important. Caves are very important to this species.	Y	Wooded areas are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Mammals	western hog-nosed skunk	<i>Conepatus leuconotus</i>	Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. <i>telmolestes</i>	N	No large grasslands or canyon country are present in the project area. The <i>telmolestes</i> population that formerly occupied east Texas is considered extirpated.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	awnless bluestem	<i>Bothriochloa exaristata</i>	Coastal prairies on black clay; Perennial; Flowering April-Dec; Fruiting April- Dec	N	No coastal prairies on black clay are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	coastal gay-feather	<i>Liatris bracteata</i>	Coastal prairie grasslands of various types, from salty prairie on low- lying somewhat saline clay loams to upland prairie on nonsaline clayey to sandy loams; flowering in fall	N	No coastal prairies on black clay are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	corkwood	<i>Leitneria pilosa</i> ssp. <i>pilosa</i>	Wet or saturated silty soils along brackish or freshwater swamps and ponds and other low, poorly drained sites; flowers in early spring, fruiting as early as May	Y	Saturated soils and freshwater wetlands are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Plants	Correll's false dragon-head	<i>Physostegia correllii</i>	Wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September	N	No streamsides, riverbanks, or creeks are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	giant sharpstem umbrella-sedge	<i>Cyperus cephalanthus</i>	In Texas on saturated, fine sandy loam soils, along nearly level fringes of deep prairie depressions; also in depressional area within coastal prairie remnant on heavy black clay; in Louisiana, most sites are coastal prairie on poorly drained sites, some on slightly elevated areas surrounded by standing shallow water, and on moderately drained sites; soils include very strongly acid to moderately alkaline silt loams and silty clay loams; flowering/fruiting May-June, August-September, and possibly other times in response to rainfall	N	No prairie depressions or prairie remnants are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	goldenwave tickseed	<i>Coreopsis intermedia</i>	In deep sandy soils of sandhills in openings in or along margins of post oak woodlands and pine-oak forests of east Texas; Perennial; Flowering/Fruiting May-Aug	Y	Sandy soils in or along forests occur in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Plants	Indianola beakrush	<i>Rhynchospora indianolensis</i>	Locally abundant in cattle pastures in some areas (at least during wet years), possibly becoming a management problem in such sites; Perennial; Flowering/Fruiting April-Nov	N	No cattle pastures are present in the project area.	No impact	No suitable habitat is present in the project area.	N

Prepared Date: 10/22/2021

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Harris	Plants	Oklahoma grass pink	<i>Calopogon oklahomensis</i>	Mesic, acidic, sandy to loamy prairies, pine savannas, oak woodlands, edges of bogs, and frequently mowed meadows (Goldman, Magrath & Catling 2002). Flowering March-July.	N	No prairies, pine savannas, or oak woodlands are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	panicked indigobush	<i>Amorpha paniculata</i>	A stout shrub, 3 m (9 ft) tall that grows in acid seep forests, peat bogs, wet floodplain forests, and seasonal wetlands on the edge of Saline Prairies in East Texas. It is distinguished from other <i>Amorpha</i> species by its fuzzy leaflets with prominent raised veins underneath, and the flower panicles, which are 8 to 16 inches long and slender, held above the foliage. Perennial; Flowering summer	N	No seep forests or peat bogs are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	Shinner's sunflower	<i>Helianthus occidentalis</i> ssp. <i>plantagineus</i>	Mostly in prairies on the Coastal Plain, with several slightly disjunct populations in the Pineywoods and South Texas Brush Country.	N	No prairies are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	South Texas false cudweed	<i>Pseudognaphalium austrotexanum</i>	In sandy grasslands on eroded area above saline flats; along edge of sendero through mesquite woodland and shrub mottes on sandy loam; on gravel and silt bars and flats in scour plain of streams (TEX-LL specimens Carr 23682, 29264, 22647, 27206). Oct-Jan, sometimes in spring.	N	No saline flats, mesquite woodlands, or stream scour plains are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	Texas ladies'-tresses	<i>Spiranthes brevilabris</i>	Sandy soils in moist prairies, incl. blackland/Fleming prairies, calcareous prairie pockets surrounded by pines, pine-hardwood forest, open pinelands, wetland pine savannas/flatwoods, and dry to moist fields, meadows, and roadsides. Delicate, nearly ephemeral orchid, producing winter rosettes, flowers Feb-Apr. Historically endemic to SE coastal plain.	Y	Sandy soils in pine-hardwood forests and roadsides are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Plants	Texas meadow-rue	<i>Thalictrum texanum</i>	Mostly found in woodlands and woodland margins on soils with a surface layer of sandy loam, but it also occurs on prairie pimple mounds; both on uplands and creek terraces, but perhaps most common on claypan savannas; soils are very moist during its active growing season; flowering/fruitletting (January-)February-May, withering by midsummer, foliage reappears in late fall(November) and may persist through the winter	N	No prairie pimple mounds or claypan savannas are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	Texas tauschia	<i>Tauschia texana</i>	Occurs in loamy soils in deciduous forests or woodlands on river and stream terraces; Perennial; Flowering/Fruiting Feb-April	Y	Loamy soils in deciduous forests are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Plants	Texas willkommia	<i>Willkommia texana</i> var. <i>texana</i>	Mostly in sparsely vegetated shortgrass patches within taller prairies on alkaline or saline soils on the Coastal Plain (Carr 2015).	N	No prairies or shortgrass patches are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Plants	Texas windmill grass	<i>Chloris texensis</i>	Sandy to sandy loam soils in relatively bare areas in coastal prairie grassland remnants, often on roadsides where regular mowing may mimic natural prairie fire regimes; flowering in fall	Y	Regularly maintained roadsides are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Plants	Tharp's dropseed	<i>Sporobolus tharpii</i>	Occurs on barrier islands, shores of lagoons and bays protected by the barrier islands, and on shores of a few near-coastal ponds. Plants occur at the bases of dunes, in interdune swales and sandflats, and on upper beaches. The substrate is of Holocene age.	N	No dunes or beaches are present in the project area.	No impact	No suitable habitat is present in the project area.	N

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Harris	Plants	threeflower broomweed	<i>Thurovia triflora</i>	Near coast in sparse, low vegetation on a veneer of light colored silt or fine sand over saline clay along drier upper margins of ecotone between between salty prairies and tidal flats; further inland associated with vegetated slick spots on prairie mima mounds; flowering September-November	N	No salty prairies or prairie mima mounds are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	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	A variety of suitable terrestrial habitat is present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Reptiles	pygmy rattlesnake	<i>Sistrurus miliarius</i>	The pygmy rattlesnake 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.	Y	Wooded habitat is present throughout the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Reptiles	prairie skink	<i>Plestiodon septentrionalis</i>	The prairie skink can occur in any native grassland habitat across the Rolling Plains, Blackland Prairie, Post Oak Savanna and Pineywoods ecoregions.	N	No native grassland habitat is present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	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	Sandy soils in pine flatwoods and scrubby areas are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	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).	N	No perennial streams or large water bodies are present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	Reptiles	Texas diamondback terrapin	<i>Malaclemys terrapin littoralis</i>	Coastal marshes, tidal flats, coves, estuaries, and lagoons behind barrier beaches; brackish and salt water; burrows into mud when inactive. Bay islands are important habitats. Nests on oyster shell beaches.	N	No coastal habitat is present in the project area.	No impact	No suitable habitat is present in the project area.	N
Harris	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	Upland pine and deciduous woodlands with dense ground cover are present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	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	A variety of terrestrial habitat is present in the project area.	May impact	Suitable habitat is present in the project area.	N
Harris	Reptiles	western chicken turtle	<i>Deirochelys reticularia miaria</i>	Aquatic and terrestrial: This species uses aquatic habitats in the late winter, spring and early summer and then terrestrial habitats the remainder of the year. Preferred aquatic habitats seem to be highly vegetated shallow wetlands with gentle slopes. Specific terrestrial habitats are not well known.	Y	Vegetated shallow wetlands and terrestrial habitats are present in the project area.	May impact	Suitable habitat is present in the project area.	N

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Harris	Reptiles	western hognose snake	<i>Heterodon nasicus</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 prairies or mesic habitats within arid landscapes are present in the project area.	No impact	No suitable habitat is present in the project area.	N